

WALLA WALLA UNIVERSITY

# Undergraduate Bulletin



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2019–2020

**Walla Walla University**  
**Undergraduate Bulletin**  
**2019-2020**

A web-based version of the Walla Walla University Bulletin is available online at  
[wallawalla.edu/bulletin](http://wallawalla.edu/bulletin)

## Walla Walla University

204 South College Avenue

College Place, WA 99324

(509) 527-2327

(800) 541-8900

[www.wallawalla.edu](http://www.wallawalla.edu)

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All photographs inside the bulletin by Jerry M. Entze



# ACCREDITATION OF WALLA WALLA UNIVERSITY

## **accredited by**

- Northwest Commission on Colleges and Universities
- Accrediting Association of Seventh-day Adventist Schools, Colleges and Universities (Adventist Accrediting Association)

## **programs accredited by**

- Accreditation Council for Business Schools and Programs (Bachelor of Business Administration, Bachelor of Science in Business Administration, and Bachelor of Arts in Business Administration degree programs)
- Engineering Accreditation Commission of ABET, Inc. (Bachelor of Science in Engineering degree program)
- Council on Social Work Education (Bachelor of Social Work and Master of Social Work degree programs)
- Collegiate Commission on Nursing Education (Bachelor of Science Nursing Program)
- National Association of Schools of Music
- State of Washington Professional Educator Standards Board (PESB)

## **a member of**

- Accreditation Council for Business Schools and Programs (ACBSP)
- American Academy of Underwater Sciences (AAUS)
- American Association of Collegiate Registrars and Admissions Officers
- American Association of Higher Education
- American Society for Engineering Education
- Council for Higher Education Accreditation
- Council of Independent Colleges
- Council on Social Work Education
- Independent Colleges of Washington, Inc.
- National Association of College and University Business Officers
- National Association of Independent Colleges and Universities
- National Association of Student Financial Aid Administrators
- National League for Nursing
- Orbis Cascade Alliance
- Washington Association of Colleges for Teacher Education
- Washington Consortium for the Liberal Arts (WaCLA)
- Washington Friends of Higher Education

## **approved by**

- The Attorney General of the United States for non-immigrant students
- The Washington Student Achievement Council (HECB/SAA) for enrollment of persons eligible to receive educational benefits under Title 38 and Title 10 USC.
- Washington State for training in Vocational Rehabilitation

### **Authorization for Washington**

Selected academic programs of study at Walla Walla University are approved by the Washington Student Achievement Council for enrollment of persons eligible to receive educational benefits under Title 38 and Title 10, U.S. Code.

### **Authorization for Oregon**

Walla Walla University is a non-profit corporation authorized by the state of Oregon to offer and confer the academic degrees of Bachelor of Science with a major in Nursing as described herein following a determination that state academic standards will be satisfied under OAR 583-030. Inquiries concerning the standards of school compliance may be directed to the Office of Degree Authorization, 1500 Valley River Drive, Suite 100, Eugene, OR 97401.

### **Equal Opportunity Commitment**

It is the policy of Walla Walla University to provide equal educational opportunity without regard to age, race, color, religion, national origin, sex, marital status, disability or other protected classes as required by local, state, and federal laws that apply to the University. In addition, the University provides equal employment opportunity without regard to age, race, color, national origin, sex, marital status, disability or other protected classes as required by local, state, and federal laws that apply to the University.

Walla Walla University prohibits all forms of sex discrimination and sexual misconduct including, but not limited to sex-based intimidation and harassment, sexual harassment, domestic violence, dating violence, stalking, and sexual violence. For further information or to report an incident, go to: <https://wallawalla.edu/title-ix>.

Information contained in this publication is hereby certified as true and correct in content and policy as of the date of publication, in compliance with the Veterans Administration DVB Circular 20-76-84 and Public Law 94-502.

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## **CONTACT INFORMATION**

<b>General Telephone Number</b>	(509) 527-2615
<b>General Fax Number</b>	(509) 527-2253
<b>Toll Free (Continental U.S.A. and Canada)</b>	(800) 541-8900
<b>Worldwide Web Site</b>	<a href="http://www.wallawalla.edu">www.wallawalla.edu</a>

### **MARKETING AND ENROLLMENT SERVICES**

<b>Associate Vice President</b>	Trevor Congleton
Application Forms for Admission	(509) 527-2327
	Fax: (509) 527-2397
General Information	Email: <a href="mailto:info@wallawalla.edu">info@wallawalla.edu</a>

## ACADEMIC RECORDS

<b>Registrar</b>	Carolyn Denney
Academic Information	(509) 527-2811
Transcripts and Transcript Evaluation	Fax: (509) 527-2574
Transfer Student Information	Email: registrar@wallawalla.edu
Veteran Information	(509) 527-2810

## STUDENT FINANCIAL SERVICES

<b>Director</b>	Cassie Ragenovich
Financial Information	(509) 527-2815
Work Opportunities	Email: stufin@wallawalla.edu
Financial Aid, Loans, and Grants	
Financial Planning	
Payment Arrangements	

## STUDENT LIFE

<b>Vice President</b>	Douglas Tilstra
Student Life Information	(509) 527-2511
	Fax: (509) 527-2674

## HOUSING

<b>Director of Residential Life and Housing</b>	Kristen Taylor
General Information, Sittner/Meske	(509) 527-2111
General Information, Foreman/Conard	(509) 527-2531
General Information, Portland	(503) 251-6118
General Information, Village Housing	(509) 527-2109

## PORTLAND CAMPUS

10345 S.E. Market St.  
Portland, OR 97216  
(503) 251-6115

## ROSARIO BEACH MARINE LABORATORY

15510 Rosario Beach Rd.  
Anacortes, WA 98221  
(360) 293-2326

Note: Administrative offices are closed from Friday noon until Monday morning and on legal holidays.

Administrative officers are available on Sundays by appointment.

# AREAS OF STUDY

## BACCALAUREATE DEGREES

### **Bachelor of Arts (B.A.)**

Art (p. 83)

\*Fine Art (p. 83)

\*Illustration (p. 84)

Biblical Languages (p. 232)

Business Administration (p. 92)

Computer Science (p. 115)

English (p. 150)

French (p. 108)

Global Communication (p. 104)

History (p. 165)

Humanities & Multi-Disciplinary Studies  
(p. 176)

Mathematics (p. 181)

Music (p. 189)

Psychology (p. 129)

Religion (p. 230)

Sociology (p. 212)

Spanish (p. 109)

Strategic Communication (p. 103)

Theology (p. 231)

### **Bachelor of Business**

#### **Administration (B.B.A.)**

\*Accounting (p. 90)

\*Entrepreneurship and Small Business  
Management (p. 90)

\*Finance (p. 91)

\*Management (p. 91)

\*Marketing (p. 91)

### **Bachelor of Music (B.Mus.)**

Music Education (p. 185)

Music Performance (p. 187)

### **Bachelor of Education (B.Ed.)**

Secondary Education (p. 125)

*\*Indicates concentration available*

### **Bachelor of Science (B.S.)**

Automotive Management (p. 168)

Automotive Service (p. 215)

Aviation Management (p. 222)

Aviation Technology (p. 217)

Biochemistry (p. 172)

Bioengineering Science (p. 172)

Biology (p. 86)

Biophysics (p. 175)

Business Administration (p. 93)

Chemistry (p. 100)

Computer Science (p. 116)

Elementary Education (p. 121)

Film, TV, & Media (p. 106)

Forensic Psychology (p. 131)

Global Development (p. 93) Graphic  
Design (p. 219)

Health Promotion (p. 156)

Health Science (p. 154)

Information Systems (p. 179)

Mathematics (p. 181)

\*Actuarial Studies (p. 182)

\*Applied Mathematics (p. 183)

\*Mathematics Preparation for  
Graduate Study (p. 183)

\*Mathematics Preparation for  
Secondary Teaching (p. 183)

Nursing (p. 196)

Physical Education (p. 158)

\*Fitness Management (p. 159)

\*Preparation for Teaching (p. 158)

Physics (p. 199)

Product Design (p. 220)

Psychology (p. 130)

### **Bachelor of Science in**

#### **Engineering (B.S.E.)**

\*Bioengineering (p. 141)

\*Civil Engineering (p. 141)

\*Computer Engineering (p. 144)

\*Electrical Engineering (p. 145)

\*Mechanical Engineering (p. 146)

### **Bachelor of Social Work (B.S.W.)**

Social Work (p. 211)

## ASSOCIATE DEGREES (TWO YEAR PROGRAMS)

Automotive Technology (p. 223)  
Aviation Technology (p. 223)  
Business (p. 96)  
Graphic Design (p. 225)  
Liberal Studies (p. 191)  
Pre-Dental Hygiene (p. 160)

Pre-Nutrition and Dietetics (p. 160)  
Pre-Physical Therapy (p. 161)  
Pre-Speech-Language Pathology and  
Audiology (p. 106)  
Product Design (p. 226)

## ACADEMIC MINORS

### **Art Department**

Art (p. 85)

### **Biology Department**

Biology (p. 87)

### **School of Business**

Business (p. 97)

Economics (p. 97)

International Development (p. 97)

Marketing (p. 97)

Preparation for Graduate Studies  
in Business (p. 98)

### **Chemistry Department**

Chemistry (p. 101)

### **Communication and Languages Department**

Arabic (p. 114)

Drama (p. 106)

Film and Television

Production (p. 112)

Global Communication (p. 112)

Journalism (p. 113)

Speech Communication (p. 113)

French (p. 113)

German (p. 113)

Italian (p. 114)

Portuguese (p. 114)

Spanish (p. 113)

Spanish In-Residence (p. 114)

### **Computer Science Department**

Computer Science (p. 117)

### **School of Education and**

### **Psychology**

Education (p. 128)

Psychology (p. 132)

Special Education (p. 129)

### **English Department**

English (p. 153)

### **Health and Physical Education Department**

Athletic Coaching (p. 162)

Health (p. 154)

Physical Education (p. 163)

### **History and Philosophy Department**

History (p. 166)

Legal Studies (p. 167)

Philosophy (p. 167)

### **Mathematics Department**

Mathematics (p. 184)

Mathematics for Middle School

Teachers (p. 184)

### **Music Department**

Music (p. 190)

### **Physics Department**

Physics (p. 200)

### **School of Social Work and Sociology**

Social Welfare (p. 213)

Sociology (p. 214)

### **Technology Department**

Aviation (p. 226)

Graphic Design (p. 227)

Photography (p. 227)

Technology (p. 228)

Web Design (p. 228)

### **School of Theology**

Biblical Languages (p. 233)

Religion (p. 233)

## PREPROFESSIONAL CURRICULA

The University offers courses required for admission to professional or technical schools. Most preprofessional curricula require two units of high school mathematics (algebra and geometry.) All programs should be planned in consultation with and approved by the assigned academic advisor.

Requirements for admission to preprofessional programs vary among different professional schools and are subject to change. Students should request information about current admission requirements from the professional school they plan to attend.

Dentistry (p. 202) (4)	Optometry (p. 205) (2)
Law (p. 203) (4)	Orthotics and Prosthetics (p. 206) (2)
Medical Radiography (p. 203) (1)	Pharmacy (p. 207) (2)
Medicine (p. 203) (4)	Physical Therapy Assistant (p. 207) (1)
Nursing (p. 204) (2)	Physician Assistant (p. 208) (2)
Occupational Therapy (p. 204) (2)	Veterinary Science (p. 209) (4)

Numbers in parentheses indicate the years of study normally required on the WWU campus before entrance into a professional school.

## GRADUATE DEGREES

(See Graduate Bulletin for details)

### **Master of Arts (MA)**

Cinema, Religion, and Worldview

### **Master of Arts in Teaching (MAT)**

Specializations:

Curriculum and Instruction  
Educational Leadership  
Literacy Instruction  
Special Education  
Individualized Area

### **Master of Education (MEd)**

Specializations:

Curriculum and Instruction  
Educational Leadership  
Literacy Instruction  
Special Education  
Individualized Area

### **Master of Initial Teaching (MIT)**

Specializations:

Instruction with Certification  
(Elementary)  
Instruction with Certification  
(Secondary)

### **Master of Science (MS)**

Biology

### **Master of Social Work (MSW)**

# ACADEMIC CALENDAR 2019-2020

## Autumn Quarter

September	15-20	S-F	University Experience and Orientation
	22	S	Registration
	23	M	Instruction Begins
	26	R	Last Day to Register
October	4	F	Last Day for Registered Students to Add a Class or Change to/from Audit
November	12	T	Last Day to Withdraw from Classes
	24	S	Thanksgiving Vacation Begins
December	1	S	Thanksgiving Vacation Ends
	9-11	MTW	Final Exams

## Winter Quarter

January	6	M	Instruction Begins
	9	R	Last Day to Register
	17	F	Last Day for Registered Students to Add a Class or Change to/from Audit
February	25	T	Last Day to Withdraw from Classes
March	16-18	MTW	Final Exams

## Spring Quarter

March	30	M	Instruction Begins
April	2	R	Last Day to Register
	10	F	Last Day for Registered Students to Add a Class or Change to/from Audit
May	19	T	Last Day to Withdraw from Classes
June	8-10	MTW	Final Exams
	14	S	Commencement (8:30 a.m.)

## Summer Quarter

June	22	M	Instruction Begins
July	3	F	Independence Day Holiday, no classes
August	14	F	Eight-week Session Ends
	28	F	Ten-week Session Ends

# OUR MISSION

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## Vision

A community of faith and discovery committed to the following core values:

- Excellence in thought
- Generosity in service
- Beauty in expression
- Faith in God

## Philosophy

Walla Walla University is founded on Christian teachings and values as understood and appreciated by the Seventh-day Adventist Church. Central to these teachings is the belief that every person is created in the image of God as a being of inestimable value and worth, imbued with powers of intelligence, stewardship, and creativity akin to those of the Creator. Walla Walla University, therefore, seeks in its mission to foster the unique gifts of every individual within this Christian community of faith and discovery. Committed to excellence in thought, the University seeks to impart a broad knowledge of the arts, sciences, and professions by careful instruction and open inquiry at both the undergraduate and graduate levels. Recognizing that God is the source of all truth, goodness, and beauty, the University seeks to convey to students a wisdom that translates academic achievement into responsible citizenship, generous service, a deep respect for the beauty in God's creation, and the promise of re-creation through Jesus Christ.

# THE UNIVERSITY CAMPUS

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Walla Walla University is located in the city of College Place, in the historic, fertile Walla Walla Valley of southeastern Washington. The Old Oregon Trail, passing west of the campus, leads directly to the nearby Whitman Mission National Historic Site. The scenic Blue Mountains to the east and the Snake and Columbia Rivers to the north and west offer opportunities for recreation and relaxation.

The University was originally established as Walla Walla College on December 7, 1892, in harmony with a resolution unanimously adopted at the General Conference of Seventh-day Adventists held in Battle Creek, Michigan in 1891.

**MONTANA CAMPUSES.** Walla Walla University has two branch campuses in Montana maintained by the Wilma Hepker School of Social Work and Sociology; one in Missoula and the other in the south side of Billings. These campuses serve the needs of students enrolled in the Master of Social Work program.

**PORTLAND CAMPUS.** Walla Walla University operates a separate campus in Portland, Oregon maintained by the School of Nursing. The campus is located on the grounds of the Adventist Medical Center and consists of an academic building and a residence hall for students enrolled as nursing majors.

**ROSARIO BEACH MARINE LABORATORY.** Walla Walla University operates a biological research and academic facility at Rosario Beach, adjoining Deception Pass State Park, Anacortes, Washington. This facility occupies 40 acres of beach



and timberland, and includes laboratory buildings, a cafeteria, assembly hall, and cabins for student and staff housing.

## OUR HERITAGE

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Founding a college is a tremendous undertaking. It can be especially intimidating in the dead of winter, with snow on the ground and quilts for heat. Such was the case in 1892, when Walla Walla College began on a frozen prairie a few miles west of Walla Walla, Washington. One building, five teachers, 101 students of all grades. If you like pioneer stories, we've got one for you. Sally Sutherland, wife of the first president, describes the scene:

"We began school without locks on the doors, with the kitchen unfinished, and without heat in the building. I kept the tuition (money) under my pillow with my bed in front of the door . . . The first breakfast was cooked on a borrowed stove, with the pipe leading out the kitchen window, and was served to eighty hungry students in a cold dining room...Thus, by the light of kerosene lamps and amid the sound of hammers on the unfinished building, those pioneer students studied, played, laughed and worked through their college days..."

The first few years were a struggle for survival. The college finally granted a full four-year degree in 1909. The next decade saw the founding of the Associated Students of Walla Walla College, and of the Alumni Association, and expansion of the academic program.

At the conclusion of World War II, WWC began a twenty-year period of expansion both academically and physically. Programs such as engineering were started during this period. The biology department added the Rosario Beach Marine Laboratory in 1954. A large scale building program culminated in the 1960s with the addition of several modern buildings, including the new College Church, Kretschmar Hall, Fine Arts Center, and Rigby Hall.

In the 1970s, WWC completed the Winter Education Complex and added a new campus for the School of Nursing in Portland, Oregon. The college remained forward-looking in the early 1980s with a new Alumni Center and plans for a major endowment drive to carry WWC into the 21st century.

The School of Social Work began a master's program (M.S.W.) in the late 1980s, expanding eventually to campuses in Montana-to Missoula in 1996, then to Billings in 2001.

A new Administration Building was completed in early 2007. The building houses the major administrative offices as well as the offices of Marketing and Enrollment Services and University Relations. In addition, the new structure serves as the home for three academic departments: English, History and Philosophy, and the School of Theology.

On September 1, 2007, Walla Walla College, following a vote by its constituency and approval by its Board of Trustees, officially became Walla Walla University.

Today, Walla Walla University has locks on the doors, heat in the buildings, a cafeteria and a business office to replace Sally Sutherland's pillow. Some things haven't changed, though. The faculty and students still study, work, play, and pray together. Alumni are loyal to their school and support it generously. And the

pioneer dedication to religion and Christian education that has strengthened Walla Walla University for over 100 years is very much alive today.

## STUDENT LIFE

---

Walla Walla University is dedicated to the academic, spiritual, social and physical aspects of a total education. Believing that these dimensions are closely related, the University provides a broad range of activities and opportunities designed to add depth and maturity to a Christ-centered life.

### CHRISTIAN COMMITMENT

Walla Walla University welcomes students from all backgrounds and asks them to respect the distinctive Seventh-day Adventist way of life both on and off campus. Adventism, at its best, is characterized by an emphasis on Christian faith and spiritual discipleship; a personal relationship with a gracious, loving, Creator God; moral and intellectual integrity and maturity of character; the sanctity of life; a positive regard for differences of conviction and perspective; healthful living, daily worship, and Sabbath rest.

**SABBATH OBSERVANCE.** The Seventh-day Sabbath is observed at Walla Walla University from sunset Friday to sunset Saturday. Students are expected to treat these sacred hours with reverence.

**CHURCH AND SABBATH SCHOOL.** Each Sabbath, the Walla Walla University Seventh-day Adventist Church offers formal opportunity for worship and spiritual renewal. The Sabbath School program provides numerous settings campus-wide for formal and informal group Bible study, prayer, music, meditation, and discussion.

**CHAPEL EXPERIENCE.** The chapel experience at WWU—known as CommUnity—includes Tuesday assembly and other events that offer weekly opportunities for the entire campus to gather for worship, academic reflection and discussion, celebrations of school spirit, social outreach, and civic enlightenment. These events are important to the spiritual and social unity of the University family. Most undergraduate students are required to participate.

**WORSHIPS.** Providing programs conducive to academic and spiritual growth is the reason Walla Walla University exists. To preserve this distinctive objective, and to develop a habit of worship, selected attendance at a variety of worship events is required for students living in the residence halls. Morning prayer services, small groups, and evening worships are available every day to give students several opportunities to meet the requirement.

**CAMPUS MINISTRIES.** Campus Ministries is an organization on campus, led by the Campus Chaplain and student leaders, that promotes religious understanding and activity on and off campus. Typical activities include Friday evening programs, a variety of worship opportunities throughout the week, small groups, prayer meetings, opportunities to socialize in a Christian context, and community service projects.

**OFFICE OF STUDENT MISSIONS.** Through the Student Missions (SM) Office, a large number of WWU students take advantage of international student mission and North American volunteer opportunities. Participating students typically spend up to one year abroad in volunteer service settings around the world.

**CABL (COLLEGIATE ADVOCATES FOR BETTER LIVING).** CABL, an outreach of Campus Ministries, emphasizes positive healthy lifestyle choices through a variety of informational, social, inspirational, recreational, and outdoor programs and activities open to all students without charging any dues.

**COMMUNITY OUTREACH.** Service to others is an integral part of Christian higher education. This organization provides opportunities for community service in the Walla Walla area.

**ATHLETIC OUTREACH.** The athletic program encourages students to grow in their Christian experience and develop a willingness to share that relationship with others. The opportunity is available for the student-athlete to be an active witness on the WWU campus and the community around us.

**VOLUNTEER MINISTRIES.** Involvement in ministry on campus, at the campus church, and in the community are an integral aspect of a community that is committed to being generous in service. A wide range of opportunities are provided to serve in these areas, as well as service days throughout the year, Sabbath afternoon outreach events, and travel to churches and academies throughout the Northwest to put on vesper programs and church services.

**SMALL GROUPS.** Campus Ministries (Chaplain's Office), encourages spiritual growth in small groups is vital to the religious life of Walla Walla University. Many groups meet weekly on campus for encouragement and spiritual growth.

**PRAYER MINISTRIES.** Campus Ministries (Chaplain's Office), provides a variety of opportunities for times of singing, praying, and spiritual support, including a daily opportunity, M-F at 7:30 a.m. in Heubach Chapel.

## **SOCIAL OPPORTUNITIES**

Walla Walla University places an emphasis on providing on-campus social opportunities consistent with its Christian mission.

**ASSOCIATED STUDENTS OF WALLA WALLA UNIVERSITY.** All WWU faculty, staff, and regularly enrolled undergraduate students are members of the ASWWU. ASWWU elected officers are responsible for a wide range of social and religious activity planning, and for representing student needs and concerns to WWU administrators. The ASWWU is also responsible for production of the Mask online student directory ([www.aswwu.com](http://www.aswwu.com)), the Collegian weekly student newspaper, and the Mountain Ash yearbook. ASWWU is sponsored by the Assistant Vice President of Student Life.

**CAMPUS CLUBS.** Students of varying interests and social tastes support a variety of campus clubs and interest groups. Most academic departments sponsor organizations designed to foster academic interaction in more informal settings. Other campus clubs include: Aleph Gimel Ain (AGA), residence hall women; Omicron Pi Sigma (OPS), residence hall men; and Village Club.

**LOCAL OPPORTUNITIES.** In addition to on-campus social activities, WWU students take advantage of a variety of local cultural opportunities. These include performances by the Walla Walla Symphony, art exhibits, lectures by leading political and entertainment personalities, and live theatrical productions.

## CAMPUS SPORTS AND RECREATION

**ATHLETIC PROGRAM.** Recognizing that athletics are an integral part of campus life at WWU, the athletic program is designed to provide opportunities for Christian athletes to participate and excel in high-level athletic endeavors. The activities are designed to move beyond traditional intramural sports and encompass the following: Women's sports: basketball, cross country, golf, volleyball; Men's sports: basketball, cross country, golf, soccer.

**INTRAMURALS.** A recreational sports program in individual and team sports that encourages campus-wide involvement at all skill levels. More than 60 percent of WWU students participate in at least one intramural activity during the school year.

**REGIONAL OPPORTUNITIES.** Regional sporting opportunities include wind-surfing on the nearby Columbia and Snake Rivers, hiking, mountain biking, and rock climbing in the Blue Mountains, or skiing/snowboarding at any of several ski resorts.

**ASWWU OUTDOORS AND MT. RENTS.** These ASWWU programs provide students with opportunities to connect to nature through a variety of outdoor recreational trips, educational courses, and rental gear for outdoor adventures in the Pacific Northwest during the school year.

## STUDENT HOUSING

**RESIDENCE HALLS.** Walla Walla University provides on-campus housing for unmarried students. Students who register for 6 hours or more, under 22 years of age or with less than 135 quarter hours completed, are required to live in a residence hall. Requests for exceptions are processed through the Residential Life and Housing. Campus residence hall options include:

**Foreman/Conard Hall.** This residence hall complex houses approximately 400 women. The Foreman portion is a seven-story high-rise for upper-division women, featuring a fitness center, elevator service and air-conditioned rooms. The Conard portion includes a large worship room, study areas, and small parlors. Foreman/Conard provides laundry and kitchen facilities.

**Sittner Hall.** Accommodating approximately 450 men. This residence hall includes lounges, a recreation room, a large collaborative study space, and health club facilities.

**Meske Hall.** Meske Hall occupies the front wing of Conard Hall and accommodates 100 upper-division men.

**Hansen Hall, Portland Campus.** Hansen Hall is designated for unmarried students, and is located adjacent to the WWU School of Nursing and the Portland Adventist Medical Center.

**APARTMENTS.** The University owns and manages unfurnished rental units, consisting of studio, one- and two-bedroom apartments, and houses for both single (who have permission to live outside of residence halls) and married enrolled students. The Village Housing office is located at 26 N. College Avenue, College Place, WA; telephone: (509) 527-2109.

## STUDENT SERVICES

**UNIVERSITY CLINIC.** The University Clinic provides medical care, preventive health, and health education services to students, faculty, and staff on Walla Walla University's main campus.

**Main Campus.** An on-campus University clinic with a highly qualified staff provides acute and some chronic care services for students requiring medical attention. Referrals for other chronic or emergency conditions will be made to the local clinics and hospitals; however, the student is responsible for charges incurred.

**Portland School of Nursing.** The Adventist Health Medical Group - Parkrose Clinic provides health care for students on the Portland campus. This clinic accepts students with insurance from most providers. If a condition warrants, the student may be referred to a specialist. If referred, the student is responsible for making financial arrangements with the provider.

**INFORMATION TECHNOLOGY.** Information Technology operates computer systems for the use of faculty, staff, and students of WWU. All systems are connected to the internet by a campus-wide wired and wireless computer network, as well as VPN access to all staff, faculty, and students from off campus. Because of this most system files are available from any location on campus and off. To do their classwork, students can use computer labs on campus, desktops in their room, or their own laptops connected to the campus wireless network. When they are off campus students can VPN into the syknet.local domain and do their homework from a coffee shop.

A wide variety of software applications are available for the use of faculty, staff, and students. These include popular programs for word processing, spreadsheets, databases, programming languages, graphic design, CAD, communications, and mathematical computation. We highly encourage staff, faculty, and students to utilize Office365, an online personal database which includes Outlook, Word, PowerPoint, and other programs, *and* which gives each user a Terabyte of space to save their work.

## ACADEMIC SERVICES

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### KGTS/POSITIVE LIFE RADIO NETWORK

KGTS is federally licensed as an educational, community-service station. Owned by Walla Walla University and operated as an Academic Support department, the station serves the Communication and Languages Department and others by training students in broadcasting, management, audio production, sales and development, engineering and research. KGTS/Positive Life Radio Network is funded primarily by listeners and local businesses with support from WWU. (509) 527-2991.

At Positive Life Radio, we are compelled to:

- Be approachable

*Philippians 1:9-11 So this is my prayer: that your love will flourish and that you will not only love much but well. Learn to love appropriately. You need to use your head and test your feelings so that your love is sincere and intelligent, not sentimental gush.... making Jesus Christ attractive to all, getting everyone involved in the glory and praise of God.*

- Demonstrate integrity

*1 Chronicles 29:17 I know, my God, that you test the heart and are pleased with integrity. All these things have I given willingly and with honest intent. And now I have seen with joy how willingly your people who are here have given to you.*

- Pursue a devotion to service

*Matt 5:14-16 Here's another way to put it: You're here to be light, bringing out the God-colors in the world. God is not a secret to be kept. We're going public with this, as public*

*as a city on a hill. If I make you light-bearers, you don't think I'm going to hide you under a bucket, do you? I'm putting you on a light stand. Now that I've put you there on a hilltop, on a light stand—shine! Keep open house; be generous with your lives. By opening up to others, you'll prompt people to open up with God, this generous Father in heaven.*

#### Who We Are:

- A community of believers—the staff, the listeners, supporters and friends.
- A cooperative effort of partnering stations around the Northwest—and around the world on our website.
- Financially supported and programmed for people of many faiths.
- Ownership of stations broadcasting Positive Life Radio. All station owners are non-profit organizations as defined by the IRS.

#### How We Do It:

- Music with a message that encourages and challenges us all.
- Heavy involvement with community events: bringing you concerts by Christian artists, assisting local churches in promoting their events, and partnering with them in serving the communities we're in.
- Through our Hands & Heart initiative. International projects such as Rice for Cambodia and Days of Compassion; local projects such as Christmas in July food drive.

#### Why We Do It:

- We have a love for God, our communities, our neighbors, and the beautiful Northwest.
- We are excited about sharing with others how God has changed us and can change them as well.

## WWU LIBRARIES

**Faculty librarians, library staff, and student assistants seek to inspire excellence in thought by bringing people and information together in innovative ways at the WWU Libraries including the main Peterson Memorial Library ([library.wallawalla.edu](http://library.wallawalla.edu)) on the College Place campus, the School of Nursing Library on the Portland campus, and the MSW focused libraries on the Billings and Missoula campuses.** On each campus, librarians and/or other professional staff are available to facilitate student success by helping students learn information literacy concepts, connect to reference and research support, and access academic sources.

### **LEARN. DEVELOPING THE INFORMATION LITERATE STUDENT.**

Beginning with JumpStart students, the university library's Information Literacy Program supports student growth in research and encourages critical thought about information and learning processes throughout the student's academic career. Closely, aligned with the university's general studies objectives, this program provides students with the opportunity to learn about the contextual authority of information, explore information creation as a process, consider the value of information, practice research as inquiry, scholarship as communication, and searching as exploration.

**CONNECT. RESEARCH AND REFERENCE ASSISTANCE.** Librarians, library staff, and library student assistants are dedicated to serving the information needs of students and faculty. They seek to facilitate student success through assistance in finding articles and other resources for papers, speeches, and other assignments through Research Guides, databases, face-to-face interactions, chat and email

reference, and the LibAnswers Knowledge Base. More in-depth research consultation with faculty librarians is also available.

**ACCESS. RESOURCES AND RESEARCH CENTRAL.** Research Central, WWU's online discovery system, connects students and faculty on all campuses to the WWU Libraries' collections. The combined WWU libraries contain over 490,000 items, including books, eBooks, print and online journals, videos, DVDs, and streaming video. Over 100 full-text databases provide access to thousands of journal articles, academic videos, and reference resources. Subscriptions for many of the library's databases are made possible by membership in library consortia such as the Adventist Library Information Cooperative (ALICE) and the Orbis Cascade Alliance. Off-campus access is available to current students and faculty with their university login.

Research Central also connects students to resources in the university's Curriculum Library (School of Education), Hutto Patterson Research Center (history department), and the English department's film literature collection.

**Summit Borrowing** in Research Central, made available through membership in the Orbis Cascade Alliance, offers direct access to over 28 million items, including books, eBooks, sound recordings, and films held by over 38 other academic libraries in Washington, Oregon, and Idaho. College Place and Portland students, faculty, and staff may request Summit items online directly through Research Central. Material pick-up is available for the Peterson or Portland libraries and delivery time is typically five to seven business days. Presently, the Summit service is not available to the Montana MSW sites.

**Interlibrary Loan.** For those items not available in the university's collections or Summit, yet needed for either course work or faculty research, the university libraries offer an interlibrary loan service for resources available within the United States. Requested materials generally arrive within two weeks.

**STUDY AREAS.** Study spaces are available on every campus. Peterson Memorial Library offers online room reservations, accessible through the library's website, for a number of its study areas.

**CURRICULUM LIBRARY.** Located in Smith Hall and operated by the School of Education, the Curriculum library contains K-12 textbooks, children's literature and magazines, standardized tests, math and science manipulatives, games, puppets, die cutter and dies, laminator, copier, computers, and scanner.

## VETERANS BENEFITS

Walla Walla University is an approved training institution for veterans eligible for educational benefits. The required course load is twelve hours per quarter in order to maintain eligibility to receive maximum benefits. If you have questions about veterans' policies, please contact the Veterans Administration coordinator in the Academic Records Office (509) 527-2811.

# STUDENT RIGHTS AND RESPONSIBILITIES

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To maintain a proper atmosphere for Christian growth and maturity, and to ensure that the rights of all students are respected, the University expects students to act as responsible citizens, abiding by local, state, and federal laws and to conduct themselves honorably. Although students of all religious persuasions are welcome, the University does expect students to live as members of a Christian community as detailed in the Student Handbook.

**STUDENT APPEALS.** Students have a right to appeal decisions and actions relating to their programs. Academic appeals should be directed to the Associate Vice President for Academic Administration, social appeals to the Vice President for Student Life, and financial appeals to the Director of Student Financial Services. If satisfaction is not obtained, students may consult the Walla Walla University Grievance Policy.

## FAMILY EDUCATION RIGHTS AND PRIVACY ACT (FERPA)

In accordance with the Family Educational Rights and Privacy Act (commonly referred to as FERPA, or the "Buckley Amendment,") Walla Walla University has adopted the following policies and procedures to protect the privacy of education records. Students will be notified of their FERPA rights annually by publication in the Bulletin and on the WWU homepage.

**DEFINITIONS.** Walla Walla University uses the following definitions in this policy:

Student: any person who attends or has attended WWU.

Education records: any record maintained by the University which is directly related to a student, with the following exceptions:

Personal records kept by university employees which are in the sole possession of the maker and are not accessible or revealed to any other person except a temporary substitute;

Employment records unless the employment records are contingent on the fact that the employee is a student

**RIGHT OF THE UNIVERSITY TO REFUSE TO PROVIDE COPIES.** Walla Walla University reserves the right to deny copies of transcripts or other records (not required to be made available under FERPA), if the student has an overdue financial obligation to the University or if there is an unresolved disciplinary or academic dishonesty action against the student.

**DISCLOSURE OF EDUCATION RECORDS.** Walla Walla University will disclose information from a student's education records only with the written consent of the student, except:

To school officials who have a legitimate educational interest in the records. A school official is:

- a. A person employed by the University in an administrative, supervisory, academic, research, or support staff position
- b. A person elected to the Board of Trustees;
- c. A person employed by or under contract to the University to perform a special task, such as legal counsel or an auditor.
- d. A student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her task.



A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her task. Examples include:

- To perform a task that is specific in his or her job description or by a contract agreement
- To perform a task related to a student's education
- To provide a service or benefit relating to the student or student's family, such as health care, counseling, job placement, or financial aid
- To supply relevant information to officials of another school, upon request, in which a student seeks or intends to enroll
- To support certain officials of the U.S. Department of Education, the Comptroller General, and state and local educational authorities, in connection with certain state or federally supported education programs
- To fulfill a student's request for, or receipt of, financial aid, as necessary to determine the eligibility, amount, or conditions of the financial aid, or to enforce the terms and conditions of the aid
- To accommodate a state law requiring disclosure that was adopted before November 19, 1974
- To enable organizations to conduct certain studies for, or on behalf, of the University
- To allow accrediting organizations to carry out their functions
- To comply with a judicial order or a lawfully issued subpoena
- To support appropriate parties in a health or safety emergency
- To provide an alleged victim of any crime of violence or sexual harassment offense of the results of any institutional disciplinary proceeding against the alleged perpetrator with respect to that crime or offense

**RECORD OF REQUESTS FOR DISCLOSURE.** Walla Walla University will maintain a record of all requests for and/or disclosure of information from a student's education records. The record will indicate the name of the party making the request, any additional party to whom it may be re-disclosed, and the legitimate interest the party had in requesting or obtaining the information. The record may be reviewed by the student.

**DIRECTORY INFORMATION.** Walla Walla University designates the following categories of student information as public or "Directory Information." Such information may be disclosed by the institution at its discretion.

1. Name.
2. Current enrollment status.
3. Telephone number.
4. Date and place of birth, dates of attendance, class standing, previous institution(s) attended, major field of study, awards, honors (including Dean's List), degree(s) conferred (including dates), and full-time or part-time status.
5. Email addresses.

Currently enrolled students may withhold disclosure of Directory Information. To withhold disclosure, written notification must be received in the Academic Records Office at: Walla Walla University, 204 S. College Ave., College Place, WA 99324. Directory Information will then be withheld indefinitely until the Academic Records Office receives in writing a revocation of the request for nondisclosure.

Walla Walla University will honor a request to withhold information listed but cannot assume responsibility to contact the student for subsequent permission to release the requested information. Regardless of the effect upon the student, the institution assumes no liability as a consequence of honoring instructions that directory information be withheld.

**CORRECTION OF EDUCATION RECORDS.** If students believe that any information contained in their education records is inaccurate, misleading, or in violation of their privacy rights, they may request in writing that the office which contains those records amend them. Students should identify the part of the record they want changed and specify why they believe it is inaccurate, misleading, or in violation of their privacy rights.

That office will reach a decision and inform students in a reasonable amount of time after receiving the request. If the records custodian refuses to amend the record, students have the right to a hearing. This hearing will be conducted by an appropriate committee appointed by the Academic Vice President of the University. The hearing will be held within a reasonable amount of time after the request for a hearing has been made. The hearing committee will notify the student, reasonably in advance, of the date, place, and time of the hearing.

Students will be afforded a full and fair opportunity to present evidence relevant to the issue raised. Students may be accompanied by one or more other persons. The committee will make its decision in writing based on the evidence presented at the hearing. The decision will include a summary of the evidence presented and the reasons for the decision.

If the hearing committee supports the complaint, the education record will be amended accordingly and students will be so informed. If the hearing committee decides not to amend the education record, students have the right to place in the education record a statement commenting on the challenged information and/or stating the reasons for disagreeing with the decision. This statement will be maintained as part of the education record as long as the contested portion is maintained, and whenever a copy of the education record is sent to any party, the student's statement will be included.

## ADMISSION TO THE UNIVERSITY

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Walla Walla University welcomes to its school family students who wish to obtain a quality education in a Christian environment (Walla Walla University is affiliated with the Seventh-day Adventist Church). Students, faculty, and staff share in the mutual obligation to uphold the Christian philosophy and policies of the University.

It is the policy of Walla Walla University to provide equal educational opportunity without regard to age, race, color, religion, national origin, sex, marital status, disability, or other protected classes as required by local, state, and federal laws that apply to the University. In addition, the University provides equal employment opportunity without regard to age, race, color, national origin,

sex, marital status, disability, or other protected classes as required by local, state, and federal laws that apply to the University.

## ADMISSION REQUIREMENTS

(U.S. Citizens, Canadian Citizens and U.S. Permanent Residents)

(International applicants refer to Admission Requirements and Procedures for International Students)

Walla Walla University practices a selective admissions policy. To be considered for admission to the University, students should demonstrate scholastic achievement, good character, and financial support.

Prospective students must submit a completed application form accompanied by a non-refundable \$40 (U.S.) fee. Copies of the official form are available from the Marketing and Enrollment Services Office or on the web at [www.wallawalla.edu](http://www.wallawalla.edu). Application should be made BY THE PREFERRED DEADLINE FOR EACH QUARTER. THE PREFERRED DEADLINES ARE: AUTUMN QUARTER, **SEPTEMBER 1**; WINTER QUARTER, **DECEMBER 1**; SPRING QUARTER, **MARCH 1**; SUMMER QUARTER, **JUNE 1**. TO QUALIFY FOR PREREGISTRATION FOR AUTUMN QUARTER, APPLICATION FILES MUST BE COMPLETED BY AUGUST 15.

The following entrance requirements apply to students entering all bachelor and some associate degree programs. Students entering associate degree programs should inquire concerning possible variations in entrance requirements.

**FIRST-TIME FRESHMEN.** *Students who have not received post-secondary credit from another institution after the summer of their high school graduation.* Minimum requirements for admission include:

1. Official transcript from the high school graduating the student. Transcripts from the accredited high school must be received from the school registrar. Transcripts from an unaccredited high school must be signed and sealed by a designated school official. Home school transcripts must be notarized as an official transcript representing the student's academic work, and signed by the home school program administrator. High school, unaccredited high school, and home school transcripts must show a cumulative grade point average and date of graduation.
2. A minimum cumulative grade-point average of 2.5 for all high school work.
3. The high school transcript must show completion of the following credits:
  - a. English 40 credits
  - b. History 20 credits
  - c. Algebra 1 10 credits
  - d. Algebra 2 10 credits\*
  - e. Geometry 10 credits\*
  - f. Science 10 credits
  - g. Laboratory Science 10 credits

\*Students who are missing geometry and/or algebra 2 can be accepted with a cumulative grade point average of 2.5 or higher but must make up the math deficiency. If the math deficiency is

not made up before coming to Walla Walla University, they will be placed in MDEV 002 and/or MDEV 003.

4. Transcripts from unaccredited high schools and home school high school programs must demonstrate that all their state requirements for high school graduation have completed.
5. Students who cannot provide an official transcript that meets the above requirements 1-4 must provide official GED scores showing a total score of 640 or higher with sectional scores of 150 or higher.
6. Official copy of the ACT and/or SAT exam scores.
7. Satisfactory personal reference. One completed recommendation form from a teacher, school counselor, principal, employer, pastor, co-worker, friend, or non-family person.
8. Official copy of TOEFL/ITEP/IELTS test scores if English is not the student's first language. A score of 79 or higher is required for the TOEFL, 3.9 or higher for the ITEP, or 6.5 or higher for the IELTS to be admitted.

Occasionally students are admitted into WWU who have a high school grade-point average below 2.5 and/or who lack one or more of the subjects required for entrance. Students with a high school grade point average below 2.5, if admitted, will be admitted on academic probation by the WWU Admissions during the first term of enrollment. If this requirement is met, the student may continue enrollment on regular basis. If a 2.0 term grade-point average is not achieved during the probationary term, the student is automatically dismissed from the University.

Any student admitted with a grade-point average below 3.0 is required to enroll in GNRL 102 On Course.

A student who has "P" grades (pass grade) on their high school transcript should be aware that in order for a student to meet the Freshman scholarship grade-point average criteria they must produce a transcript with a minimum of two years of calculable high school grades from an accredited agency. If a student is unable to produce the required amount, they will default into the ACT/SAT test score scholarship category.

A student accepted with entrance deficiencies must either make up the deficiencies prior to enrollment or enroll in the appropriate remedial course(s) at WWU. The student should consult the Director of Academic Advisement about specific courses for making up these deficiencies. All students must satisfy the entrance requirements in mathematics before enrolling in any college-level mathematics course.

In order to continue enrolling at WWU, students must make up all entrance deficiencies by the end of the third term of enrollment at WWU, or before 45 college-level credits have been earned, including transfer credits, if any.

A student admitted with a grade-point average below 2.5 is on academic probation for the first quarter in attendance as listed under Conditions of Academic Probation. A student on academic probation must earn a grade-point average of at least 2.0 in college-level courses during the first term of enrollment. If this requirement is met, the student may continue enrollment on regular status. If a 2.0 term grade-point average is not achieved during the probationary term, the student is automatically dismissed from the University.

In addition to the requirements for admission, the following semester credits are highly recommended for entrance to the undergraduate curriculum:

Semester Credits	
Foreign Language	20
Social Studies	10
Laboratory Science (additional)	10
*Mathematics	10

\*Some departments require 10 semester credits of advanced mathematics, including trigonometry. These departments include Chemistry, Computer Science, School of Engineering, Mathematics, Physics, and School of Business.

**TRANSFER STUDENTS.** *Students who have received post-secondary credit from another institution after the summer of their high school graduation.* Minimum requirements for admission include:

1. A grade-point average of 2.00 on all post-secondary work from all institutions combined.
2. Graduation and official transcript from an accredited secondary school or the completion of the GED exam. GED scores must show a total score of 150 or higher for each section of the exam and a total average score of 640 or higher. (Transfer students who have junior or senior status [90+ credits] are not required to supply WWU with an official high school transcript.)
3. A student who transfers to Walla Walla University with 30 or more transferable quarter hours will not be required to write the ACT or SAT exam.
4. Official transcripts from all post-secondary institutions attended. Any student receiving GI Bill®\* education benefits while attending WWU is required to obtain transcripts from all previously attended schools and submit them for review of prior credit.
5. Satisfactory personal reference. WWU requires one completed recommendation form from the most recent educational institution attended. The recommendation form needs to be completed by a former teacher, guidance counselor or school administrator. **Transfer students who apply to the WWU School of Nursing are required to submit three completed recommendation forms. Students who have been academically dismissed or have been on academic probation and students who have been convicted of a misdemeanor or felony will be required to submit three completed recommendation forms.** Recommendation forms may be submitted online.
6. Official copies of TOEFL/iTEP/IELTS test scores if English is not the student's first language. Ask the testing service to send these scores directly to the Walla Walla University Marketing and Enrollment Services Office.

Students who have not previously attended a Seventh-day Adventist college, please see the Religion and Theology section under General Studies requirements.

\*GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at <http://www.benefits.va.gov/gibill>.

**Accredited Colleges.** Applicants who have attended North American regionally accredited institutions of higher education and who have official transcripts showing a minimum grade-point average of 2.00 on all course work taken may be admitted at a level determined by the number of credits transferred.

**Non-Accredited Colleges.** Students transferring from non-accredited institutions may be required to take validating examinations should they wish credit to be transferred to Walla Walla University.

**Community Colleges.** A minimum of 96 of the 192 quarter hours required for graduation must be taken at a four year regionally accredited college or university.

**Vocational or Technical Credit.** A maximum of 15 credits of vocational or technical courses, C- or better, taken at a regionally accredited college or university, may be transferred to Walla Walla University as general electives. Credits do not apply toward a major, minor, or general studies.

**Foreign Transcript Evaluation.** Transcripts received from foreign institutions will be evaluated on an individual basis. In some instances, the student may be required to request an official evaluation from a foreign credentialing education service. Accepted courses will be issued a pass/fail grade and will not be calculated into the cumulative GPA for graduation.

**Senior Transfer Students.** Transfer students with senior standing are required to be in residence three consecutive quarters and complete a minimum of 40 quarter hours at WWU, including nine quarter hours of upper-division work in the major and three upper-division quarter hours in the minor, and meet all degree requirements. See minimum residency requirements section of this bulletin.

**Engineering Transfer Students.** Students enrolled in the Engineering affiliation program will be allowed to graduate under any official Walla Walla University bulletin dated not more than three academic years prior to their first year on this campus. Students who withdraw from engineering studies for a continuous period of one year or more will forfeit the right to graduate under bulletins which were current prior to their withdrawal.

**Engineering transfer students applying for admission to Walla Walla University must supply a letter of recommendation from one of their engineering professors at their most recent educational institution attended.** Recommendation forms may be submitted online.

**Nursing Transfer Students.** All nursing students refer to the Nursing section of this Bulletin for additional requirements.

**Military Credits.** Two quarter credits of the general studies physical education requirement will be waived for students eligible for VA benefits. Students who provide an official accredited military transcript listing Basic Training may be awarded a maximum of 6 quarter credits of physical education. The remainder of the transcript will be evaluated as other accredited transcripts. No credit will be awarded for specialty training or vocational programs.

**International Baccalaureate (IB) Program.** Students who engaged in college-level study in high school through the International Baccalaureate (IB) Program can obtain credit toward a WWU degree on the basis of their performance on the higher level IB exam. Students should submit an official IB transcript to the Academic Records Office for evaluation. All IB evaluations will be in collaboration with the appropriate WWU department. Credits accepted will be on a pass/fail basis.

**Appeal of Transfer Credit Evaluation.** If a student questions the evaluation of their transfer credits, they may appeal to the Registrar. The student may be requested to submit a syllabus of the course(s) in question and/or any documents that may support the appeal. If resolution is not met in consultation with the Registrar, the student may petition Academic Standards Committee for a review of their request.

**POSTGRADUATE STUDENTS.** Students who have completed a baccalaureate degree from a regionally accredited institution and are not applying for an advanced degree. Minimum requirements for admission include:

1. A grade-point average of 2.00.
2. Official transcripts from all post-secondary institutions attended.
3. Satisfactory personal reference. Recommendation forms may be submitted online.
4. Official copies of your TOEFL test scores unless graduation is from a four-year English institution. Request the Testing Service to send these scores directly to the Walla Walla University Marketing and Enrollment Services Office.

**RETURNING STUDENTS.** Students who have attended Walla Walla University previously but were not enrolled at Walla Walla University the preceding quarter (excluding summer quarter) are classified as returning students. Returning students must apply for admission and be accepted again to be enrolled at Walla Walla University. Minimum requirements for readmission include:

1. A grade-point average of 2.00 on course work taken at Walla Walla University or a cumulative grade-point average of 2.00 with at least 36 transferable hours of course work taken at another college if the student has been absent for more than one year from Walla Walla University.
2. An acceptable citizenship record while at Walla Walla University.
3. Official transcripts from each post-secondary institution attended since the last quarter at Walla Walla University with a grade-point average of 2.00.

**NONMATRICULATED STUDENTS.** Students who are not seeking or ineligible for regular admission and who are not candidates for a degree or financial aid from Walla Walla University. Nonmatriculated students may register for credit for any course for which they have sufficient academic background and teacher approval. By completing requirements for regular admission, a nonmatriculated student may become a degree candidate. Application must be made through the Marketing and Enrollment Services Office.

**GUEST STUDENTS.** Students who have been in residence at other institutions of higher education and who are not candidates for a degree or financial aid from Walla Walla University. Guest students must show that they are in good and regular standing at the university or college to which the credits are to be transferred. The application process is initiated through the Office of the Vice President for Academic Administration.

**DUAL CREDIT STUDENTS.** Students who are currently enrolled as a junior or senior in secondary school, have a high school GPA of 3.0 or higher, have successfully completed Algebra I and Geometry with a C or higher, and who have permission from their high school instructor or principal, may register for selected Walla Walla University courses. Dual credit students are not eligible for financial aid. Application needs to be made through the WWU Academic Records Office. Please see Dual Enrollment Policies in the Academic Information and Policies section of this bulletin for more details.

## ADMISSION PROCEDURES

(U.S. and Canadian Citizens and Permanent Residents)

**APPLICATION AND APPLICATION FEE.** Applications must be completed entirely, to begin the admissions process. Applications may also be submitted on-line at [wallawalla.edu](http://wallawalla.edu). A non-refundable \$40 (U.S.) application fee is required and should be submitted at the time of application. School of Nursing transfer students are required to complete a general WWU application and a School of Nursing application as part of the admissions process.

**OFFICIAL TRANSCRIPTS.** Request official transcripts from each institution attended and have them sent directly to the Marketing and Enrollment Services Office of Walla Walla University. Failure to indicate at the time of application that work has been taken at other institutions invalidates the admission process. Undergraduate students must have on file with the University either high school transcripts, GED scores or a letter verifying date of graduation/GED scores from administering institution in order to enroll. Students who complete a GED are also required to submit official transcripts of all high school work completed. Transfer students who are entering WWU are not required to supply an official high school transcript if they have junior or senior level status (90+ credits). Students already holding a baccalaureate degree are not required to submit high school transcripts. Should transcripts not be received in the time-frame described under the section Registration without Official Transcripts, student status and financial aid at Walla Walla University may be affected. International transcripts will be evaluated in conjunction with published guidelines for each country.

Academic records become the property of the University and may be released intra-campus for purposes of academic advisement/evaluation/administration as deemed necessary. Copies or originals of admission documents cannot be released to the applicant. Transcripts, applications and other credentials submitted for admission will be destroyed after two years if the applicant does not enroll.

**UNIVERSITY ENTRANCE EXAMINATION.** ACT (American College Testing Program) and/or SAT test scores are required of entering freshmen and transfer students with fewer than 30 quarter credits (unless they have been out of high school for five or more years). The ACT Test may be taken upon arrival at WWU. Students without these test scores will be provisionally registered (provided other criteria are met) until they have taken the ACT during a regularly scheduled on-campus test date the first quarter in residence. **Please Note:** To ensure academic success, English screening of all applicants is a part of the registration process unless the student has previous satisfactory ACT results.

All Seventh-day Adventist senior academies in the North Pacific Union Conference are non-Saturday testing centers for ACT. Students not enrolled at these high schools are invited to write or telephone the guidance counselor or principal at the academy of their choice to obtain information regarding participation in the ACT non-Saturday testing program.

**PERSONAL REFERENCES.** Request one individual, who knows your academic qualities well and is not related to you, to complete a reference form on your behalf. A possible reference may come from your academic advisor, guidance counselor, teacher/professor, or school administrator. The School of Nursing program requires three completed recommendation forms. Students who have been academically dismissed or have been on academic probation and students



who have been convicted of a misdemeanor or felony will be required to submit three completed recommendation forms. A person recommending you may submit an Online Reference at [wallawalla.edu/form/enrollment-reference](http://wallawalla.edu/form/enrollment-reference).

Transfer students must be in good and regular standing from the institution most recently attended when transferring to Walla Walla University. A letter of reference is requested from the most recently attended institution. Additional forms are available online at [wallawalla.edu/form/enrollment-reference](http://wallawalla.edu/form/enrollment-reference).

**TOEFL, iTEP, IELTS TEST REQUIREMENT.** If English is not their first language, students will demonstrate the ability to pursue studies in the English language by passing the TOEFL (Test of English as a Foreign Language), the iTEP (International Test of English Proficiency), or the IELTS (International English Language Testing System). The following scores are required for entry into Walla Walla University:

- A score of 79 or higher on the internet-based exam (TOEFL)
- A score of 3.9 or higher on the iTEP
- A score of 6.5 or higher on the IELTS

In addition to the English proficiency test, students will be evaluated after arrival at Walla Walla University for appropriate placement in English.

Students who supply TOEFL scores and whose first language is not English who are transferring from an English medium secondary school, are required to take Walla Walla University's English Placement Test, which includes a writing sample. If students do not qualify for College Writing courses, they will be placed in an appropriate reading and/or writing class before entering ENGL 121.

**LETTER OF ACCEPTANCE.** After the applicants' transcripts and references have been received and approved by the Marketing and Enrollment Office, prompt notification of acceptance is sent. Applicants should not consider themselves accepted (and should not plan to reside or work on campus) until official notification of acceptance is received. Applicants may check on the status of their application by calling (509) 527-2327, (800) 541-8900.

#### **ENROLLMENT FEE.**

- If you are enrolling for six or more credit hours, a \$200 non-refundable enrollment fee will hold your spot at WWU. Payment of this fee allows us to confirm your WWU housing arrangements and allows you to register and be placed in classes
- A \$100 rebate will be applied to your school bill when you enroll at WWU if your fee is paid according to these deadlines:
  - Autumn enrollment - received by April 30th preceding the Autumn term.
  - Winter/Spring/Summer enrollment - received two weeks before the first day of classes for the respective quarter.
- Students who do not pay the enrollment fee by the above deadlines will lose their placement in classes and will not be allowed to enroll until the fee is paid.

**MEDICAL INFORMATION.** The University Health Clinic requires students to complete an insurance form and a Personal Health Assessment record, inclusive of immunization status. Forms are available from the University Clinic or online at [wallawalla.edu/health](http://wallawalla.edu/health).

**CERTIFIED BACKGROUND CHECK.** Applicants who have been convicted of a misdemeanor and/or felony will be required to complete a certified background check before admission to Walla Walla University. The results of the background check will be reviewed by the Walla Walla University Admissions Committee and the admissions committee will make the admissions decision to either accept or deny admission into the university. Nondisclosure of criminal activity may act to invalidate application/enrollment.

## ADMISSION BY EXAMINATION

An individual without a high school diploma who has not completed secondary school may be admitted to freshman standing on the basis of:

1. **Accredited Home School Agency**

Applicants may be admitted upon successful completion of high school through an accredited home school agency with a cumulative grade point average of 2.5 or higher. WWU must receive an official high school transcript from the accredited home school agency.

2. **GED Scores**

Average score of 50/640 on the five/four sections, with no individual score below 45/150. All students admitted with GED scores will take placement tests in Mathematics and English to determine appropriate courses.

3. **California High School Proficiency Examination**

Applicants who are under 18 years of age but have successfully completed the California High School Proficiency Examination may be considered for admission provided that (1) a minimum of two years of high school has been completed; (2) written parental permission has been given; (3) the application letter lists reason, goals and objective for acceleration. A copy of this letter will be sent to the applicant's high school principal and residence dean/counselor for their reactions and recommendations.

## ADMISSION REQUIREMENTS AND PROCEDURES FOR INTERNATIONAL STUDENTS

International applicants are welcomed to Walla Walla University when the conditions stated below are met. In many cases, certified copies of certificates issued by the Department of Education or an approved National Government agency or a university examination board will be needed to verify appropriate completion of the secondary level of education. Additional documentation may be required from specific countries. Minimum requirements for admission include:

1. **A completed application form** (including the international section) with a \$40 (U.S.) application fee.
2. **A completed financial analysis sheet** with a bank statement from the financial sponsor verifying ability to pay expenses. Note: Official government scholarships need to include an official letter from the government issuing the scholarship.
3. **Letter of recommendation** from one person who knows you well (teachers, employers, pastors, etc. No family members, please). A person recommending you may submit an Online Reference at <http://wallawalla.edu/form/enrollment-reference>
4. **Certified copies** of your secondary-level certificate, with English translations if necessary. Certificate(s) with passing marks is/are required from a four, five or

six-year university preparatory school. Additional requirements include passing scores in government examinations where offered, including English, a natural science, mathematics, and two others from: a second language, science, social studies, literature and religious knowledge. If transferring from a university-level program, please request that an official copy of your academic records (a transcript of marks) be sent in a sealed envelope directly from the university registrar to the Marketing and Enrollment Services Office at Walla Walla University. International transcripts will be evaluated in conjunction with published guidelines for each country.

5. **Official copies of your TOEFL/iTEP/IELTS test scores.** Ask the Testing Service to send these scores directly to the Walla Walla University Marketing and Enrollment Services Office.

Prior to acceptance into any program and before an I-20 form is issued to international students, a \$3,000 (U.S.) deposit is necessary (except Canadian and specified U.S. Trust Territory students). See International Students (p. 365) in the Financial section of this bulletin.

**SPECIAL NOTE: INTERNATIONAL STUDENTS MUST HAVE IN THEIR POSSESSION AN I-20 VISA FORM ISSUED TO THEM BY WALLA WALLA UNIVERSITY PRIOR TO LEAVING THEIR HOME COUNTRY AND ENTERING THE UNITED STATES TO STUDY AT WALLA WALLA UNIVERSITY.**

## STUDENT SUCCESS

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### ACADEMIC ADVISEMENT

Academic Advisement is an important part of a student's progress through a chosen program of study at WWU. Academic advisors assist students in their consideration of life goals and in developing an educational plan to meet those goals. Academic advisors provide students with information about career options, academic policy, procedures, resources and programs. Specific attention is given to appropriate placement and satisfactory academic progress. If a student fails to maintain satisfactory academic progress, the academic advisor works with the student to develop a plan to achieve academic success.

All degree seeking undergraduate students are assigned an academic advisor to assist them in making the most of their university experience. Preprofessional students are assigned academic advisors who are familiar with specific professional programs.

### ACADEMIC PROBATION

The probation policy and conditions are intended to enhance the probability of academic success. Students should be aware that many types of financial aid are dependent on academic success or adequate academic progress. Students may become ineligible for financial aid for either poor academic performance (GPA) or for lack of academic progress (not successfully completing enough credits). Student Financial Services may be consulted for detailed information.

**CALCULATION OF GRADE POINT AVERAGE (GPA) FOR PROBATION.** For academic probation consideration, the GPA includes all Walla Walla University courses as well as the default grade of all Walla Walla University courses with a grade of Incomplete. Grades in remedial courses (courses numbered 001-100) or transfer courses do not count in the probation GPA calculation.

**ACADEMIC WARNING.** A student whose Walla Walla University cumulative and previous term GPAs are 2.0 or higher, but whose current term GPA is below 2.0, receives a warning letter from the Associate Vice President for Academic Administration. A copy of the letter is also sent to the student's academic advisor.

**ACADEMIC PROBATION AND DISMISSAL.** Students must show satisfactory academic performance by maintaining a term and cumulative GPA of 2.0 or above. At the end of each term, students' academic performance is reviewed. Students are automatically placed on academic probation if their performance places them in one of the two categories described in the following paragraphs. Probationary status is communicated to them in writing by the Associate Vice President for Academic Administration. A copy of the letter is also provided to each student's academic advisor. After the fourth day of the term, a student's probation status does not change for that term even if a subsequent grade change is submitted or an Incomplete is finished.

Students on academic probation have one term in which to demonstrate satisfactory academic achievement. During that term, they must comply with the conditions listed in the following section, "Conditions of Academic Probation." At the end of the term, each student's performance will again be reviewed.

A student is automatically placed on probation when:

1. The student's cumulative grade point average for courses taken at Walla Walla University, including default grades for Incompletes, is below 2.00.  
The student is placed on probationary status for the ensuing term, at the end of which the student must earn a term GPA of at least 2.3 (C+ average). A student who meets this requirement may continue on academic probation for the following term. When the cumulative GPA reaches 2.0, the student returns to regular status. If neither a 2.3 term GPA nor a 2.0 cumulative GPA is achieved during the probationary term, the student is automatically dismissed from the University. The Associate Vice President for Academic Administration notifies the student of the dismissal and process of potential appeal.
2. The student's term GPA at Walla Walla University, including default grades for Incompletes, is below 2.0 for two consecutive terms, even though the cumulative GPA is above 2.0.  
The student is placed on probationary status for the ensuing term, at the end of which the student must earn a term GPA of at least 2.0. A student who meets this requirement returns to regular status. If a 2.0 term GPA is not achieved during the probationary term, the student is automatically dismissed from the University. The Associate Vice President for Academic Administration notifies the student of the dismissal and process of potential appeal.

A student dismissed for academic reasons may, following at least six months' absence from the University, apply for readmission by contacting the Associate Vice President for Academic Administration. Convincing evidence will be required to demonstrate the student's commitment and potential for academic success.

**CONDITIONS OF ACADEMIC PROBATION.** Academic probation entails the following conditions to assist a student in improving academic performance:

1. The student must meet in person with the Associate Vice President for Academic Administration within the first three days of the term remove the probation hold.
2. The student must complete an Academic Plan for Success form.
3. Students must also meet with the Student Success Coordinator and their mentor to discuss the completed form by the second week of the quarter.
4. Non-freshman students will be required to participate in a special mentoring program. A fee for this service will be charged to the student's account. See the Academic Fees section of the Financial Bulletin.
5. Enrollment is limited to 13 quarter credits. Students are advised to repeat courses with a grade less than C. Students with Incompletes should consider further reducing their academic load.
6. Freshmen and sophomore students who go on academic warning or academic probation who have not previously enrolled in and successfully completed GNRL 102 On Course with a C- or above, will be required to enroll.
7. Courses outside the University, such as correspondence or online classes, are not permitted.
8. Participation in the University Athletics Program or Adventist Colleges Abroad is not permitted.
9. Extracurricular activities which necessitate class absences are not permitted.
10. The student is not permitted to hold office in any student organization or serve as a student missionary or taskforce worker.

Note: A student receiving financial aid must also meet satisfactory progress standards adopted by Student Financial Services. See the Satisfactory Academic Progress Policy in the Financial Bulletin for details.

## COUNSELING AND TESTING CENTER

**COUNSELING SERVICES.** The Counseling and Testing Center (C&TC) provides counseling services for WWU students free of charge. Counseling services are available for students during Fall, Winter, and Spring quarters. Professional counselors are available by appointment for confidential sessions. Counselors can help with a variety of challenges, such as: anxiety, depression, relationship struggles, childhood abuse, substance abuse, stress and time management, loss and grief, and career uncertainty.

Applications for counseling services are available online via the student portal (<https://patient.wallawalla.medicatconnect.com/>). Please visit our resources page to find referral options for the local Walla Walla community during the summer months. We begin processing applications for counseling at the start of Fall quarter.

**TESTING SERVICES.** The Counseling and Testing Center (C&TC) is the official testing center for most standardized tests administered on campus. These tests are given on dates specified in advance by the testing companies, and most require advance registration. Many of these tests require a fee paid by the student directly to the testing company. Registration information is available at the Testing Center. Tests administered at C&TC include:

- Area Concentration Achievement Test ACAT (Art majors)

- American College Testing (ACT) Residual – offered to WWU students only
- American Council on Teaching Foreign Languages (ACTFL)
- College-Level Exam Program (CLEP)
- Correspondence/Distance Learning Tests
- English, Language, and Math Placement tests – offered to WWU students only
- Graduate Record Examination - Subject only (GRE Subject)
- Law School Admission Test (LSAT)
- Major Field Test (MFT)
- Miller Analogies Test (MAT)
- Pearson VUE Exams, including:
  - Education Exams (WEST-B, WEST-E, NES Exams)
  - Fundamentals of Engineering (FE)
  - Graduate Management Admissions Test (GMAT)

FEES AND SCHEDULING. Most services offered are free to students with the exception of a few tests. Questions related to testing fees can be directed to the Counseling and Testing Center at (509) 527-2147 or [testing@wallawalla.edu](mailto:testing@wallawalla.edu).

A therapist will contact students to schedule a counseling appointment after they complete the counseling application. Students may call the Counseling & Testing Center during business hours to schedule testing appointments.

## DISCOVER PROGRAM

Students who have not chosen a major are eligible to participate in the Discover Program. Services include a career fair, informational sessions, and specialized advising in choosing two exploration courses in their top areas of interest. In addition, students will be placed in core general classes that will apply to a broad scope of degree requirements. They may also register for CDEV 210 Career Development, which provides career testing and practice setting goals, job readiness training, informational interviews, and job shadowing.

## MENTOR PROGRAM

All freshmen are required to participate in the Mentoring Program. The program focuses on individualized encouragement and support as students transition to college life. Mentors will deliver a Freshman Experience curriculum that encourages a balanced life of academic, spiritual, and social practices. The student experience will be enriched by their participation in organizations sponsored by the University, community service involvement, and developing their connections with faculty, staff, and other students. Mentors will assist students in setting and achieving academic and career goals by encouraging personal ownership and responsibility, and strengthening their time management and study skills. They will also aid students in identifying the causes and solutions to specific challenges they may face, including effectively using campus resources. A fee is assessed for this program; see the Academic Fees Section of the Financial Bulletin.

## STRATEGIES FOR SUCCESS PROGRAM

The Strategies for Success Program is designed to encourage and support student success by providing educational tools and practices for early academic engagement. Strategies for Success is required for any incoming first-time

freshman that enters with a high school GPA less than 3.0. Students in the program will be enrolled in designated general studies classes, non-college-level math and English classes if appropriate, and GNRL 102 *On Course*; be placed with a specialized academic advisor and mentor, and be assigned as a pre-major in their chosen academic discipline. Students may also be required to join the Strategies for Success Program if their first or second quarter WWU GPA is less than 2.0. Continued participation will be evaluated on a quarterly basis subject to the student's academic and student life progress. If the University has not received a high school transcript by Wednesday of JumpStart week, the student will automatically be placed in the Strategies for Success Program.

**GNRL 102 ON COURSE.** *On Course* provides strategies for Creating Success in College and in Life. Enrollment in *On Course* is required for:

1. All freshmen who enter with a high school GPA less than 3.0.
2. Freshmen and sophomore students who go on academic warning or academic probation and have not previously enrolled in or successfully completed the course with a C- or above.
3. Transfer students with a transfer GPA less than 2.5.
4. Students who fail the 70% completion requirement of the Financial Aid Satisfactory Academic Progress Policy.

## STUDENT DEVELOPMENT CENTER

Located in the Lower Level of Village Hall

Walla Walla University, 204 S. College Ave., College Place, WA 99324

General e-mail and phone number: (509)-527-2313 |

student.development@wallawalla.edu | wallawalla.edu/sdc

The Student Development Center (SDC) houses Career Development Services, Internship Services, Disability Support Services, and Peer Tutoring. The SDC provides free services to current students, helping students to progress academically and personally to achieve their educational goals.

**CAREER DEVELOPMENT SERVICES.** Deciding on and developing a career path are very important parts of one's educational experience. The staff at the Student Development Center are dedicated to providing students with a multitude of experiences and resources that will enable them to make informed career decisions. The staff also provides comprehensive career planning to students and alumni. These services include career advising, career assessments, internship coordination, graduate school personal statement support, job and internship listings, job shadow resources, LinkedIn evaluations, mock interviews, and résumé and cover letter assistance.

**Career Coaching and Testing.** Use of assessments and meeting with a career counselor to look at what you've done so far, and what you might like to do to determine your true interests. Once you've conducted your research, you're encouraged to create a list of short and long-term career goals.

**Career Events.** Various events are hosted and coordinated through Career Services, such as career fairs, career and professional panels, career workshops, graduate school fairs, graduate school visits, and professional etiquette workshops.

**INTERNSHIP SERVICES.** Internship support and job shadowing integrates academic learning within a work environment. Students may receive academic credit for pre-arranged work experience. (See listing under specific

departments/schools for credit and grading applicable to the major.) Internship Services monitors students' progress, while the internship advisors evaluate learning objectives and assign grades.

For more information, contact Career Development Services at: [career@wallawalla.edu](mailto:career@wallawalla.edu); (509) 527-2664; or visit their website at [wallawalla.edu/sdc](http://wallawalla.edu/sdc)

**DISABILITY SUPPORT SERVICES.** The policy of Walla Walla University is to comply with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, regarding students and applicants with disabilities. The University is committed to providing access to programs and services to qualified individuals who have a documented disability. To receive assistance, students must submit formal documentation to the Disability Support Services (DSS) Coordinator and request an appointment to determine appropriate accommodations. Since accommodations are not retroactive, it is in the student's best interest to submit documentation as soon as possible. Documentation guidelines are available through the University website (see below) or by calling to request a copy.

The staff works with students to arrange needed accommodations based on their documentation and individual needs. Examples of accommodations are: exam accommodations, books and other print material in alternate format, equipment and technology access, classroom relocation, note-takers, accessible housing, and other services.

For more information, contact Disability Support Services at: [sue.huett@wallawalla.edu](mailto:sue.huett@wallawalla.edu); (509) 527-2366; or visit their website at [wallawalla.edu/disability-support](http://wallawalla.edu/disability-support)

**PEER TUTORING.** The Student Development Center offers drop-in tutoring free of charge and private tutoring for a minimal fee to all students enrolled at Walla Walla University. Tutoring is offered to students taking classes in the areas of business, mathematics, engineering, languages, science, and writing. Tutoring in additional areas is available upon sufficient demand. The writing center helps students with papers assigned for any class. Learning style assessments are administered by trained professionals upon request.

## UNIVERSITY EXPERIENCE (JumpStart)

All freshmen are required to attend the JumpStart Program (University Experience class), which takes place the week prior to the beginning of Autumn quarter classes. The JumpStart Program focuses on topics and activities that will help students make a successful transition to the university academically, socially, and spiritually. JumpStart includes regular orientation information, financial clearance, course placement, academic advisement, and finalization of the registration process. Students who successfully complete the JumpStart Program receive one elective credit. A fee is assessed for this program; see the Academic Fees Section of the Financial Bulletin.

# ACADEMIC INFORMATION AND POLICIES

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## ACADEMIC POLICIES

Academic policies developed and announced in the course of the school year have the same application as those published in this bulletin. Students wishing any



exception to published policy may petition to the Academic Standards Committee. Forms for this purpose are available at the Academic Records Office and online.

COURSE LOAD

The academic study load at Walla Walla University is computed in quarter hours, one quarter hour normally representing one class meeting per week or three hours of laboratory work per week. Thus, a three-quarter-hour class would meet three times each week. For each quarter hour of credit earned, a student is expected to spend at least two clock hours a week in outside preparation or three hours a week in supervised study or laboratory work.

The normal course load is 16-17 hours per quarter. Sophomores, juniors, and seniors may register for 18 quarter hours if their cumulative WWU grade-point average is 3.00 (B) or better. Undergraduate students on academic probation will carry a reduced course load.

The following minimum study loads will satisfy the parties indicated; however, in order to graduate in four years, the student should take 16 hours per quarter.

Financial Aid	12 quarter hours
Immigration Authorities	12 quarter hours
Social Security	12 quarter hours
Veterans	12 quarter hours

REGISTRATION

The academic year is divided into four academic quarters: Autumn, Winter, Spring, and Summer. Full-year online registration is available to all continuing students who have obtained Junior or Senior status. Continuing Freshmen and Sophomores may register online quarter by quarter. Registration dates will be announced. Registration is official only after all procedures required by the University have been completed and all fees have been paid. Students who do not receive financial clearance by the deadline will have their registration cancelled and will have to re-register on a space-available basis.

Faculty advisors are available to assist students with registration and in planning academic programs. Advisor approval is required for class registration. Advisor signatures are required on Change of Registration forms for undergraduate students. In the event of temporary unavailability of the assigned advisor, the student should first consult the department chair/school dean. If the chair/dean is not available, the forms may be signed by the Director of Academic Advisement. It is the student’s responsibility to inform the assigned advisor of the action.

Students are not permitted to attend courses for which they have not registered. Students will not be permitted to register for two classes which meet concurrently.

REGISTRATION WITHOUT OFFICIAL TRANSCRIPTS. Walla Walla University recognizes that in some instances a student may not be able to provide an official transcript immediately prior to enrolling at the University. At the University’s discretion, some students may be allowed to enroll prior to admission on the basis of work shown on unofficial or incomplete transcripts. Students who have enrolled directly from high school in this fashion will have a maximum of three consecutive quarters to have their official transcripts received by the Marketing and Enrollment Services Office. No further enrollment will be allowed until the transcripts are on file. Transfer students allowed to enroll on this basis

must have their official complete transcript(s) on file by the end of their first quarter in order to continue enrollment.

**LATE REGISTRATION.** Students citing unusual circumstances may register after the designated registration periods; however, they will be charged a late registration fee, and may expect a reduction in course load. Students may register between the 5th and 10th days of the quarter only with permission of the instructors involved.

**CHANGES IN REGISTRATION.** Changes in registration may be made during the first four days of instruction without charge. Course changes after that require advance permission from the instructor and from the student's academic advisor; there is also a fee for each course added or dropped. Courses may not be added after the tenth day of any quarter.

**CONCURRENT REGISTRATION.** Concurrent registration at another accredited college/university may occasionally be advisable because of course unavailability or schedule conflicts. Students who are considering this option should consult their advisor and the registrar to ensure that their total course load is reasonable, that the transfer course will not interfere with their Walla Walla University class schedule, and that the course will satisfy the intended requirement. Transfer course approval requests are available at <https://wallawalla.edu/resources/forms>. It is the student's responsibility to have a transcript sent to Walla Walla University as soon as the course has been completed. Seniors should not enroll for courses at other colleges without prior approval from Academic Standards Committee (see Residency Requirements in this bulletin).

Students in good and regular standing may request to concurrently enroll in a Whitman College class through a reciprocal program in which tuition is paid at Walla Walla University while the student registers at Whitman College. Some restrictions apply; the program is intended for students who wish to take a course that is not available at Walla Walla University. The application process should be initiated through the office of the Associate Vice President for Academic Administration at least three weeks before the beginning of the term in which concurrent enrollment is desired.

**SENIOR REGISTRATION FOR GRADUATE COURSES.** Seniors who wish to take graduate (500-level) courses must submit a petition, a copy of a degree audit or a copy of their approved senior outline, and a current transcript to the Graduate Standards Committee for evaluation. Approval to register is based upon the student's background for the course in question and a minimum of 2.75 cumulative GPA. Academic Standards Committee must approve the petition to have the course apply to the undergraduate program. Courses so taken will be marked on the transcript as applying to the undergraduate degree. Seniors wishing to take credit to be applied toward a future graduate program should consult the Graduate Bulletin.

**ADMISSION TO UPPER-DIVISION STATUS.** A student may register for upper-division courses provided that he/she has completed 45 quarter hours of university course work, the general studies mathematics requirement, ENGL 121 and 122 or ENGL 141 and 142, and has completed or is concurrently enrolled in either ENGL 223 or HONR 243.

**AUDIT.** Students may audit classes provided they (1) register in the usual manner; (2) receive prior approval of the instructor, because certain classes and labs may not be audited; (3) pay any special fees, as appropriate; and (4) pay one-half tuition. Students auditing courses are not required to do class assignments or take tests. They receive no grades and no academic credit. The deadline for changing to or from audit status is the tenth day of the quarter. Students may not

take challenge or waiver examinations for courses they have audited and may not add the class for credit after the 10th day of the quarter. Students with a Walla Walla University cumulative grade-point average of at least 3.00 and a course load of at least 13-16 hours (excluding audit courses) pay a special fee if their total credits exceed 16 hours. See the Academic Fees section of the Financial Bulletin.

**WITHDRAWALS.** Students withdrawing from all classes must submit an official University Withdrawal Form to the Academic Records Office. Students withdrawing from individual courses must submit a Change of Registration voucher to the Academic Records Office signed by the instructor involved and the student's advisor. The final date for dropping a course is listed in the academic calendar.

An instructor or department chair/school dean may drop a student from a course during the 100% refund period if the student has not satisfied the prerequisites for the course and the student is informed.

**STUDENT DISMISSAL DUE TO POOR ACADEMIC ENGAGEMENT.** The university recognizes the important relationship between student engagement and academic success. Any class session missed reduces the opportunity for learning and adversely affects student achievement. Regular class attendance is expected of all students. Attendance requirements can vary by course or academic program, and, in some cases such as clinical labs, student teaching, etc., may also affect a student's enrollment status in a given academic program.

Any student whose class attendance or completion of academic responsibilities (assignments, quizzes, etc.) show a pattern of little or no engagement may be dropped from all courses and administratively dismissed from the university. Such decisions are made by the Academic Standards Committee in the case of undergraduate students or by the Graduate Standards Committee in the case of graduate students. The Chair of the Standards Committee will notify the student by email at least one week before any meeting for consideration of their dismissal. The student may submit a written statement for consideration by the Standards Committee during the meeting. The Standards Committee will consider the relevant information during a closed meeting and determine whether a dismissal or other consequence is warranted.

The student will be promptly notified of the Standards Committee decision by email. A dismissed student may appeal to enroll for a future term by submitting an Appeal for Re-Admission along with supporting evidence to the Standards Committee.

## **TRANSFER POLICY AND PROCEDURE**

### **Admissions Policies and Procedures**

College-level transcripts for courses taken prior to the student's first quarter at the university must be submitted to the Office of Marketing and Enrollment Services as part of the admission process. Walla Walla University (WWU) requires official transcript(s) from all post-secondary institutions attended, even if credit may not be transferable.

Applicants who have attended North American regionally accredited institutions of higher education and who have official transcripts showing a minimum grade-point average of 2.00 on all course work may be admitted at a level determined by the number of credits transferred.

WWU recognizes that in some instances a student may not be able to provide an official transcript immediately prior to enrolling at the university. At the

university's discretion, some students may be allowed to enroll prior to admission on the basis of work shown on unofficial or incomplete transcripts. Transfer students allowed to enroll on this basis must have their official complete transcript(s) on file by the end of their first quarter in order to continue enrollment.

### **Evaluation of Transcript**

A preliminary evaluation of transfer credit can be made using an unofficial transcript once a WWU ID number is established. However, official transfer credit will be granted only upon receipt of an official transcript from each institution. WWU does not have a limit on the number of credits that can be transferred in; however, every student must meet all degree and residency requirements.

Transfer transcripts are evaluated on a face-value, course-by-course basis by the Office of the Registrar. Transfer credit for courses taken at institutions operating on a semester system are computed to equivalent quarter credits. (To convert semester to quarter credits, multiply by 1.5. For example, a student who earns 30 credits at an institution on a semester calendar would have earned 45 quarter credits at WWU.) Acceptance of any credit does not imply that major or university requirements have been satisfied. Therefore, in order to graduate, students may be required to complete more than the minimum number of credits necessary for a particular degree program.

### **Foreign Transcript Evaluation**

Transcripts received from foreign institutions will be evaluated on an individual basis. In most instances, the student will be required to request an official evaluation from a WWU approved foreign credentialing education service. Accepted courses will be issued a pass/fail grade and will not be calculated into the cumulative GPA for graduation.

### **Nursing Credits**

WWU does not directly transfer in nursing courses from another school of nursing but uses a process of validation of previous nursing education to give advanced placement to RN's with an associate degree in nursing or a diploma in nursing.

### **Military Credits**

Two quarter credits of the general studies physical education requirement will be waived for students eligible for VA benefits. Students who provide an official accredited military transcript listing Basic Training may be awarded a maximum of 6 quarter credits of physical education. The remainder of the transcript will be evaluated as other accredited transcripts. No credit will be awarded for specialty training or vocational programs.

### **Science Credits**

Transfer science courses must be from the major's courses at the granting institution to be accepted toward the major or minor in that science discipline at WWU. Transfer science courses may, however, be accepted as cognates or general studies courses.

### **Advanced Placement (AP) Program**

Regular university credit may be awarded by successful completion of an Advanced Placement (AP) examination. These tests are graded on a scale of 1 to 5. Credit will be established upon receipt of an official College Board transcript

and in accordance to the WWU articulation policy. Credit accepted will be on a pass/fail basis.

### **College-Level Examination Program (CLEP)**

WWU grants credit for selected undergraduate college CLEP courses. These exams may not be repeated and must be taken prior to the student's completion of a total of 45 quarter hours of university credit. Credit accepted will be on a pass/fail basis.

### **International Baccalaureate (IB) Program**

Students who engaged in college-level study in high school through the International Baccalaureate (IB) Program can obtain credit toward a WWU degree on the basis of their performance on the higher level IB exam. Students should submit an official IB transcript to the Academic Records Office for evaluation. All IB evaluations will be in collaboration with the appropriate WWU department. Credit accepted will be on a pass/fail basis.

### **Courses Receiving No Credit**

The university reserves the right to deny credit for courses that are not compatible with those offered in its baccalaureate degree programs. Some general categories of courses that never receive transfer credit include the following:

- courses below college level (usually numbered below 100)
  - remedial English (e.g., reading, vocabulary development, grammar, speed reading, or any courses that are preparatory to an institution's first freshman composition course)
  - mathematics courses considered below college level, including basic math and beginning and intermediate algebra
- courses providing instruction in English as a second language (100-level or above)
- more than one iteration of a course
- courses with duplicate subject content
- coursework earned at an institution that did not hold at least candidacy status with its regional accrediting association when the coursework was taken
- courses offered for continuing education units
- non-academic or vocational-technical courses
- work or life experience

### **Alternative Credit Options**

WWU recognizes that students who have independently achieved college-level proficiency on the basis of work experience and study may receive credit for what they already know by challenging, validating, or waiving comparable classes offered by the university. All options require a formal approval process and a fee will be charged as listed in the WWU Financial Bulletin. For examination request forms, contact the WWU Academic Records Office.

- **Challenge Exams**

A challenge examination is a university-prepared or standardized examination which, if successfully completed, will yield regular university credit. The student must take the examination before enrolling for further study in the field of the examination. The challenge examination may not be repeated and must be taken prior to the final quarter of residence. Grades will be

issues in the same manner as the university course. (Certain university classes may not be challenged.)

- **Validation Exams**

Students who have transcripts from non-accredited colleges and/or transcripts showing nontransferable college courses may request to take validation examinations in courses which are comparable to those offered by WWU. Credit will be awarded on a pass/fail basis.

- **ASE Exams**

Based on successful completion of a standardized examination, students with current National Institute of Automotive Service Excellence (ASE) certification will be granted automotive credit as listed in the WWU bulletin. Credit will be awarded on a pass/fail basis.

### **Transfer Credit by Examination**

Credit earned by examination at other colleges or universities may be transferred provided such credit meets the guidelines used by WWU for credit by examination.

### **WWU Transcript**

The online evaluation is not an official transcript. The official WWU transcript – which is sent to other institutions, employers, etc. – does not include the transfer GPA or a detailed listing of the transfer credit that WWU awarded; it merely lists the other colleges the student has attended, and the total number of transfer credit awarded by each college. Transfer grades are not included in the WWU GPA.

### **Cumulative GPA**

Candidates for the baccalaureate degree with the appropriate GPA, both overall and for credit earned at WWU, will be awarded the degree with appropriate distinctions as outlined in the university bulletin.

### **Residency and Degree Requirements**

The university's policies governing transfer student degree completion stipulates the following:

1. At least 40 of the last 45 credits before degree completion must be WWU credits.
2. A minimum of 25% of the requirements in each major and minor must be WWU credit.
3. At least nine upper-division credits in the major and three upper-division credits in the minor be completed at WWU.
4. At least 60 credits in courses at the 300 or 400-level be completed for overall degree requirements.
5. A minimum of 96 credits be from a 4-year institution.
6. All transfer transcripts be on file in the Academic Records Office prior to the end of the final quarter in residence to avoid delay in graduation.
7. Student meets all degree requirements.

### **Pre-approval for Transfer Credit**

Before taking courses out-of-residence it is advisable to complete a Transfer Course Approval Request form to ensure proposed credits satisfy requirements needed. Forms are available in the Academic Records Office or at [https://www.wallawalla.edu/fileadmin/user\\_upload/Resources/Forms/Undergrad/Transfer\\_Course\\_Approval\\_Request.pdf](https://www.wallawalla.edu/fileadmin/user_upload/Resources/Forms/Undergrad/Transfer_Course_Approval_Request.pdf)

## **Appeal of Transfer Credit Evaluation**

If a student questions the evaluation of their transfer credits they may appeal to the Registrar. The student may be requested to submit a syllabus of the course(s) in question and/or any other documents that may support the appeal. Forms are available in the Academic Records Office or at <https://www.wallawalla.edu/resources/forms/student-forms/>

If resolution is not met in consultation with the Registrar, the student may petition Academic Standards Committee for a review of their request.

## **DUAL ENROLLMENT POLICIES**

### **NPUC ACADEMY DUAL CREDIT PROGRAM**

#### **I. Introduction**

High school students and their families should thoughtfully consider the options available to receive credit toward a university degree including Advanced Placement (AP), International Baccalaureate, and Dual Credit programs. Well-designed dual credit programs can improve high school achievement, increase university graduation rates, and potentially reduce the cost of a higher education degree. However, in some cases AP courses may be more rigorous than a dual credit course. Additionally, dual credit courses may extend over many more weeks than a comparable university course which may convey a false sense of the pace of university courses.

Dual credit courses go on a student's permanent university record, so it is important that the student is ready for the demands of a university class. Furthermore, if a student fails a dual credit course, it could mean the student will not graduate from high school on time. Parents and students should carefully consider the value and risks of any dual credit course before enrolling.

Walla Walla University provides a dual credit program through which qualified North Pacific Union Conference (NPUC) juniors and seniors can enroll in university courses on their own academy campus and simultaneously receive academic credit on their academy transcript and a Walla Walla University (WWU) transcript.

#### **II. Academy**

An academy may propose to offer a dual credit course following the qualifications, expectations, and finances as shown below. Proposals will be evaluated based on the following criteria:

##### **a. Qualifications**

To participate in offering a dual credit program, an academy must

1. Be accredited through the NPUC Department of Education
2. Have an overall environment conducive to a successful university-level academic experience
3. Have an administration that recognizes the demands of instructing a university course, provides adequate time for instruction periods (ten hours of class for each credit), and works to minimize schedule changes
4. Provide adequate facilities, such as a classroom, library, or laboratory, as needed
5. Make available appropriate materials and equipment for the course

6. Ensure the university course does not interfere with the overall curriculum nor prevent a student from taking high school courses

**b. Expectations**

To propose offering dual credit courses, academy administration must

1. Submit a Dual Credit Request Form for each course the academy wishes to offer to the WWU Associate Vice President for Academic Administration
2. Propose only 100 and 200 level general studies (general education) courses listed in the current WWU bulletin
3. Require instructors submit proof of a Master's or higher degree or equivalent in the academic discipline of the course they propose to instruct as WWU accreditation standards require
4. Submit requests by December 1 for courses to be offered the following school year

To offer dual credit courses once a proposal is accepted, academy administration must

1. Ensure students have junior or senior academic standing and a minimum cumulative GPA of 3.0
2. Verify students are enrolled in no more than two dual credit courses per term
3. Submit dual credit registration forms to the WWU Academic Records office within one week of the start of each course. First semester courses will be registered as fall quarter courses at WWU; second semester courses will be registered as spring quarter courses at WWU.
4. Monitor the work load of the instructor to accommodate the expectations of a university course
5. Evaluate instructor and course effectiveness using the WWU student evaluations system
6. Arrange for the dual credit instructor to visit WWU at least once annually while the course is occurring on the university campus
7. Collect the course tuition from each student
8. Submit to WWU quarterly payment for tuition charges

## **II. Instructor**

Instructors play an important role in supporting student success as well as ensuring the level of academic rigor and classroom environment are appropriate for a university course. A dual credit instructor's professionalism and individuality are to be respected; he/she will counsel with the university department chair, to the same extent that on-campus instructors do, regarding course outline, text or materials, and evaluation of students. He/she will be expected to meet departmental and general administrative policies (add and drop deadlines, grade reporting, etc., as found in the WWU Bulletin), and to maintain the same quality of instruction as his/her university colleagues.

**a. Qualifications**

To participate in offering a dual credit course, an academy instructor must



1. Have a Master's or higher degree or equivalent in the academic discipline of the course which he/she instructs as WWU accreditation standards require
2. Be committed to the task of teaching a university-level course
3. Have a work load that accommodates the time commitment of a university course

**b. Expectations**

To teach a dual credit course, an academy instructor must

1. Teach only one dual credit course per term
2. Complete a brief online orientation for dual credit instructors
3. Construct a course syllabus using the university syllabus guidelines, including subjects covered, time devoted to each subject, length of periods, days classes meet, text(s), and bibliography, where appropriate, and submit the syllabus to
  - a. the supervising WWU academic department chair for approval, and once approved,
  - b. submit the syllabus to the WWU distance learning committee at least one month before the beginning of the course for consideration and approval
4. Use WWU course management software for recording scores and making materials accessible
5. Keep course materials and scores updated in course management software
6. Follow the US Department of Education requirement of having a minimum of 10 hours of instruction per credit hour and a total of 30 hours per credit of student effort (including class attendance)
7. Consult with the assigned university course advisor at least twice during the course
8. Send a copy of the proposed final exam, project, or paper for review by the university course advisor at least **two weeks** before the due date
9. Submit final course grades to the WWU Academic Records Office within one week of the end of the term

### **III. Student**

**a. Qualifications**

To participate in the dual credit program for academy juniors or seniors, a student must

1. Be enrolled at an NPUC academy and have junior or senior status
2. Have a cumulative academy GPA of 3.0 or higher
3. Have successfully completed Algebra I and Geometry
4. Obtain permission from the academy instructor and principal
5. Complete placement examinations for some WWU courses (such as College Writing or Math) and receive an acceptable placement score in addition to satisfying the general criteria above

**b. Expectations**

To participate in the dual credit program for academy juniors or seniors, a qualified student

1. May enroll in a maximum of sixteen WWU credits per year
2. Must meet WWU registration deadlines that determine the type of credit the student wishes to receive (university, academy, or dual)
3. Must attend all class appointments and complete assignments on time as expected of “regular” university students
4. Should plan for two hours of homework/study for each hour of class
5. Will want to maintain good study habits and time management skills essential for success in college classes
6. Should seek assistance from his/her instructor when encountering difficulties
7. Must achieve a grade of at least a “C” in each course to maintain regular academic standing at WWU as a low GPA could result in academic dismissal from the university
8. Must contact the WWU Academic Records Office before the withdrawal deadline if he/she chooses to withdraw from a course since a student is never automatically dropped from a course and withdrawal could impact academy graduation
9. Should check his/her course scores and submit assignments as requested by the instructor through WWU’s course management system

**c. Finances**

To participate in the dual credit program for academy juniors or seniors, a qualified student

1. Pays tuition of \$250 per class regardless of the number of course credits in a class or if the student withdraws from the class
2. Must understand that once a course has started, no refunds are given
3. Must purchase his/her own textbooks and supplies

## **IV. University**

**a. Qualifying Conditions**

To begin the process and activate course proposals for dual credit, the Associate Vice President for Academic Administration will

1. Review the request for dual credit courses received from an academy with the chair of the appropriate WWU academic department
2. Notify the principal of the academy of acceptance or rejection of the proposed course in a timely manner
3. Grant approval to offer a given course on a one-year provisional basis
4. Review and grant subsequent approval of a course, subject to annual evaluation by the chair of the appropriate academic department, on a two-year basis with the understanding that any change in the conditions originally in the application may void the two-year approval and may necessitate new application and a return to one-year provisional status

**b. Expectations**

To support offering a quality dual credit program, WWU must

1. Work with the academy to ensure a quality university experience for instructors and students
2. Provide a dual credit website that includes the following:

- a. Information on dual credit policies, qualifications, expectations
  - b. Instructions for academy students, academy administration, academy instructors
  - c. Application and registration forms
  - d. University syllabus guidelines
  - e. The most recent university syllabus for any approved dual credit course
  - f. Contact information for course support and technical assistance
3. Provide online training for dual credit instructors
4. Evaluate the proposed course syllabus through the WWU distance learning committee
5. Assign a WWU faculty member as a course advisor
6. Provide technical assistance with course management software
7. Provide technical assistance with the WWU course evaluations system
8. Provide access and instructions for online grade entry
9. Provide feedback to instructors through the WWU student evaluations system
10. Arrange for a representative from the appropriate university department at WWU expense to visit each dual credit class at least once during the provisional year. Such contacts are vital for
  - a. Encouraging interrelationships with departmental colleagues
  - b. Reinforcing departmental academic criteria
  - c. Generally enriching the instructor and thereby his/her course
11. Do a site visit of course location on a biannual basis, if course is ongoing
12. Record student grades on a WWU transcript
13. Send an invoice to the academy at the end of each term for the tuition fee for all students

## HIGH SCHOOL ENRICHMENT PROGRAM

The high school enrichment program provides qualified high school seniors the opportunity to enroll in university courses on a space available basis. Dual credit may be earned for both the high school diploma (at the discretion of the high school) and a university degree. Courses will appear on a university transcript.

### Eligibility Requirements

Must have a cumulative high school GPA of 3.25 or above

- Must be officially classified as a senior as determined by the high school
- Must be recommended by the high school principal or vice-principal to participate in the program
- Must not, at the beginning of the term of WWU enrollment, have earned a high school diploma or GED

### Enrollment Conditions

- Cost for tuition is \$75 per credit hour (quarter credit); space may not be available in all classes
- Students may enroll for a maximum of one course (up to 4 credits) per term
- Students must complete the High School Enrichment (Walla Walla Valley Secondary Student) Enrollment Form available online
- Students must pay the registration fee at the time the form is turned in

**TEXTBOOKS, SUPPLIES, AND COURSE FEES.** Students purchase their own textbooks and supplies at the University Shop or online before the first day of classes. Books can cost \$50 - \$200 per class. Some courses require additional fees for supplies.

**ID CARDS.** Students will be issued a WWU ID card which can be used at the library, gymnasium, and WWU events that are free to WWU students. The card cannot be used for charging at the U-Shop, Express, cafeteria, campus clubs, etc.

**STUDENT EXPECTATIONS.** High school students are considered “regular” university students and are expected to attend all class appointments and complete assignments and papers on time. Generally, faculty do not allow students to make up missed assignments or exams. Classes typically require 2-3 hours of homework/study for each hour in class. Good study skills and time management are essential. Students encountering difficulties are encouraged to seek assistance from their instructor and to ask about other resources.

**WITHDRAWING OR DROPPING A CLASS.** Standard deadlines and policies apply. Change-of-registration deadlines are listed in the university calendar. No refunds are given for this program after the 4<sup>th</sup> day of classes. A student who stops attending is not automatically dropped from a course. To withdraw, a student must complete a Change of Registration form ([wallawalla.edu/fileadmin/user\\_upload/forms/ChangeofRegistrationForm.pdf](http://wallawalla.edu/fileadmin/user_upload/forms/ChangeofRegistrationForm.pdf)), obtain the signature of the instructor and the high school principal or registrar (as the academic advisor), and turn in the form to the WWU Academic Records Office. Withdrawing from a class taken for dual credit could impact high school graduation.

**CONSIDERATIONS.** It is important to carefully consider the decision to enroll in a university course. Students will have a permanent university transcript, which could enhance or reduce acceptance to a specific university.

Walla Walla University is founded on Christian teachings and values as understood and appreciated by the Seventh-day Adventist Church. In a university experience, students may be exposed to alternative views and materials that are appropriate for a university setting.

## OTHER ACADEMIC POLICIES

**CHANGE OF MAJOR/MINOR AND ADVISOR.** Students who wish to declare or change a major/minor are required to complete a “Change of Major/Advisor” form in the Academic Advisement Office. If the declaration of major requires the selection of a new advisor, the student is required to consult with the Director of Academic Advisement for a new advisor assignment. Students are assigned a secondary advisor for the chosen minor, and the student is expected to consult

with the advisor to insure appropriate course selection. Students who are pursuing secondary education certification must consult with the certification officer in the School of Education and Psychology.

**CLASS ATTENDANCE.** Students are responsible for punctual and regular attendance at all classes for which they are registered. Missing instruction for any reason may jeopardize the course grade.

**FINAL EXAMINATIONS.** All students are expected to take final examinations as scheduled. Requests for exceptions are to be submitted to the Associate Vice President for Academic Administration three weeks prior to the close of the quarter. A fee is assessed for each out-of-schedule examination; see the Academic Fees section of the Financial Bulletin.

**TRANSCRIPTS.** Information on ordering official transcripts is available at [wallawalla.edu/transcripts](http://wallawalla.edu/transcripts).

## CLASSIFICATION OF STUDENTS

**FRESHMEN.** Students who have met the University's entrance requirements and have completed less than 45 quarter hours are classified as freshmen.

**SOPHOMORES.** Students who have completed a minimum of 45 quarter hours with a grade-point average of at least 2.00 are classified as sophomores.

**JUNIORS.** Students who have completed a minimum of 90 quarter hours with a grade-point average of at least 2.00 are classified as juniors.

**SENIORS.** Students who have completed a minimum of 136 quarter hours with a grade-point average of at least 2.00 are classified as seniors. Seniors who can complete all degree requirements during the current school year are eligible for class membership.

**POSTGRADUATE STUDENTS.** Students who have completed a baccalaureate degree and are registered for work which does not ordinarily apply toward an advanced degree are classified as postgraduates.

**GRADUATE STUDENTS.** Students who have been accepted into one of the graduate programs are classified as graduate students.

**NONMATRICULATED STUDENTS.** Individuals ineligible for regular admission or who do not intend to matriculate in an academic program at Walla Walla University are considered nonmatriculated. (See Admission to the University: Nonmatriculated Admission)

**DUAL CREDIT STUDENTS.** Students who are currently enrolled as a junior or senior in secondary school, have a high school GPA of 3.0 or higher, have completed Algebra I and Geometry with a C or higher, and who have permission from their high school instructor or principal, may register for selected Walla Walla University courses. In some cases, students must also successfully pass placement examinations. Special Dual credit students are not eligible for financial aid. Application needs to be made through the WWU Academic Records office. Please see Dual Enrollment Policies in the Academic Information and Policies section of this bulletin for more details.

## ACADEMIC INTEGRITY POLICY

An integral part of the mission of Walla Walla University is to prepare its students to be responsible individuals with Christian values. The University expects all members of its community to have integrity, including a steadfast adherence to honesty. Faculty have a responsibility to foster integrity by example and instruction. Students have a responsibility to learn, respect, and practice integrity.

All acts of dishonesty are unacceptable, including cheating, plagiarism, forgery, misrepresentation, falsification, prohibited collaboration, and prohibited use of files. Departments or schools may have specific criteria for behavior and skills suitable to their disciplines which will be communicated to students, typically in course syllabi.

Any violation of the academic integrity policy will result in disciplinary action. Teachers and administrators will follow approved guidelines which are available upon request in the office of the Associate Vice President for Academic Administration or online at: <https://www.wallawalla.edu/academic-integrity>.

## GRADING SYSTEM

The grade-point average is computed by totaling the grade points of all courses taken at Walla Walla University and dividing by the total quarter hours for which grades are received. Only the best grade of a repeated course will be calculated in the grade-point average. Default grades of Incompletes are included in the grade point average calculation. The AU, IP, NC, S, W, X, and Z are disregarded in computing the grade-point average. Once a course grade has been recorded, students may not submit additional coursework.

A report of grades is available on the WWU website for students at the end of each quarter. Classes taken for 0 credit may only be graded S/NC.

**The following grades are used:**

A	4.0	C+	2.3	D	1.0
A-	3.7	C	2.0	D-	0.7
B+	3.3	C-	1.7	F	0.0
B	3.0	D+	1.3	S/NC	0.0
B-	2.7				

**In place of grades, the following symbols are used:**

### **I Incomplete**

An Incomplete "I" is a temporary grade which may be given at the instructor's discretion to a student when illness, necessary absence, or other reasons beyond the control of the student prevents completion of course requirements by the end of the academic term.

**Incomplete grades may be given only in the following circumstances:**

- The student's work to date is passing;
- Attendance has been satisfactory through at least 50% of the term;
- A documented illness or injury, death in the family, or other extenuating circumstance legitimately prevents completion of required work by the due date;

- Required work will be completed and submitted to the instructor three weeks before the close of the following term;
- The incomplete is not given as a substitute for a failing grade;
- The incomplete is not based solely on a student's failure to complete work or as a means of raising his or her grade by doing additional work after the grade report time;
- The student initiates the request for an incomplete grade before the end of the academic term.

Appropriate grades must be assigned in other circumstances. An X grade may be recorded for students who cease attending class within the first 50% of the course at the instructor's discretion.

**The following procedures for incomplete grades apply:**

- Students who receive an incomplete grade in a course need not reregister for the course in order to remove the "I."
- An Incomplete is not to be assigned where the normal practice requires extension of course requirements beyond the close of a term, e.g., thesis or project-type courses.
- Faculty must enter a default grade which will appear on the transcript should the expiration deadline lapse without further action on the part of the student.
- A default grade should reflect the final grade status of the student without considering any additional work.
- The value of the default grade, entered with the incomplete, will be calculated into the student GPA and considered for purposes of determining academic standing, federal financial aid eligibility, athletic eligibility, or other purposes. The GPA will be recalculated only when the final grade is recorded.
- The course work may be completed while the student is not enrolled unless the student has been dismissed from the university.
- Only in extenuating circumstances will extensions be granted beyond seven weeks. Forms for extension requests can be found on the WWU website. Extension requests must be approved by the Associate Vice President of Academic Administration. Forms are available online at [www.wallawalla.edu/fileadmin/user\\_upload/Academic\\_Administration/Forms/Incomplete\\_Extension\\_Request\\_UG.pdf](http://www.wallawalla.edu/fileadmin/user_upload/Academic_Administration/Forms/Incomplete_Extension_Request_UG.pdf)
- Incomplete grades may be replaced with final letter grades prior to the expiration deadline by the faculty of record through myWWU.
- Graduating students must complete all outstanding incompletes six weeks prior to graduation.
- Instructor may set a deadline earlier than seven weeks of the successive term if desired.

**I\* Standing Incomplete**

Final grade for coursework not completed within appropriate timeframe.

**IP In Progress**

IP grading is a temporary grade that may be assigned if a student has completed a minimum of 50% of the required coursework. IP grades may be assigned to preapproved courses such as Internship, Research, Thesis, Seminar, or other courses that extend beyond regular grading periods. If a final grade is not submitted within one-year of the time of registration for the

course, the IP will automatically become an IP\* (standing IP). Requests for time extension beyond the one-year deadline must be submitted to the Associate Vice President for Academic Administration prior to the end of the one-year deadline. With appropriate approval an IP grade can be extended for a maximum of two years from the original registration after which the student must reregister for the course.

**IP\* Standing In Progress**

Final grade for coursework not completed within appropriate timeframe.

**S/NC Satisfactory/No Credit**

Indicates that credit earned was satisfactory (C or better) or that the credit was not earned because performance did not meet the minimum standards for a satisfactory grade. Some professional schools calculate the NC mark as an F grade when computing the grade-point average.

**W Official Withdrawal**

Courses dropped during the first two weeks of the term will not appear on the student's record. Courses dropped thereafter will appear on the permanent record with a W.

**X Unofficial Withdrawal**

Indicates that the student discontinued class attendance prior to the fifth week, mid-term, but failed to withdraw officially.

**Z Administrative Withdrawal**

**AU Audit**

**GRADE ERRORS AND CORRECTIONS.** Grades will be processed and posted online for viewing at the close of each quarter. Upon viewing grades via the secured website, the student should carefully check the accuracy of the courses recorded, quarter hours, and grades. Grades may be changed only if an error has been made in calculating or recording the grade. Students will have until the last day to drop classes during the next regular quarter to report any discrepancies to the Academic Records office.

## ACHIEVEMENT RECOGNITION

**DEAN'S LIST.** The Associate Vice President for Academic Administration maintains a list of undergraduate students who have earned a minimum of 15 hours per quarter (excluding S credits, IP, and incompletes) and have achieved a grade-point average of 3.50 or better. Students who have earned a GPA above 3.75 appear on the Dean's List of Distinguished Students.

**GRADUATION WITH HONORS.** Candidates for the baccalaureate degree with the appropriate GPA, both overall and for credits earned at Walla Walla University, will be awarded the degree with the following honors distinction:

3.50 - 3.74	cum laude (with distinction)
3.75 - 3.89	magna cum laude (with great distinction)
3.90 - 4.00	summa cum laude (with highest distinction)

## CREDIT BY EXAMINATION

Walla Walla University recognizes that students who have independently achieved college-level proficiency on the basis of work experience and study may receive credit



for what they already know by challenging, validating, or waiving comparable classes offered by the University. (Certain university classes may not be challenged.)

**APPLICATION FORMS.** A current student wishing to obtain credit by examination must apply. Permission from the chair of the department in which the course is offered and permission of the course instructor are required. Application forms for challenge, validation, and/or waiver examinations may be obtained from the Academic Records Office. A student must have approval for an exam prior to taking an exam. Fees for these examinations are listed under the heading Examination Fees in the Academic Fees section of the Financial Bulletin.

**RESTRICTIONS.** The following restrictions apply to all credit earned by examination:

1. A student must have an approved examination application on file in the Academic Records Office before credit by examination can be recorded on the permanent record.
2. A student must be currently enrolled before credit by examination can be recorded on the permanent record.
3. Credit by examination may be earned only if a student has not already earned credit in a similar course, or taken advanced courses.
4. Grades are issued as on normal test scores, and all grades are recorded on the permanent record of the student.
5. Examinations may not be repeated.
6. Repeat course work and F grades are not open to credit by examination.
7. Students may not take challenge or waiver examinations on courses they have audited.
8. Examinations must be taken prior to the last 3 weeks of any quarter.
9. CLEP examinations must be taken prior to the student's completion of a total of 45 quarter hours of university credit.

**CHALLENGE EXAMINATIONS.** A challenge examination is a university-prepared or a standardized examination which, if successfully completed, will yield regular university credit. The student must take the examination before enrolling for further study in the field of the examination. The challenge examination may not be repeated and must be taken prior to the final quarter of residence. Labs may be challenged by permission of school/department.

**ADVANCED PLACEMENT EXAMINATION (CEEB).** Regular university credit may be established by successful completion of an Advanced Placement (AP) examination. These tests are graded on a scale of 1 to 5.

### **Biology 141, 142, 143 General Biology**

Students obtaining a 3 or higher on the Advancement Placement Biology examination will be awarded 12 quarter hours for BIOL 141, BIOL 142, BIOL 143. AP credit for Biology may not be accepted by some professional programs.

### **Chemistry 141, 142, 143, 144, 145, 146 General Chemistry**

Students receiving a score of 4 on the AP Chemistry examination will be granted credit for 8 quarter hours of CHEM 141, CHEM 142, CHEM 144, and CHEM 145. Students receiving a score of 5 on the AP Chemistry examination will be granted credit for 12 quarter hours of CHEM 141-146. Credit does not cover Introductory Chemistry and may not be accepted by

some preprofessional programs. Credit will meet the General Studies laboratory science requirement.

### **Computer Science 141 Fundamentals of Programming I and 142 Fundamentals of Programming II**

Students obtaining a 3 or higher on part A of the Advanced Placement Examination will be awarded 4 quarter hours for CPTR 141. Students obtaining a 3 or higher on parts A and B will be awarded 8 quarter hours for CPTR 141 and CPTR 142.

### **English 121, College Writing I**

Students obtaining a minimum of 4 on the Advanced Placement Language and Composition examination or the Advanced Placement Literature and Composition examination will be awarded 3 quarter hours as a substitute for ENGL 121. All students must take ENGL 122 and ENGL 223, or ENGL 142 and HONR 223.

### **History 221, 222 History of the United States**

Students obtaining a 4 or 5 on the Advanced Placement Examination will receive 8 quarter hours, which will fulfill two quarters of the History requirement.

### **Mathematics 181 Calculus I**

Students obtaining a score 3 or 4 on the AB test will receive 4 quarter hours for MATH 181.

### **Mathematics 181, 281 Calculus I, II**

Students obtaining a score of 5 on the AB test or a score of 3 or 4 on the BC test will receive 8 quarter hours for MATH 181 and MATH 281.

### **Mathematics 181, 281, 282 Calculus I, II, III**

Students obtaining a score of 5 on the BC test will receive 12 quarter hours for MATH 181, MATH 281, and MATH 282.

### **Modern Language 101, 102, 103 (Introduction and elementary level)**

Students obtaining a 3 on the Advanced Placement Language examination will be awarded 4 credit hours (101). Students obtaining a 4 on the examination will be awarded 8 credit hours (101, 102). Students obtaining a 5 on the examination will be awarded 12 credit hours (101, 102, 103).

COLLEGE-LEVEL EXAMINATION PROGRAM (CLEP). Walla Walla University grants credit for selected undergraduate college courses. For dates and specific information candidates should consult Counseling, Testing and Wellness (phone: (509) 527-2147) who administers these computer-based tests by appointment. These tests may not be repeated and must be taken prior to the student's completion of a total of 45 quarter hours of university credit.

A number of subject-matter examinations are offered by CLEP. Students obtaining the scales scores established by the following departments will receive credit toward that basic requirement. Students wishing credit in courses other than those listed below should consult the appropriate department chair.

### **Accounting 201 Principles of Accounting**

Students who obtain a scaled score of 50 on the Financial Accounting test will receive 4 quarter hours for ACCT 201.

### **Biology 141, 142, 143 General Biology**

Students obtaining a scaled score of 54 in the Biology examination will receive 12 quarter hours, which will fulfill the basic science requirement. CLEP credit does

not count toward a biology major and is not accepted by most professional schools (dentistry, medicine, etc.)

### **English 121 College Writing**

Students who achieve a score of 50 on the College Composition with Essay Examination will receive credit for ENGL 121. All students must take ENGL 122, or ENGL 142, followed by ENGL 223 or HONR 243.

### **French Examinations**

Students obtaining a scaled score of 50-54 will receive 4 quarter hours in level 101. Students obtaining a scaled score of 55-56 will receive 8 quarter hours in levels 101 and 102. Students obtaining a scaled score of 61 and above will receive 12 quarter hours in levels 101, 102 and 103.

### **History 221, 222 History of the United States**

Students who earn a scaled score of 60 in either or both of the American History subject-matter examinations will receive 4 or 8 quarter hours toward fulfillment of the basic history requirement. The CLEP subject-matter test covering early colonization to 1877 may substitute for HIST 221; that covering 1865 to the present may substitute for HIST 222.

### **Mathematics 105 Finite Mathematics**

Students obtaining a scaled score of 55 in the College Mathematics Test will receive 4 quarter hours for MATH 105.

### **Mathematics 117 Accelerated Precalculus**

Students obtaining a scaled score of 55 in the Precalculus Test will receive 5 quarter hours for MATH 117.

### **Mathematics 121 Precalculus I**

Students obtaining a scaled score of 55 in the College Algebra test will receive 4 quarter hours for MATH 121.

### **Mathematics 181 Calculus I**

Students obtaining a scaled score of 55 in the Calculus Test will receive 4 quarter hours for MATH 181.

### **Modern Language 101, 102, 103 (Introduction and elementary level)**

German and Spanish examinations: Students obtaining a scaled score of 50-54 will receive 4 quarter hours in level 101. Students obtaining a scaled score of 55-60 will receive 8 quarter hours in levels 101 and 102. Students obtaining a scaled score of 61 and above will receive 12 quarter hours in levels 101, 102 and 103.

### **Psychology 130 General Psychology**

Students who earn a scaled score of 50 on the Introductory Psychology exam will receive 4 quarter hours for PSYC 130.

### **Psychology 215 Developmental Psychology**

Students who earn a score of 50 on the Human Growth and Development exam will receive 4 quarter hours for PSYC 215.

### **Sociology 204 General Sociology**

Students obtaining a scaled score of 50 in the General Sociology examination will receive 4 quarter hours, which will fulfill the basic social studies requirements.

**VALIDATION EXAMINATIONS.** Students who have transcripts from non-accredited colleges and/or transcripts showing nontransferable college courses may request to take validation examinations in courses which are comparable to

those offered by Walla Walla University. Upon successful completion of the examination(s), the student will be given credit as specified.

**COURSE WAIVER EXAMINATIONS.** A student may meet an academic requirement, within specified limits, by passing a waiver examination at least equal in scope and difficulty to a final examination in a course. Successful completion of the examination waives the curricular requirement, but does not result in credit earned. Thus, it does not reduce the total number of quarter hours required for a degree, but will increase the available number of elective hours. The waiver examination is administered by the department in which the course is offered and may not be repeated. Waiver examinations must be taken prior to the final quarter of residence.

**TRANSFER CREDIT BY EXAMINATION.** Credit earned by examination at other colleges or universities may be transferred provided such credit meets the guidelines used by Walla Walla University for credit by examination.

## REPEAT COURSES

Students may register up to a maximum of three times for any course in which a grade is recorded on the transcript (includes grades A-F, X, I, IP, S, NC, and W). A course may not be repeated if the original grade earned was a B or better. Academic credit may be earned only once. The best grade will be computed in the overall grade-point average, though all grades remain on the permanent academic record. A repeat course must be taken as a regularly offered class. Challenge examinations and independent or directed study are not allowed for repeat course work.

Students should typically not repeat any course with a grade of C or better. Some programs have specific policies for repeated classes and minimum course grades. Students should consult with their academic advisor before repeating any class.

Financial aid is not available for any course taken more than two times total. Repeating any course is subject to the Satisfactory Academic Progress (SAP) policy and may result in a student not earning sufficient credits to maintain financial aid eligibility (see a financial counselor in Student Financial Services).

## EXTENSION COURSE WORK

Extension courses are offered by Walla Walla University on a limited basis. These off-campus courses provide opportunity for academic enrichment, acceleration, and continuing education.

The University accepts extension course credit from other institutions provided the institution offering the courses accepts similar credits toward a degree on its own campus.

## ADVENTIST COLLEGES ABROAD

Walla Walla University, together with 13 other Seventh-day Adventist colleges in North America, founded the Adventists Colleges Abroad (ACA) organization in 1967. The ACA program allows students to immerse themselves in the culture and life of the host country and to become conversant in the language. Summer, quarter-by-quarter, and full-year opportunities are available. Presently, students may take a full year at:

Universidad Adventista del Plata, Entre Rios, <b>Argentina</b>	(Spanish)
Seminar Schloss Bogenhofen, Braunau, <b>Austria</b>	(German)
Faculdade Adventista da Bahia, Bahia, <b>Brazil</b>	(Portuguese)
Newbold College, Berkshire, <b>England</b>	(English)
Saleve Adventist University, Collonges-sous-Saleve, <b>France</b>	(French)
Friedensau Adventist University, Sachsen-Anhalt, <b>Germany</b>	(German)
Istituto Avventista Villa Aurora, Florence, <b>Italy</b>	(Italian)
Middle East University, Beirut, <b>Lebanon</b>	(Arabic)
Escuela Superior de Español de Sagunto, Sagunto, <b>Spain</b>	(Spanish)

## COURSE EVALUATION AND CREDIT TOWARD DEGREE

In keeping with typical regional accreditation standards, courses listed in the applicable ACA bulletin and taken while studying through an ACA program are considered in-residence and will be recorded on the WWU transcript. Courses that are listed on an ACA transcript but do not match the ACA bulletin in prefix, number, title, and credits during the applicable year taken, will not be recorded on the WWU transcript. Such courses may be considered as potential transfer credit upon request. Course credit will apply for one of the discipline prefixes listed in the ACA bulletin but will not be allowed for both (i.e. HIST/ENGL 399 - 3 credits, may be taken for either History credit or English credit but not both - 3 credits total). Credit may not be split between discipline prefixes.

Courses will be evaluated based on content rather than course prefix. (Though a student enrolls in Contemporary Religious Outlook with a SPAN prefix, the course will be evaluated as an RELH course at WWU based on content.)

WWU/ACA course equivalency information is available in the Academic Records office or online at: <http://www.wallawalla.edu/academics/student-academic-services/academic-records/aca1/>

## COLLEGE LEVEL ACA PROGRAM PARTICIPATION

- Must have completed at least 16 quarter credits as a regular student of WWU for full-year eligibility.
- Must pay \$100 ACA processing fee prior to application being submitted to ACA.
- College level students may enroll in a 9-credit summer ACA program without prior WWU attendance, however must pay the \$200 WWU enrollment fee and \$25 ACA processing fee prior to application being submitted to ACA.
- Must be competent in the language (minimum: one year of college language or two years of secondary study) - applicable to full-year non-minor programs only.
- Must have a cumulative GPA of 3.0 in the language and an overall GPA of 2.5 or above.
- Student cannot be on academic probation.
- Should complete ENGL 121, 122 and a general studies math course prior to studying abroad.

- Have a good student conduct record.
- Have an application on file in the Academic Records Office on the appropriate ACA application form.
- Should expect to take a normal full-time academic load.
- Should not enroll in more than 18 quarter credits per academic term. Exceptions to this policy must be made in advance. Additional credits reported without prior approval may not be accepted as WWU credit.
- Understands that by withdrawing from all ACA courses within a term, student will be considered totally withdrawn from WWU. This may affect continuing financial aid and scholarship eligibility.
- Ability to meet the financial requirements.
- Loses WWU scholarship eligibility if they attend an ACA program for more than 3 terms, not including summer.
- Must pay ACA tuition in full in advance, less subsidy and awarded financial aid.

## ACA APPLICATION PROCESS

Students planning to study under the full-year program must submit a completed ACA application with a \$100 processing fee by July 15. Applications may be obtained online at [www.aca-noborders.org](http://www.aca-noborders.org).

All applications and payments for tuition, room, and board are to be made through Walla Walla University. Any deviation from this schedule by students of Walla Walla University must be arranged in advance with the Office of Student Financial Services.

Students cannot plan on financial credit for work while residing in foreign countries. The student financial aid officer has information on grants and loans available to students for overseas study. Academic credit may be granted for these studies so that a student may be able to complete a full college year abroad. Prospective students must have successfully completed one year of college French, German or Spanish or the equivalent as applicable, except for Italian. It is recommended that students desiring to participate do so during their sophomore year. **Applicants must consult with their major professors, the Communication and Languages Department, and the ACA Coordinator prior to enrollment. The Registrar, the chair of the applicant's major department, and the Academic Standards Committee will determine how the credits are applied.**

## ACADEMY/HIGH SCHOOL STUDENT PARTICIPATION

A student who has not yet earned a high school diploma but is seeking college level ACA credit, may be accepted as a WWU participant in a language program under the following guidelines:

- Has been accepted as a freshman at WWU and paid WWU enrollment fee; or
- Has completed six semesters of high school and paid \$250 WWU processing fee.
- Student's cumulative high school GPA is 3.25 or above.
- Student must be recommended by the high school principal or vice-principal to participate in the program.

- Student may not enroll in more than 9 quarter credits per term.
- Participation is limited to summer programs only.
- Student understands ACA coursework will be recorded on the permanent university transcript, which may enhance or reduce acceptance to a specific university.
- Dual credit may be earned for both the high school diploma (at the discretion of the high school) and a university degree.
- Student is not eligible for financial aid until high school diploma is earned.
- Payment in full must be received by WWU prior to application being submitted to ACA office.
- WWU will not bill subsidy. Parents may work directly with employer to determine subsidy eligibility. Some employers may pay in advance to help meet the payment-in-full requirement.

## ACADEMIC PROGRAMS AND GRADUATION REQUIREMENTS

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### UNDERGRADUATE DEGREES OFFERED

Walla Walla University offers courses of study leading to the following undergraduate degrees:

- Associate of Science (A.S.)
- Bachelor of Arts (B.A.)
- Bachelor of Business Administration (B.B.A.)
- Bachelor of Education (B.Ed.)
- Bachelor of Music (B.Mus.)
- Bachelor of Science (B.S.)
- Bachelor of Science in Engineering (B.S.E.)
- Bachelor of Social Work (B.S.W.)

Walla Walla University is a comprehensive institution of higher education offering not only traditional liberal arts and professional programs, but also preprofessional and special two-year associate degree curricula for students who may wish to pursue a terminal program of a vocational nature. For a listing of undergraduate areas of study offered see Areas of Study section as listed in this bulletin. For a listing of graduate areas of study offered see the Graduate Bulletin.

### GRADUATE DEGREES

Walla Walla University offers courses of study leading to the following graduate degrees:

- Master of Arts (M.A.)
- Master of Arts in Teaching (M.A.T.)
- Master of Education (M.Ed.)
- Master of Initial Teaching (MIT)
- Master of Science (M.S.)
- Master of Social Work (M.S.W.)

Students desiring information concerning graduate degree requirements (standards of admission, degree candidacy, curricula, etc.) should consult the

Graduate Bulletin, which is available from the Marketing and Enrollment Services Office and online.

## TEACHER EDUCATION PROGRAM

The Walla Walla University School of Education and Psychology is authorized by the Washington State Board of Education to recommend the residency teachers' credential. Students who plan to enter the teaching profession with a denominational or state teaching credential should become thoroughly acquainted with the certification requirements listed in the Education and Psychology section of this bulletin.

## BACCALAUREATE DEGREES

**The Bachelor of Arts** degree consists of four years of course work that places the student's major field of study in the context of a liberal arts education. To encourage a wide range of studies, the degree requires a greater concentration of general studies courses than do other degrees and a minor in an area distinct from the major, while it allows a greater number of electives. In the tradition of the liberal arts, all Bachelor of Arts degree majors require foreign language study.

**The Bachelor of Business Administration** degree consists of a four-year program with concentrations available in accounting, entrepreneurship and small business management, finance, management, and marketing. For specific requirements, see the School of Business section of this bulletin.

**The Bachelor of Education** degree consists of a four-year program in which students earn a secondary teaching certification. The degree must be combined with a major in an approved secondary content area, leading to endorsement in that major area. For specific requirements, see the School of Education and Psychology section of this bulletin.

**The Bachelor of Music** degree consists of four years of course work primarily in the major field of study with modified requirements in general studies. The degree is offered with a choice of two majors, Performance or Music Education. For the modified general studies program and other specific requirements, see the Music section of this bulletin.

**The Bachelor of Science** degree consists of four years of course work that places the student's major field of study in the context of a liberal arts education. The degree permits somewhat greater concentration in the field of study and requires fewer general studies courses than does the Bachelor of Arts degree. No foreign language study is required. No minor is required with the exception of Elementary Education.

**The Bachelor of Science in Engineering** degree is a four-year program accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>, requiring 200 quarter hours of course work. It is designed to prepare students for entry into the profession of engineering and for lifelong learning including programs of advanced study in bioengineering, civil, computer, electrical, and mechanical engineering or associated fields. For the modified general studies program and other specific requirements, see the School of Engineering section of this bulletin.

**The Bachelor of Social Work** degree is a four-year program approved by the Council on Social Work Education, the accrediting body for all social work



education programs. It prepares students for entry level positions in a variety of social service agencies. For specific requirements, see the School of Social Work and Sociology section of this bulletin.

## BACCALAUREATE DEGREE REQUIREMENTS

Although general studies are stressed during the first two years of study, students should plan to include certain elementary and intermediate courses in the desired major during the freshman and sophomore years in order to successfully complete the major.

A student who is undecided as to a major field of study may, during the freshman year, explore several fields of knowledge without loss of credit if he/she plans his/her choices with an academic advisor. It is best for a major to be chosen no later than the end of the sophomore year. The selection of a minor (for Bachelor of Arts degree candidates) and appropriate electives must be made in consultation with and approved by the assigned academic advisor.

Candidates are expected to be fully informed concerning degree requirements and are responsible for their fulfillment. Students shall have the option of meeting degree requirements as published in the bulletin at the time of initial registration or any bulletin published while in regular attendance. Those missing regular attendance for one full school year (except for Christian Service Volunteers) must meet the requirements of the current bulletin upon resuming attendance. Candidates for degree completion must submit a signed Application for Degree (Senior Outline) and a signed Graduation Contract to the Academic Records Office three quarters prior to the expected degree completion date. Students who have submitted a formal application for a degree (Senior Outline) to the Academic Records Office and do not graduate will be allowed only one year after the last date of enrollment to complete all degree requirements under the bulletin specified on the approved Senior Outline; otherwise the current bulletin requirements must be met.

Undergraduate students who marched, or were approved to march in the June Commencement, but have not completed degree requirements will be charged a fee each quarter, except summer, for up to two years after the proposed graduation date or until all requirements are met and the degree is posted. See Financial Bulletin.

Degrees are conferred and diplomas issued as of commencement and on the last Friday of each month. All course work must be completed, transcripts received, comprehensives taken and acceptable grades received before the degree will be awarded.

## COMMENCEMENT EXERCISES

Commencement exercises are held once a year in June. Students who have completed their requirements Summer, Autumn, Winter, or Spring quarter may participate in the following June commencement exercises. Those anticipating the completion of an approved degree program during the upcoming summer must complete a Petition to Participate in Commencement with Deferred Courses to participate in the current June graduation exercises.

By Thursday prior to the June graduation date, prospective summer degree candidates must have satisfied the following:

1. Approved degree application (Senior Outline) on file in the Academic Records office showing a completion date for summer.
2. Approved by Academic Records to participate in Commencement with deferred courses.
3. Financial clearance for the completion of summer course work.
4. Registered for all remaining WWU coursework.
5. All transfer transcripts on file in the Academic Records office.
6. A minimum cumulative GPA of 2.00 for university work.
7. No more than twelve (12) credits to complete after spring quarter, including summer courses and outstanding Is and IPs.
8. Remaining credits must meet residency requirements.

Any exceptions to the above requirements must be approved by Academic Standards Committee.

## GRADUATION IN ABSENTIA

Degree candidates are expected to participate in the yearly graduation ceremonies. A senior wishing not to participate should apply to the President's Office to graduate in absentia.

## RESIDENCY REQUIREMENTS:

1. A minimum of 25% of the credits in each major and minor must be Walla Walla University credits.
2. A minimum of 9 upper-division credits in the major and 3 upper-division credits in the minor must be Walla Walla University credits.
3. At least 40 of the last 45 credits before degree completion must be Walla Walla University credits.

## GENERAL REQUIREMENTS:

1. **Credits required.** Successful completion of a minimum of 192 quarter hours (200 quarter hours, Bachelor of Science in Engineering), including 60 quarter hours in courses numbered 300 or above, and a cumulative grade-point average of 2.00 or above in the major, minor, and overall.
2. **Major.** The completion of a major field of departmental specialization (minimum of 45 quarter hours and a cumulative grade-point average of 2.00). A grade lower than C- will not apply toward a major except in engineering (see Engineering section of this bulletin). At least 21 quarter

hours in the major must be numbered 300 or above. Unless otherwise specified all electives applied to the major must be courses offered by the major department. A course may fulfill requirements for more than one major unless otherwise stated. A course may satisfy a cognate requirement of a major while simultaneously being counted toward the credit requirement of another major, minor, or concentration.

3. **Double Majors.** Students taking double majors must meet all the degree requirements for each major, including the general studies programs. Majors must be completed within the degrees under which they are described in this bulletin. (BA majors can serve as second majors only under a BA degree, BS majors can serve as second majors only under a BS degree; the BBA, BMus, BSE, and BSW degrees cannot have second majors.
4. **Minor.** Bachelor of Arts degrees require the completion of a minor of at least 27 quarter hours and a minimum cumulative grade-point average of 2.00, or the completion of an Associate of Science degree, provided it is in an area distinct from the major. Three quarter hours must be courses numbered 300 or above. A grade lower than C- will not apply toward a minor. A course may satisfy content requirements for several majors or minors but credit will apply to only one. Unless otherwise specified all electives applied to the minor must be courses offered by the minor department. A cognate course may satisfy the cognate requirements of a major while simultaneously being counted toward the credit requirement of another major, minor, or concentration.
5. **General Studies Requirements.** The completion of the general studies requirements as specified for the type of degree sought detailed in the following section (84 quarter hours for the Bachelor of Arts and 72 quarter hours for the Bachelor of Science degree).
6. **Candidacy for Degree.** Degree candidates must file a formal application (Senior Outline) for a degree, showing the proposed schedule of courses for the senior year, with the Registrar not later than one week after the beginning of the first quarter of the senior year. Appropriate forms may be obtained from the Academic Records Office. Students are not considered candidates for degrees or eligible for senior class membership until officially notified by the Registrar that their senior outlines have been approved.
7. **Senior Class.** Candidates for degrees must be members of the senior class. The fee is fixed by the class and approved by the President of the University.
8. **Comprehensive Examinations.** A comprehensive examination is required for each major before a degree may be conferred. For some majors, the Major Field Test (MFT) is used, and for others, the Graduate Record General and/or Subject Exam is used as the comprehensive. Elementary Education majors are required to pass the Washington Educator Skills Test-Endorsement for Elementary Education: Content Knowledge (WEST-E Elementary). There are also some departments/schools who provide a comprehensive exam and/or project. The bulletin details those requirements under the appropriate department.

The General Graduate Record Exam (GRE) is now available only by computer, usually at Sylvan Technology centers in metropolitan areas. Information regarding registration for the General GRE is available at the center.

Students whose majors require the Subject GRE must pick up registration materials in the test center. These materials must be mailed at least nine weeks prior to the test date. Please note that there are only three times that the subject exams are administered and the dates are fixed by the test company and cannot be changed. Non-Sabbath testing is of course available on campus but strict instructions must be followed.

9. **Transcripts and Correspondence Work.** Seniors must have all transfer transcripts on file in the Academic Records Office by the 10<sup>th</sup> day of Spring quarter to be eligible to participate in June commencement exercises.
10. **Second Baccalaureate Degree.** Two baccalaureate degrees with majors from different disciplines may be conferred concurrently or sequentially if the candidate has met the requirements of both degrees and has spent a minimum of 40 of their last 45 credits in residence. See requirements 2 and 3 regarding majors. Students earning a Post Baccalaureate degree are eligible to participate in commencement.
11. **Applied Music Credit Applicable Toward Baccalaureate Degree.** Not more than 9 quarter hours in applied music (including 3 quarter hours of Ensemble) may be earned toward a baccalaureate degree without an equal number of quarter hours in music courses with prefixes MUCT, MUED, or MUHL. Additional hours in applied music may include ensemble hours without restrictions.
12. **Post Baccalaureate Minor and Concentration Additions.** Students who already hold a degree from Walla Walla University may build onto that degree by adding an additional concentration or minor. All coursework must meet the current bulletin requirements and policies. Minors and concentrations will be listed on the academic transcript; however, they will not be linked directly to the previous degree and a new diploma will not be issued. Students earning additional minors and concentrations are not eligible to participate in commencement.

## ASSOCIATE DEGREE REQUIREMENTS

The two-year associate degree programs are intended to provide accredited technological and occupational preparation for students desiring to graduate with marketable skills while experiencing the full benefits of a residential Christian college.

Candidates are expected to be fully informed concerning degree requirements and are responsible for their fulfillment. Students shall have the option of meeting degree requirements as published in the bulletin at the time of initial registration or any bulletin published while in regular attendance. Those missing regular attendance for one full school year (except for Student Missionaries and Task Force workers) must meet the requirements of the current bulletin upon resuming attendance.

## GRADUATION REQUIREMENTS FOR THE ASSOCIATE DEGREE

All candidates for the associate degree must complete the following residence and general requirements:

## RESIDENCY REQUIREMENTS:

A minimum of 24 quarter hours. The last two quarters must be completed in residence, including a minimum of 9 quarter hours earned in the concentration.

## GENERAL REQUIREMENTS:

1. A minimum of 96 quarter hours must be completed.
2. A cumulative grade-point average of 2.00 (C) is required. A grade lower than C- will not apply toward the concentration.
3. The associate degree concentration as outlined under the respective departments of instruction of this bulletin must be completed.
4. The general studies requirements as outlined below must be completed. For a listing of the courses which may apply to the requirements, see Specific Courses for General Studies section of this bulletin.
5. A course may fulfill requirements for one or more concentrations but credit will apply to only one concentration.
6. Students must have all transcripts for correspondence and transfer credit on file in the Academic Records Office two weeks prior to graduation. All correspondence work must be completed prior to the beginning of the last quarter in residence.
7. Degree candidates must file a formal application (Senior Outline) for a degree showing the proposed schedule of courses for the senior year with the Registrar not later than one week after the beginning of the first quarter of the senior year. Appropriate forms may be obtained from the Academic Records Office. Students are not considered candidates for degrees and are not eligible for senior class membership until officially notified by the Registrar that their senior outlines have been approved.

## STUDENT RESPONSIBILITY FOR MEETING DEGREE REQUIREMENTS

While your advisor may assist you in planning a program, degree candidates are expected to be fully informed concerning degree requirements and are responsible for their fulfillment. The following checklist will help you in meeting graduation requirements at WWU. You may use this page to check the requirements off as you meet them. Please see the Academic Programs and Graduation Requirements section and the departmental sections of the university bulletin for further explanations of these requirements.

### Checklist for Meeting Degree Requirements

#### — **General studies requirements:**

See General Studies section of bulletin for specifics.

84 hours for B.A. degrees

72 hours for B.B.A., B.S., or B.S.W. degrees

B.Mus. and B.S.E. degrees (see degree requirements)

32 hours for A.S. degrees

#### — **Total hours required:**

192 quarter hours for bachelor's degrees (exception: 200 for the B.S.E. degree)

96 credits must be from four-year colleges or universities

96 quarter hours for associate degrees

— **Upper-division credits:**

60 quarter hours required for bachelor's degrees including:  
a minimum of 21 quarter hours in the major  
a minimum of 3 quarter hours in the minor

— **Transfer credits:**

Transcripts for all off-campus credits need to be on file in the Records Office. Before taking courses off-campus it is advisable to check with your academic advisor and the Records Office to be sure the credits satisfy requirements needed.

— **Residency requirements:**

At least 40 of last 45 credits must be on campus.  
25% of major credits (including 9 upper-division) must be on campus  
25% of minor credits (including 3 upper-division) must be on campus

— **Foreign language requirement:**

The B.A. degree requires 8-12 credits of one foreign language.

— **Minimum acceptable grade in major or minor:**

No grade lower than a C- (1.70) is acceptable in a major or minor.

Exceptions:

Nursing and Education major minimum = C (2.00)

Engineering (see B.S.E. section of the bulletin)

— **GPA requirements:**

Major or minor GPA: minimum of 2.00 in each major/minor.

Cumulative GPA: minimum of 2.00.

Exceptions: Education majors, 2.75; Nursing majors, 2.50.

— **Comprehensive exams:**

A comprehensive exam is required for most majors. See departmental advisor or the counseling center for specific requirement.

— **Application for Degree (Senior Outline):**

File form with the Records Office three quarters before graduation.

Form must be approved by the Records Office before you are eligible to graduate.

## GENERAL STUDIES

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### GENERAL STUDIES MISSION

The purpose of the Walla Walla University general studies program is to provide a balanced education that supports the institution's core themes: excellence in thought, generosity in service, beauty in expression, and faith in God. The general studies curriculum is broad in scope, covering major intellectual or aesthetic ideas or methods across various disciplines. Students completing the general studies program at Walla Walla University will be able to:

- Demonstrate critical and reflective thinking
- Exhibit logical and quantitative reasoning
- Communicate effectively and responsibly
- Articulate a Christian worldview

In addition to providing breadth of knowledge and the development of skills for greater depth of study, the general studies program seeks to prepare students for “responsible citizenship, generous service, a deep respect for the beauty in God’s creation, and the promise of re-creation through Jesus Christ.” (WWU mission)

**Outline of General Studies Requirements:**

Bachelor of Arts Degree	84 quarter hours (including foreign language)
Bachelor of Business Administration Degree	72 quarter hours
Bachelor of Education Degree	72 quarter hours
Bachelor of Music Degree	*
Bachelor of Science Degree	72 quarter hours
Bachelor of Science in Engineering Degree	*
Bachelor of Social Work Degree	72 quarter hours
Associate of Science Degree	32 quarter hours

\*These degrees have modified general studies requirements. Please refer to the respective departments of instruction in this bulletin.

Students must meet the minimum overall general studies credit requirement for their degree; however, they may be one credit short in any one general studies category except Math and Physical Education.

For the Honors General Studies Program, see the Honors General Studies section of this bulletin.

**GENERAL STUDIES - SPECIFIC REQUIRED COURSES**

The hours listed for each area below indicate the minimum number of hours that must be chosen from that area.

**HEALTH AND PHYSICAL EDUCATION (2)**

Courses introduce the student to health principles and, by stressing both theory and activity, emphasize the pursuit of healthful living.

**Physical Activity: (2)**

Two hours must be chosen from the physical activity area.

PEAC 107-195	Activity Courses	
<b>Health</b>		
HLTH 110	Wellness for Living	3
HLTH 208	Drugs and Society	3
HLTH 220	Human Nutrition	4

**HISTORY (8)**

Courses in history help the student understand the forces that have shaped the individual in his culture and society. History courses interpret the sweep of cultures, instilling an appreciation for the development of civilization and an awareness of the unique place of the Christian church in time.

HIST 121, 122	The West and the World	4, 4
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HIST 221, 222	History of the United States	4, 4
HIST 242	Modern East Asian History	4
HIST 254	History of Christianity	4
HIST 275	History of England	4
HIST 283	Latin America	4
HIST 305	The Ancient Near East	4
HIST 306	Classical Greece and Rome	4
HIST 357	The African-American Experience	4
HIST/ECON 359	The American Economy	4
HIST 463	Women and Society in Early Modern Europe	4

## SOCIAL SCIENCE (4)

Courses in social science help the student understand the forces that have shaped the individual in his culture and society. Social science courses contribute to the student's understanding of the ideas, logic, and methods of the scientific study of human relations.

Students must complete one of the following courses:

ANTH 225	Cultural Anthropology	4
PSYC 130	General Psychology	4
PSYC 217	Psychology of Learning	4
PSYC 344	Social Psychology	4
SOCI 204	General Sociology	4

Or complete both of the following courses:

PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4

Social Science Electives:

ANTH 225	Cultural Anthropology	4
ECON 204	Fundamentals of Economics	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
EDUC 211	Introduction to and Foundations of Education	3
GBUS 361	Business Law I	4
LANG 406	Language and Culture	4
PLSC 224	American Government	4
PSYC 130	General Psychology	4
PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4
PSYC 344	Social Psychology	4
PSYC 455	History and Systems of Psychology	4
SOCI 204	General Sociology	4
SOCI 225	Marriage and Family Life (or PSYC 225)	2
SOCI 234	Current Social Problems (or SOWK 234)	4
SOCI 236	Privilege and Oppression	4
SOCI 420	Immigration and Identity	4
SOWK 260	Human Behavior and The Social Environment I	3



SOWK 261	Human Behavior and The Social Environment II	3
TECH 321	Technology and Society	4

## HUMANITIES (12)

Courses in the fine arts, literature, and philosophy introduce the student to human aesthetic and intellectual aspirations and achievements. Fine arts and literature courses concentrate on ideas and styles in their cultural context rather than on the development of skills. Philosophy courses should in their manner and subject matter foster an understanding of and appreciation for philosophy as a distinct mode of inquiry.

Humanities courses must be chosen from at least two of the three areas below:

### Fine Arts

ART 251	Introduction to Art	4
ART 312	Aesthetics and Photography	4
ART 324	History of World Art	3
ART 325	History of World Art	3
ART 326	History of World Art	3
DRMA 363	History of Theatre (or ENGL 363)	4
MUHL 124	Introduction to Music	4
MUHL 134	World Music	4
MUHL 144	Introduction to American Popular Music	4

### Literature

*ENGL 210, 211, 212	Survey of British and American Literature	4, 4, 4
ENGL 214	Themes in Literature	4
ENGL 357	The African-American Experience	4
ENGL 313	Image and Text	4
ENGL 317	Pacific Northwest Writers	4
ENGL 358	Classical Literature	4
ENGL 359	World Literature	4
ENGL 360	Shakespeare at Ashland	2
ENGL 368	Contemporary Literature	4
ENGL 454	Literature of the Bible	4
FILM 215	Introduction to Film Literature	4
FILM 318	Film Studies	4; 8
FREN 407	Survey of French and Francophone Literature	4
FREN 408	Contemporary French and Francophone Literature	4
SPAN 407	Survey of Spanish Literature	4
SPAN 408	Contemporary Latino Literature	4

\*Registration requires permission of instructor.

### Philosophy

EDUC 410	Philosophy of Education (or PHIL 410)	3
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PHIL 204	Essentials of Critical Reasoning	4
PHIL 205	Introduction to Philosophy	4
PHIL 305	Moral Philosophy	4
PHIL 310	Philosophy and the Bible	4
PHIL 315	Topics in the History of Philosophy	4
PHIL 407	Philosophy of Science	4
PHIL 411	Philosophy of Law	4
PHIL 412	Philosophy of Religion	4
PHIL 440	History of Social and Political Philosophy	4
PHIL 461	African-American Philosophy	4
SPCH 341	Argumentation	4

## LANGUAGE ARTS (12)

Courses introduce the student to the concepts and skills of the language arts by emphasizing the practice of effective written and oral communication. Courses in foreign language should emphasize the acquisition of such communicative skills as speaking, reading, and writing a foreign language while introducing students to a foreign culture and its thought.

### Required Courses:

ENGL 121, 122	College Writing I, II	
	or	6
ENGL 141, 142	Advanced College Writing I, II	
ENGL 223	Research Writing	3
SPCH 101	Fundamentals of Speech Communication	4
	or	
SPCH 207	Small Group Communication	3
	or	
	Foreign Language (see list below)	4

### Language Arts Electives:

DRMA 336	Drama Writing	3
JOUR 245	Media Writing	4
JOUR 341	Feature Writing	4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3
SPCH 407	Advanced Small Group Communication	3
SPCH 443	Persuasive Speaking	4
WRIT 324	Creative Nonfiction Writing	4
WRIT 334	Poetry Writing	4
WRIT 335	Narrative Writing	4

## Foreign Language

All B.A. students are required to complete a foreign language sequence of 12 quarter hours at the elementary level or 8 quarter hours at the intermediate level. (The Greek I sequence plus GREK 331 satisfies this requirement.)

### Elementary:

FREN 101, 102, 103	Elementary French	4, 4, 4
GREK 231, 232, 233	Greek I	3, 3, 3
GRMN 101, 102, 103	Elementary German	4, 4, 4
HEBR 331, 332, 333	Hebrew I, II, III	4, 4, 4
LATN 211, 212, 213	Latin I	4, 4, 4
SPAN 101, 102, 103	Elementary Spanish	4, 4, 4

### Intermediate:

FREN 201, 202	Intermediate French	4, 4
GREK 331	Greek II	3
LATN 311, 312, 313	Latin II	4, 4, 4
SPAN 201, 202	Intermediate Spanish	4, 4

## MATHEMATICS (4)

Courses in mathematics emphasize mathematical thought and practice and the relationship of mathematics to other disciplines.

MATH 105	Finite Mathematics	4
MATH 106	Introduction to Statistics	4
MATH 112, 113	Mathematics for Elementary Teachers	3, 3
MATH 117	Accelerated Precalculus	5
MATH 121, 122	Precalculus I, II	4, 4
MATH 131, 132	Calculus for the Life Sciences I, II	4, 4
MATH 181, 281	Calculus I, II	4, 4
MATH 282, 283	Calculus III, IV	4, 4

## NATURAL SCIENCE (8)

Courses in science emphasize methods of measurement and discovery and help the student to understand through theory and practice how hypotheses are developed, tested, and applied.

8 hours must be taken from one course sequence.

### Transfer Students:

All students are required to complete a two-course sequence of a laboratory science except transfer students from accredited institutions who have completed:

- Two different laboratory sciences before entering WWU.
- One laboratory science that is not offered at WWU. In this case, the completion of any additional laboratory science will fulfill the requirement.

BIOL 141, 142, 143	General Biology	4, 4, 4
BIOL 105, 106	Contemporary Biology	4, 4
BIOL 121, 122, 123	Anatomy and Physiology	4, 4, 4
CHEM 141, 142, 143	General Chemistry	3, 3, 3

CHEM 144, 145, 146	General Chemistry Laboratory	1, 1, 1
PHYS 151, 152	Physical Science	3, 3
PHYS 154, 155	Physical Science Laboratory	1, 1
PHYS 201, 202	Conceptual Physics	3, 3
PHYS 204, 205	Conceptual Physics Laboratory	1, 1
PHYS 211, 212, 213	General Physics	3, 3, 3
PHYS 214, 215, 216	General Physics Laboratory	1, 1, 1
PHYS 251, 252, 253	Principles of Physics	3, 3, 3
PHYS 254, 255, 256	Principles of Physics Laboratory	1, 1, 1

The following courses do not satisfy the natural science requirement but may be counted as general studies electives:

ENGR 310	Sustainable Energy Systems	2
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## RELIGION AND THEOLOGY (18)

Courses in religion and theology emphasize the understanding and application of Biblical knowledge, foster continued spiritual growth, and help the student develop a personal religious philosophy and prepare for active witnessing.

A minimum of one lower-division course (courses numbered from 100 to 299) must be completed before registering for any upper-division courses (courses numbered 300 and above).

A minimum of six credits must be upper-division.

A minimum of six credits must be from biblical studies (courses with the RELB prefix).

Students, except for engineering and nursing majors, who are seeking a baccalaureate degree must complete one of the following courses:

RELT 110	Introduction to Seventh-day Adventist Belief and Practice	4
RELT 202	Christian Beliefs	4
RELT 417	Inspiration and Revelation	3
RELH 457	History of Adventism	3

## Requirements for students transferring credit from non-Seventh-day Adventist regionally accredited institutions:

Students transferring 45-89 credits from non-Seventh-day Adventist, regionally accredited colleges/universities must complete 12 credits of religion/theology at a regionally accredited Adventist college/university. A minimum of 3 credits must be in biblical studies (RELB), a minimum of 3 credits must be upper-division, and one of the following courses must be completed: RELT 110, RELT 202, RELT 417, or RELH 457.

Students transferring 90-135 credits from non-Seventh-day Adventist, regionally accredited colleges/universities must complete 10 credits of religion/theology at a regionally accredited Adventist college/university. A minimum of 3 credits must be from biblical studies (RELB), a minimum of 3 credits must be upper-division, and one of the following courses must be completed: RELT 110, RELT 202, RELT 417, or RELH 457.

Students transferring more than 135 credits from non-Seventh-day Adventist, regionally accredited colleges/universities must complete 8 credits of religion/theology at a regionally accredited Adventist college/university. A minimum of 3 credits must be from biblical studies (RELB), a minimum of 3 credits must be upper-division, and one of the following courses must be completed: RELT 110, RELT 202, RELT 417, or RELH 457.

### **Biblical Studies: (6)**

A minimum of six credits must be from biblical studies.

RELB 104	The Ministry of Jesus	4
RELB 105	The Sermon on the Mount	2
RELB 106	The Parables of Jesus	2
RELB 111	Messages of the Old Testament	4
RELB 231	Exploring the New Testament	4
RELB 301	Old Testament History	3
RELB 302	Pentateuch	4
RELB 303	Old Testament Psalms, Stories, and Wisdom	3
RELB 304	Hebrew Prophets	4
RELB 306	The Bible and Its Translations	2
RELB 307	Creation in the Bible	2
RELB 312	Daniel and Jeremiah	4
RELB 313	Revelation	3-4
RELB 333	Biblical Perspectives on Healing	4
RELB 337	Jesus and The Gospels	4
RELB 339	Luke-Acts	4
RELB 340	Acts and New Testament Letters	4
RELB 341	Scribes, Manuscripts, and the New Testament	2
RELB 354	Literature of the Bible	4
RELB 362	Paul and The Gospel	4
RELB 412	Daniel and Revelation	4
RELB 421	Interpreting the Bible	4
RELB 474	Study Tour: The Holy Lands and Its Peoples	4

### **Religion or Theology**

RELH 205	Biblical Archaeology	4
RELH 303	World Religions	4
RELH 455	Early Church History	3
RELH 457	History of Adventism	3
RELM 233	Introduction to Cross-Cultural Ministry	3
RELT 110	Introduction to Seventh-day Adventist Belief and Practice	4
RELT 202	Christian Beliefs	4
RELT 326	Spirituality and Discipleship	4
RELT 340	Spiritual Care and Nursing	3-4

RELT 342	Issues of God and Faith	3
RELT 348	Christian Ethics	3-4
RELT 352	The Christian and the Environment	2
RELT 412	Philosophy of Religion	4
RELT 417	Inspiration and Revelation	3
RELT 466	Issues in Religion and Culture	4

### **General Studies Requirements for Students Who Have Earned a Previous Baccalaureate Degree at an Accredited College or University:**

1. If the student has a prior degree from WWU, general studies bulletin requirements are complete. However, if the previous degree was not a BA degree and the student is now seeking a BA degree, then the language requirement must be completed.
2. If the student has a degree from an accredited institution other than WWU, the student must meet the general studies requirements as listed below.
  - a. One physical education activity course (1 credit minimum).
  - b. One general studies history course (4 credits minimum).
  - c. One of the required general studies social science courses (4 credits minimum).
  - d. Two general studies humanities courses (8 credits minimum).
  - e. Students from a university/college with non-English instruction must successfully complete an English competency exam administered by the English department or have taken courses equivalent to the College Writing sequence, regardless of the courses on their transcript.
  - f. One general studies mathematics course (4 credits minimum).
  - g. Two general studies lab science courses (8 credits minimum).
  - h. Bulletin requirements for general studies religion credits for transfer students.

## **GENERAL STUDIES REQUIREMENTS FOR THE ASSOCIATE DEGREE**

Select a minimum of 32 quarter hours from the following areas:

<u>Areas</u>	<u>Hours Min/Max</u>
Health and Physical Education	0-2
History	0-4
Social Science	0-4
Humanities	0-8
Language Arts	9-13
Required: ENGL 121, 122, 223	
Mathematics	0-4
Natural Science	0-4
Religion and Theology	8

Biblical Studies, 4-8 hours

## HONORS GENERAL STUDIES PROGRAM

The Honors General Studies Program offers an alternate general studies experience designed to inspire curious, highly motivated students to serve as leaders of thought and agents of change.

This program is a separate track of general studies and not a major or a minor in itself. Honors core courses have a flavor distinctly different from the regular general studies courses because they use primary source material more extensively than textbooks to enhance the development of independent thinking. Honors core courses follow an interdisciplinary approach that stresses the unity of knowledge; honors electives are designed to help students “transform academic achievement into responsible citizenship” (WWU Mission Statement). The classes are more personalized and typically smaller than other general studies classes. Some courses are team taught.

Students in the Honors Program are awarded an annual scholarship dependent on successful completion of specific courses and a minimum GPA. See <https://www.wallawalla.edu/academics/areas-of-study/honors-program/> for specific details and scholarship amounts. At graduation, students who complete the Honors Program requirements with at least a 3.25 cumulative GPA and a 3.0 GPA in honors core courses and honors core cognates will be designated as “Honors General Studies Graduates.”

**ADMISSION REQUIREMENTS.** The Honors Admissions Committee considers high school GPA, standardized test scores, an essay submitted by the student as part of the application, and on occasion, personal interviews with applicants and recommendations from teachers. It is advantageous for applicants to have completed Advanced Placement or International Baccalaureate course work and other enriched offerings in high school. Students already enrolled in the University may apply to the program or petition the Honors Program director to enroll in a specific Honors course.

**PROGRAM REQUIREMENTS.** Honors students must complete the honors core courses and a selection of other general studies courses as listed below.

## HONORS GENERAL STUDIES REQUIREMENTS

For B.A.: Honors core, honors core cognates, a foreign language (12 credits of elementary or 8 credits of intermediate), and additional honors electives to total 80 hours, at least one course from each elective category.

For B.B.A., B.S., and B.S.W.: Honors core, honors core cognates, and additional honors electives to total 68 hours, at least one course from each elective category.

For B.S.E., B.Mus. (Music Education): Honors core, honors core cognates, and one religion elective.

For B.Mus. (Performance): Honors core, honors core cognates, one religion elective, and FREN 101, FREN 102, FREN 103, or GRMN 101, GRMN 102, GRMN 103.

Core Requirements (35 credits):

HONR 131, 132, 133	Western Thought	12
HONR 243	Honors Research Writing	3
HONR 281	The Bible and Its Environments	4
HONR 310	Science and the Arts	4
HONR 348	Topics in World Religious Thought	4
HONR 349	Religion in a Social Context	4
HONR 392	Honors Portfolio	1
HONR 496, 497, 498	Honors Seminar: Faith and Learning	3

Core Cognates (20 credits):

ENGL 121, 122*	College Writing I, II	6
	or	
ENGL 141, 142*	Advanced College Writing I, II (Recommended)	2
PEAC	Physical Education Activity Courses	

Select one of the following:

MATH 181	Calculus I	4
	or	
MATH 131	Calculus for the Life Sciences I	

\*We expect incoming Honors students without college writing credit to enroll in Advanced College Writing (ENGL 141). Honors students who have achieved a 4 or 5 on the AP Language and Composition Exam or the Literature and Composition exam will be awarded 3 quarter hours as a substitute for ENGL 121/141. Honors students who have obtained credit for the equivalent ENGL 223 may, by submitting an acceptable portfolio of work from their course, waive the requirement of HONR 243, Honors Research Writing.

Select one of the following sequences (8 credits):

BIOL 141, 142	General Biology	8
CHEM 141, 142	General Chemistry	6
CHEM 144, 145	General Chemistry Laboratory	2
PHYS 211, 212	General Physics	6
PHYS 214, 215	General Physics Laboratory	2
PHYS 251, 252	Principles of Physics	6
PHYS 254, 255	Principles of Physics Laboratory	2

Religion Elective: Select one of the following:

RELB 274/474	Study Tour: The Holy Lands and Its Peoples	4
RELB 354	Literature of the Bible	4
RELB 421	Interpreting the Bible	4
RELH 205	Biblical Archaeology	4
RELM 233	Introduction to Cross-Cultural Ministry	3
RELT 342	Issues of God & Faith	3
RELT 348	Christian Ethics	4
RELT 412	Philosophy of Religion	4



## HONORS ELECTIVES FOR B.A., B.B.A., B.S., AND B.S.W. DEGREES:

Choose one course from each of the following categories.<sup>1</sup>

Global Understanding: Select one of the following courses:

COMM 325	Multicultural Communication	3
ENGL 359	World Literature	4
HIST 242	Modern East Asian History	4
HIST 274	Study Tour: English History in Context	4
HIST 283	Latin America	4
HIST 357	The African-American Experience	4
HIST 446	History of the Pacific Northwest	4
HIST 474	Study Tour: English Reformation	4
SOCI 236	Privilege and Oppression	4
SOCI 420	Immigration and Identity	4

Responsible Citizenship: Select one of the following courses:

COMM 357	Media Law	4
ECON 204	Fundamentals of Economics	4
MGMT 476	Foundations of Leadership	4
PHIL 204	Essentials of Critical Reasoning	4
PHIL 305	Moral Philosophy	4
PHIL 411	Philosophy of Law	4
PHIL 440	History of Social and Political Philosophy	4
PLSC 224	American Government	4
TECH 321	Technology and Society	4

Aesthetic Appreciation: Select one of the following courses:

ART 312	Aesthetics and Photography	4
ART 324, 325, 326	History of World Art	3, 3, 3
ENGL 274	Study Tour: British Literature in Context	4
ENGL 313	Image and Text	4
ENGL 474	Study Tour: Topics in British Literature	4
ENGL 360	Shakespeare at Ashland	2
WRIT 324	Creative Nonfiction Writing	4
WRIT 334	Poetry Writing	4
WRIT 335	Narrative Writing	4
SOCI 420	Immigration and Identity	4

**See page 234 for a list of course descriptions.** Look for the following prefix to find Honors courses: HONR.

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<sup>1</sup> Requests for substitutions for credit earned through directed study or study abroad opportunities may be submitted to the Honors Program director for consideration. In addition to Adventist Colleges Abroad, WWU has specific affiliations with Middlebury College's Oxford Humanities Program, The Council of Christian Colleges and Universities Best Semester Program, and the Balua Regional Archaeological Project.

## COURSE NUMBERING

The course numbering sequence is designed to reflect in varying degrees a progression in course content, level of approach, and breadth of coverage. The course description further delineates specific course content progression. This information provided by the course number, prefix, and description should serve as a general guide to students in selecting courses compatible with their background and ability.

In general, the following guidelines have been used in course numbering:

The first numeral indicates academic level of the course:

- 001-100 Remedial and Experiential courses (credits do not apply toward graduation, but do apply to financial aid minimums.)
- 101-199 Courses normally taken during the freshman year
- 200-299 Courses normally taken during the sophomore year
- 300-399 Courses normally taken during the junior year
- 400-499 Courses normally taken during the senior year

Courses in which the third numeral is 1, 2, or 3, must be taken in sequence. In sequences, the earlier courses are prerequisites to the later courses and must be successfully completed prior to enrolling in a subsequent course.

The credit indicated in connection with a course is the “quarter hour,” and one quarter hour represents one recitation period per week for one quarter or three clock hours of laboratory work.

The University will make every effort consistently to offer all courses at appropriate intervals. It does reserve the right, however, to alter the sequences or drop courses if unforeseen circumstances in class enrollments or teacher staffing so dictate. The Class Schedule should be consulted for personal planning of course loads and schedules.

The University reserves the right to withdraw temporarily any course which does not have an adequate enrollment. A course may not be offered for fewer than six students except for seniors or graduate students.

Some courses specify that they are offered odd or even years only. A school year (Autumn to Summer) is designated “odd” or “even” by the beginning year of Autumn Quarter.

## UNIFORM COURSE NUMBERS

By general agreement certain course numbers are reserved for classes that are of such a general nature as to be found in many departments. The prefix assigned to the number designates the discipline. The following are courses that carry uniform numbers throughout this bulletin:

### 001-100 REMEDIAL COURSES (1-4)

Courses for students needing to improve basic skills in preparation for university-level work. Credit will not apply toward graduation, but will apply to financial aid minimums and for deferment of educational loans.

### 100 EXPERIENTIAL PROGRAM (6; 18)

Program with qualified supervision and structured experience including Christian Service Volunteer, Task Force and Cooperative Education. Credit will not apply toward graduation or class level requirements, but will apply for deferment of educational loans. Graded S or NC.

#### 198, 398 TRANSFER CREDITS

Numbering used for the articulation of lower and upper division transfer courses that do not have a WWU equivalent, but can be used to meet general studies requirements. These numbers will be used only within the Academic Records Office.

#### 199, 399 TRANSFER CREDITS

Numbering used for the articulation of lower and upper division transfer courses that do not have a WWU equivalent, but can be used as electives in the major or minor. These numbers will be used only within the Academic Records Office.

#### 200; 400 TOPICS (1-5; 10)

Courses in specialized or experimental areas on either the lower division or advanced level. These courses are conducted through regular class activities and are approved by the Curriculum Committee as a one-time offering. See the Class Schedule for all approved topics courses.

#### 259; 459 SUPPLEMENTAL STUDIES (1-3; 3)

Previous course work supplemented when portions of a course required in the student's program have been omitted. Ordinarily supplementation will occur only with transfer students or within a program that has undergone a major curriculum change. A study proposal is to be outlined in consultation with the instructor of the course being supplemented and approved by the department and the Academic Standards Committee. May not be substituted for existing courses.

#### 274; 474 WORKSHOPS/STUDY TOURS (1-4)

Short-term, concentrated experiences which require a minimum of out-of-class assignments and are usually conducted in large blocks of time. See the Class Schedule for all approved workshop/study tour courses.

#### 280; 370; 490 DIRECTED FIELD WORK/PRACTICUM/EXPERIENCE (2-16)

#### 392 GENERAL SECONDARY METHODS COURSE (See Education) (2)

#### 394 DIRECTED READING (1-3)

Independent reading for students who wish to broaden their knowledge in a particular discipline.

#### 395; 396 DEPARTMENTAL METHODS COURSES (3)

#### 469 ADVANCED STUDY (1-3; 3)

Advanced directed study by which students may enhance the major or minor in breadth or depth in topics not covered by the department curriculum. The study proposal must be approved by the department faculty and the Academic Standards Committee and should indicate the methods of evaluation. May not be substituted for existing courses in the major or minor.

#### 478 APPLIED RESEARCH (1-3; 4)

Student will work with a departmental advisor on research activities such as literature search, preliminary experiments, data collection, data transcription, or data analysis. Graded S or NC.

#### 479 DIRECTED RESEARCH/PROJECT (1-3; 6)

Individual research, and/or laboratory work, or technical project in the major. (Some departments may allow this course on the minor.) A project proposal is required to define the scope of the work and the method of reporting. Requires permission of the department faculty with a copy of the proposal sent to the Registrar in the Academic Records office. See individual departments for specific course description.

#### 490 INTERNSHIP (0-12; 12)

Individual contract arrangement involving students, faculty, cooperative businesses and organizations to gain experience in a work environment. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. See individual departments for specific course description and Internship Program in the Nondepartmental section of the Bulletin for other details. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

#### 495 COLLOQUIUM (0)

Series of lectures, programs, discussions or other activities designed to explore specific issues in a given field of study. For each quarter that a student fails to complete the colloquium requirement as stated for the major, there will be a fee to be paid before an alternative colloquium will be approved. Graded S or NC.

#### 496; 497; 498 SEMINAR (1-4)

# ART

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Joel Libby, Chair; Matthew Pierce.

The aim of the department is to cultivate an awareness, appreciation, and understanding of the various forms of visual experience. Through instruction and practice, the students may develop their creative abilities for practical use by following a concentration in fine art or illustration. Fine art will prepare the student as a professional artist or art teacher or will provide preprofessional training in allied fields; illustration is designed to prepare the student for a career as an illustrator.

## ART MAJOR (BACHELOR OF ARTS)

A student majoring in art must complete the major core requirements, one concentration and the required cognates for that concentration, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. As a senior comprehensive, all art majors are required to:

- Hold a senior show in the Clyde and Mary Harris Gallery; the show is to be completed with the approval and coordination of the art faculty.
- Submit a digital portfolio of their work.
- Submit a completed departmental exit interview.
- Submit a 5-page artist's statement paper.
- Complete the ACAT.

### Core Requirements:

ART 160	Materials and Methods	3
ART 181	Analysis of Form	4
ART 182	Linear Perspective	4
ART 183	Sketching	4
ART 260	Visual Composition	4
ART 324, 325, 326	History of World Art	9
ART 491	Professional Practices for Artists	<u>1</u>
		29

## FINE ART CONCENTRATION

### Required Courses:

ART 194	Still Life Painting	2
ART 264	Introduction to Sculpture	2
ART 284	Introduction to Pottery	2
ART 294	Introduction to Printmaking	2
ART 360	Advanced Visual Composition	4
	Electives (6 credits must be upper division)*	<u>21</u>
		33

\*Electives chosen from courses listed below:

ART 195	Digital Painting	2
ART 196	Mixed Media	2
ART 285, 286	Introduction to Pottery II, III	2, 2
ART 307	Anatomy for Artists	3
ART 317	Advanced Printmaking	2; 6

ART 334	Portrait Painting	2
ART 335	Abstract and Expressive Painting	4
ART 364	Advanced Sculpture	2; 6
ART 374	Advanced Pottery and Ceramic Sculpture	2; 6
Cognates: Fine Art		
ENGL 358	Classical Literature	4
HIST 306	Classical Greece and Rome	4
HIST 121	The West and the World	4
RELH 303	World Religions	
	or	4
ENGL 313	Image and Text	
SOCI 236	Privilege and Oppression	
	or	4
PHIL 205	Introduction to Philosophy	

## ILLUSTRATION CONCENTRATION

### Required Courses:

ART 194	Still Life Painting	2
ART 195	Digital Painting	2
ART 196	Mixed Media	2
ART 294	Introduction to Printmaking	2
ART 307	Anatomy for Artists	3
ART 334	Portrait Painting	2
ART 335	Abstract and Expressive Painting	4
ILL 244	Introduction to Illustration	4
ILL 245	Children's Book Illustration	4
ILL 246	Sequential Art	4
ILL 354	Animal and Creature Design	<u>4</u>
		33

### Cognates: Illustration

FLTV 135	Introduction to Filmmaking	4
GRPH 136	Digital Imaging I	4
GRPH 262	Computer Illustration	4
HIST 121	The West and the World	4
PHTO 156	Principles of Photography	3

ART MINOR

A student minoring in art must complete 33 quarter hours:

ART 160	Materials and Methods	3
ART 181	Analysis of Form	4
ART 260	Visual Composition	4
ART 324, 325, 326	History of World Art	9
	*Electives	<u>13</u>
		33

\*Approval of art advisor required.

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the Art Department: ART, ILL.



## BIOLOGICAL SCIENCES

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David Lindsey, Chair; Cecilia Brothers, David Cowles, Scott Ligman, Jim Nestler, Kirt Onthank, Joan Redd.

The objectives of the department are to develop an understanding of the principles of biology that will better acquaint students with the world in which they live; to create an atmosphere conducive to individual investigation; to prepare department majors for graduate and professional education, teaching, and certain careers in the biological sciences.

The department offers a Bachelor of Science degree with a major in biology, and jointly with the departments of chemistry, engineering, and physics, a Bachelor of Science degree with majors in biochemistry, bioengineering, and biophysics respectively. A minor in biology is also available. Students have exceptional opportunities for study in the biological sciences during the summer at the Rosario Beach Marine Laboratory, adjoining Deception Pass State Park, Anacortes, Washington. For further information, visit the Rosario website at [rosario.wallawalla.edu](http://rosario.wallawalla.edu).

For a description of the graduate program leading to the Master of Science degree in biology, see the Graduate Bulletin.

### BIOLOGY MAJOR (BACHELOR OF SCIENCE)

A student majoring in biology must complete 63 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. One summer term (10 credits) at the WWU Rosario Beach Marine Laboratory is required during which at least one upper-division, marine-oriented course must be taken. Senior students are required to take the Major Field Test (MFT) examination in biology.

#### Major Requirements:

BIOL 141, 142, 143	General Biology	12
BIOL 216	Introduction to Biological Research I	3
BIOL 250	Biostatistics	4
BIOL 305	General Ecology	4
BIOL 326	Journal Club	1
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 483	Philosophy of Origins and Speciation	3
BIOL 495	Colloquium (6 quarters required)	0
BIOL 496	Senior Seminar	2
	Electives	<u>26</u>
		63

Ten upper-division credits are required to be taken at the WWU Rosario Beach Marine Laboratory during one summer term.

#### Cognates:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3



BIOLOGICAL SCIENCES

CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
MATH 117	Accelerated Precalculus	5
	or	
MATH 121, 122	Precalculus I, II	8
	or	
MATH 131, 132	Calculus for the Life Sciences I, II	8
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3

BIOCHEMISTRY MAJOR (BACHELOR OF SCIENCE)

The biochemistry major is a joint program offered by the Department of Biological Sciences and the Department of Chemistry. See the Interdisciplinary Programs section (p. 172) of this bulletin.

BIOENGINEERING MAJOR (BACHELOR OF SCIENCE)

The bioengineering major is a joint program offered by the Department of Biological Sciences and the School of Engineering. See the Interdisciplinary Programs section (p. 173) of this bulletin.

BIOPHYSICS MAJOR (BACHELOR OF SCIENCE)

The biophysics major is a joint program offered by the Department of Biological Sciences and the Department of Physics. See the Interdisciplinary Programs section (p. 175) of this bulletin.

BIOLOGY MINOR

A student minoring in biology must complete a minimum of 27 quarter hours.

Required Courses:

BIOL 141, 142, 143	General Biology	12
	*Biology Electives (at least 8 credits must be upper division)	<u>15</u>
		27

\*Approval of biology advisor required.

**See page 234 for a list of course descriptions.** Look for courses with the following prefix for the Biology Department: BIOL.

# SCHOOL OF BUSINESS

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Patience Taruwinga, Dean; Johanna Attoh, Conna Bond, Andrew Dressler, Mihail Motzev, George Perez, Bruce Toews.

Within the context of Walla Walla University's mission, the School of Business provides a high-quality business education that prepares graduates for successful careers and advanced studies. The learning environment fosters teamwork, leadership skills, ethical conduct, character development, and a spirit of service consistent with Christian values.

The Bachelor of Business Administration, Bachelor of Science in Business Administration, and Bachelor of Arts degrees are accredited by the Accreditation Council for Business Schools and Programs (ACBSP), a leading international accreditation association for business schools with a focus on mission-based standards, including teaching excellence.

## Degrees Offered

**Bachelor of Business Administration (BBA)** is a professional degree designed for students planning to enter the job market or graduate programs. Concentrations include accounting, entrepreneurship and small business management, finance, management, and marketing. No minor is required.

**Bachelor of Arts (BA)** in Business Administration is available to students who wish a broader liberal arts preparation than that provided by the BBA. A minor in an area distinct from the major and foreign language study are required.

**Bachelor of Science (BS)** in Business Administration provides more flexibility than is provided by a BBA degree. This degree serves students who plan to enter graduate school, medical school, dental school, law school, etc. or who desire broad flexibility. No minor is required.

**Bachelor of Science (BS)** in Global Development prepares students for opportunities in the business operations of development agencies, including accounting, finance, marketing, human resources, fundraising, and other related areas. While interdisciplinary in nature, this program offers a strong business component that will qualify graduates for domestic business related careers as well. No minor is required.

**Bachelor of Science (BS)** in Automotive Management, jointly offered with the Department of Technology, combines automotive technology and business to prepare students for managing automotive businesses. No minor is required.

**Bachelor of Science (BS)** in Aviation Management, jointly offered with the Department of Technology, combines aviation technology and business to prepare students for managing aviation businesses. No minor is required.

**Bachelor of Science (BS)** in Information Systems, jointly offered with the Department of Computer Science, combines computer technology and business to prepare students for positions as programmers, systems analysts, network administrators, and other careers in information systems. No minor is required.

**Associate of Science (AS)** in Business provides students an opportunity to gain the basic knowledge and skills required for initial job placement.

Minors are available in business administration, economics, global development, marketing, and preparation for graduate studies in business.

SCHOOL OF BUSINESS

Students planning on graduate study should check the specific graduate school admission requirements. Graduate programs may have admission requirements in addition to a WWU baccalaureate degree in business.

BACHELOR OF BUSINESS ADMINISTRATION (BBA)

Students seeking the BBA degree must complete 68 quarter hours of core requirements and a minimum 36-quarter hour concentration. In addition, students must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test in Business.

A maximum of 12 credit hours applied to one concentration may also be applied to a second concentration.

BACHELOR OF BUSINESS ADMINISTRATION CORE AND COGNATE REQUIREMENTS:

Core Requirements:

Lower Division Courses:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
GBUS 161	Business Basics	2
GBUS 263	Business Statistics	4

Upper Division Courses:

CIS 301	Information Systems and Business Intelligence	4
FINA 351	Managerial Finance	4
GBUS 361, 362	Business Law I, II	8
GBUS 366	Operations Management	4
GBUS 370	Business Communication	4
GBUS 463	Business Ethics	4
GBUS 495	Colloquium*	0
MGMT 371	Principles of Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	4
		68

\*Twelve quarters required or number of quarters in residence as a declared business major at WWU, whichever is less.

Cognates:

Choose one of the following MATH courses (4-5 credits):

MATH 117	Accelerated Precalculus	5
MATH 121	Precalculus I	4
MATH 131	Calculus for the Life Sciences	4

MATH 181	Calculus I	4
Choose one of the following social science courses (4 credits):		
PSYC 130	General Psychology	4
SOCI 204	General Sociology	4
Choose one of the following SPCH courses (3-4 credits):		
SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3

## ACCOUNTING CONCENTRATION (BBA)

### Required Courses:

ACCT 321, 322, 323	Intermediate Accounting	11
ACCT 331	Managerial Cost Accounting	4
ACCT 335	Personal Income Tax	4
ACCT 430	Auditing	5
ACCT 490	Internship*	0-4

### Select 12 credits from the following:

ACCT 341	Accounting Information Systems	4
ACCT 350	Not-for-Profit and Government Accounting	4
ACCT 421	Advanced Accounting	4
ACCT 435	Business Taxation	4
		<u>4</u>
		36-40

\*Or any of the following: CIS 490, FINA 490, GBUS 490, LAW 490, MGMT 490, and MKTG 490.

## CERTIFIED PUBLIC ACCOUNTANT EXAMINATION

In most states, 225 quarter (150 semester) hours are required to write the Uniform CPA Examination. The effect of this requirement is to add 33 quarter hours above the Walla Walla University degree of 192 quarter hours. The specific education requirements to write the CPA Examination differ from state to state, so careful planning is needed to ensure that the requirements are fully met. You may generally satisfy the 225-hour requirement by completing a BBA degree with an accounting concentration and one of the following:

- Various courses such as accounting, finance, writing, etc.
- A second BBA concentration
- Graduate study in accountancy, taxation, computer information systems, business administration, etc.

## ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT CONCENTRATION (BBA)

### Required Courses:

ACCT 321	Intermediate Accounting	3
ACCT 335	Personal Income Tax	4
ACCT 341	Accounting Information Systems	4
GBUS 490	Internship*	0-4
MGMT 373	Organizational Behavior (or PSYC 373)	4

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MGMT 375	Entrepreneurship and Small Business Management	4
MGMT 376	Human Resource Management	4
	Business Electives†	<u>9-13</u>
		36

\*Or any of the following: ACCT 490, CIS 490, FINA 490, LAW 490, MGMT 490, and MKTG 490.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

### FINANCE CONCENTRATION (BBA)

Required Courses:

ACCT 321, 322	Intermediate Accounting	7
FINA 441	Financial Markets and Institutions	4
FINA 451	Investments	4
FINA 488	International Trade and Finance	4
FINA 490	Internship*	0-4
FINA	Upper-Division Finance Electives	8
ACCT	Upper-Division Accounting Electives	4
	Business Electives†	<u>1-5</u>
		36

\*Or any of the following: ACCT 490, CIS 490, GBUS 490, LAW 490, MGMT 490, and MKTG 490.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

### MANAGEMENT CONCENTRATION (BBA)

Required Courses:

MGMT 373	Organizational Behavior (or PSYC 373)	4
MGMT 375	Entrepreneurship & Small Business (or MKTG 375)	4
MGMT 376	Human Resources Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
MGMT 476	Foundations of Leadership	4
MGMT 488	Global Management and Marketing (or MKTG 488)	4
MGMT 490	Internship*	0-4
	Business Electives†	<u>8-12</u>
		36

\*Or any of the following: ACCT 490, CIS 490, FINA 490, GBUS 490, LAW 490, and MKTG 490.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG

### MARKETING CONCENTRATION (BBA)

Required Courses:

MKTG 383	Principles of Advertising	4
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MKTG 384	Consumer Behavior	4
MKTG 451	Market Research Methods	4
MKTG 490	Internship*	0-4
	MKTG Electives	8
	Business Electives†	4
	Electives‡	<u>8-12</u>
		36

\*Or any of the following: ACCT 490, CIS 490, FINA 490, GBUS 490, LAW 490, and MGMT 490.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

‡Electives must be approved by the School of Business advisor and may be chosen from business, communication, art, psychology, and graphic art courses.

The following are recommended:

ART 161, ART 244, ART 251, CIS/CPTR 220, COMM 145, FINA 460, FLTV 135, GRPH 124, GRPH 136, GRPH 255, GRPH 263, GRPH 272, JOUR 245, JOUR 247, JOUR 345, JOUR 451, MATH 215, MGMT 380, PHTO 156, PREL 350, PSYC 344, SPCH 443, SPCH 207, WRIT 324.

## BUSINESS ADMINISTRATION MAJOR (BACHELOR OF ARTS)

A student majoring in business administration must complete 62 quarter hours in the major, the required cognates, a minor in an area distinct from the major, the general studies program, which includes a foreign language, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test in Business.

### Core Requirements:

#### Lower Division Courses:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
GBUS 161	Business Basics	2
GBUS 263	Business Statistics	4

#### Upper Division Courses:

FINA 351	Managerial Finance	4
GBUS 361	Business Law I	4
GBUS 370	Business Communication	4
GBUS 463	Business Ethics	4
GBUS 490	Internship*	0-4
GBUS 495	Colloquium†	0

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MGMT 371	Principles of Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	4
	Business Electives‡	<u>2-6</u>
		62

\*Or any of the following: ACCT 490, CIS 490, FINA 490, LAW 490, MGMT 490, and MKTG 490.

†Twelve quarters required or number of quarters in residence as a declared business major at WWU, whichever is less.

‡Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

Cognates:

Choose one of the following MATH courses (4-5 credits):

MATH 117	Accelerated Precalculus	5
MATH 121	Precalculus I	4
MATH 131	Calculus for the Life Sciences	4
MATH 181	Calculus I	4

Choose one of the following social science courses (4 credits):

PSYC 130	General Psychology	4
SOCI 204	General Sociology	4

Choose one of the following SPCH courses (3-4 credits):

SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3

BUSINESS ADMINISTRATION MAJOR  
(BACHELOR OF SCIENCE)

A student majoring in business administration must complete 76 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test in Business.

Core Requirements:

Lower Division Courses:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
GBUS 161	Business Basics	2
GBUS 263	Business Statistics	4

Upper Division Courses:

FINA 351	Managerial Finance	4
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GBUS 361	Business Law I	4
GBUS 362	Business Law II	4
GBUS 366	Operations Management	4
GBUS 370	Business Communication	4
GBUS 463	Business Ethics	4
GBUS 490	Internship*	0-4
GBUS 495	Colloquium†	0
MGMT 371	Principles of Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	4
	Business Electives‡	<u>8-12</u>
		76

\*Or any of the following: ACCT 490, CIS 490, FINA 490, LAW 490, MGMT 490, and MKTG 490.

†Twelve quarters required or number of quarters in residence as a declared business major at WWU, whichever is less.

‡Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

#### Cognates:

Choose one of the following math courses (4-5 credits):

MATH 117	Accelerated Precalculus	5
MATH 121	Precalculus I	4
MATH 131	Calculus for the Life Sciences	4
MATH 181	Calculus I	4

Choose one of the following social science courses (4 credits):

PSYC 130	General Psychology	4
SOCI 204	General Sociology	4

Choose one of the following speech courses (3-4 credits):

SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3

## GLOBAL DEVELOPMENT MAJOR (BACHELOR OF SCIENCE)

A student majoring in global development must complete 88 quarter hours in the major, as well as the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test in Business.

#### Business Core Requirements:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4



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FINA 351	Managerial Finance	4
GBUS 161	Business Basics	2
GBUS 263	Business Statistics	4
GBUS 361	Business Law I	4
GBUS 370	Business Communication	4
GBUS 463	Business Ethics	4
GBUS 495	Colloquium*	0
MGMT 371	Principles of Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	<u>4</u>
		56

### Global Development Requirements:

ECON 220	Principles of Global Development	4
ECON 410	Comparative Economic Development	4
GBUS 390	Engineering in a Global Context	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
MGMT 488	Global Management & Marketing (or MKTG 488)	4
GBUS 490	Internship†	0-4
	Electives‡	<u>8-12</u>
		32

One quarter of continuous post-secondary study or work in a country other than the U.S. or Canada is required. Participation in the Christian Service Volunteer program outside the U.S./Canada may substitute, upon approval of business dean.

\*Twelve quarters required or number of quarters in residence as a declared business major at WWU, whichever is less.

†Or any of the following: ACCT 490, CIS 490, FINA 490, LAW 490, MGMT 490, and MKTG 490.

‡ Electives approved by an advisor and chosen from any course offered by the School of Business (ACCT 350 and ECON 488 recommended) or any one of the following courses: ANTH 225, COMM 145, COMM 325, ENGR 310, GCDP 405, GCDP 410, GCDP 415, GCDP 420, GCDP 425, GCDP 428, GEOG 252, HLTH 308, HLTH 437, LANG 406, SOCI 204, or SOCI 236.

### Cognates:

Choose one of the following MATH courses (4-5 credits)

MATH 117	Accelerated Precalculus	5
MATH 121	Precalculus I	4
MATH 131	Calculus for Life	4
MATH 181	Calculus I	4
RELH 303	World Religions	4
	or	
RELM 233	Introduction to Cross-Cultural Ministry	3

SPCH 101	Fundamentals of Speech Communication	4
	or	
SPCH 207	Small Group Communication	3
	Foreign Language*	8-12

\*12 credits of elementary level or 8 credits of intermediate level.

## AUTOMOTIVE MANAGEMENT MAJOR (BACHELOR OF SCIENCE)

The automotive management major is a joint program offered by the School of Business and the Department of Technology. See the Interdisciplinary Programs section (p. 168) of this bulletin.

## AVIATION MANAGEMENT MAJOR (BACHELOR OF SCIENCE)

The aviation management major is a joint program offered by the School of Business and the Department of Technology. See the Interdisciplinary Programs section (p. 168) of this bulletin.

## INFORMATION SYSTEMS MAJOR (BACHELOR OF SCIENCE)

The information systems major is a joint program offered by the School of Business and the Department of Computer Science. See the Interdisciplinary Programs section (p. 168) of this bulletin.

## BUSINESS (ASSOCIATE OF SCIENCE)

A student specializing in business must complete 46 quarter hours in business, the required cognates, the general studies program, and all associate degree requirements as outlined in this bulletin.

### Core:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
FINA 101	Personal Finance	2
GBUS 161	Business Basics	2
GBUS 361	Business Law I	4
GBUS 495	Colloquium*	0
MGMT Elective	(MGMT 371 Recommended)	4
MKTG Elective	(MKTG 381 Recommended)	4
	Business Electives†	<u>8</u>
		46

SCHOOL OF BUSINESS

\*Six quarters required or number of quarters in residence as a declared business degree candidate at WWU, whichever is less.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

Cognates:

Choose one of the following MATH courses (4-5 credits):

MATH 105	Finite Mathematics	4
MATH 117	Accelerated Precalculus	5
MATH 121	Precalculus I	4
MATH 131	Calculus for the Life Sciences	4

BUSINESS ADMINISTRATION MINOR

Required Courses:

ACCT 201	Principles of Accounting	4
ECON	Economics Elective	4
FINA 101	Personal Finance	
	or	2
GBUS 161	Business Basics	
MGMT	Management Elective	4
MKGT	Marketing Elective	4
	Business Electives* (4 must be upper division)	<u>12</u>
		30

\*Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

ECONOMICS MINOR

Required Courses:

ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
ECON/FINA	Economics/Finance Electives	16
	Business Electives*	<u>6</u>
		30

\*Business electives may be chosen from courses with prefixes ACCT, CIS, GBUS, MGMT, or MKTG.

GLOBAL DEVELOPMENT MINOR

Required Courses:

ECON 211	Principles of Macroeconomics	4
ECON 220	Principles of Global Development	4
ECON 410	Comparative Economic Development	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
MGMT 488	Global Management and Marketing (or MKTG 380)	4

*Electives	<u>10</u>
	30

\* Electives approved by an advisor and chosen from any course offered by the School of Business (ACCT 350 and ECON 488 recommended) or any one of the following courses: ANTH 225, COMM 145, COMM 325, ENGR 310, GCDP 405, GCDP 410, GCDP 415, GCDP 420, GCDP 425, GCDP 428, GEOG 252, HLTH 308, HLTH 437, LANG 406, SOCI 204, or SOCI 236.

## MARKETING MINOR

### Required Courses:

GBUS 161	Business Basics	
	or	2
FINA 101	Personal Finance	
MKTG 381	Principles of Marketing	4
MKTG 383	Principles of Advertising	4
MKTG 384	Consumer Behavior	4
MKTG	Marketing Electives	4
	Electives (8 credits must be business*)	<u>12</u>
		30

\*Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG. Other electives may be chosen from business, communication, art, psychology, and graphic art courses. Approval of the business advisor required.

## PREPARATION FOR GRADUATE STUDIES IN BUSINESS MINOR

For non-business majors interested in pursuing graduate studies in business, the School of Business recommends the curriculum below based on the most common prerequisites. However, graduate programs have a wide variety of prerequisites, so it is incumbent on the student to research individual programs. Pay particular attention to the math requirements, because some programs have a calculus prerequisite.

### Required Courses:

ACCT 201, 202, 203	Principles of Accounting	10
ECON 210	Principles of Macroeconomics	4
ECON 211	Principles of Microeconomics	4
	Business electives*	<u>12</u>
	Total	30

\*Business electives must be chosen from:

FINA 351	Managerial Finance	4
GBUS 263	Business Statistics	4
GBUS 361	Business Law I	4
GBUS 366	Operations Management	4

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MGMT 371	Principles of Management	4
MGMT 373	Organizational Behavior (or PSYC 373)	4
MKTG 381	Principles of Marketing	4
Recommended Course:		
MATH 181	Calculus I	4

BOOKKEEPING CERTIFICATE (22 CREDITS)

Students seeking this certificate will be prepared to do bookkeeping and payroll for small businesses. The certificate is open to both degree-seeking and non-degree-seeking students\*.

Requirements:

1. Complete the following courses with a minimum grade of C-:

ACCT 201, 202 <sup>†</sup> , 203 <sup>†</sup>	Principles of Accounting	10
ACCT 335	Personal Income Tax	4
ACCT 341 <sup>†</sup>	Accounting Information Systems	4
CIS 140	Business Analytics with Excel and Access	<u>4</u>
		22
2. Pass a departmental comprehensive examination with a minimum score of 75%.

\* Non-degree-seeking students enrolled in the certificate program must meet the admission requirements for Walla Walla University and should refer to the Financial Bulletin for reduced tuition information.

<sup>†</sup>Indicates prerequisites exists. See Bulletin for details

BUSINESS ANALYTICS CERTIFICATE (20 CREDITS)

Students seeking this certificate will gain a practical understanding of how to use the business analytics process to harness the power of big data to gain actionable business insights. The certificate is open to degree-seeking students. Financial aid packages are available for degree-seeking students who qualify.

Requirements:

- Complete the following courses with a minimum GPA of 3.7 (for these courses):
- |               |  |          |
|---------------|--|----------|
| CIS 140       | Business Analytics with Excel and Access       | 4        |
| CIS 301       | Information Systems and Business Intelligence* |          |
|               | or   | 4        |
| ACCT 341      | Accounting Information Systems*                |          |
| GBUS 263      | Business Statistics*                           | 4        |
| GBUS 366      | Operations Management*                         | 4        |
| FINA/ECON 460 | Business Forecasting and Predictive Analysis*  | <u>4</u> |
|               |  | 20       |

\*Indicates prerequisites exist. See bulletin for details.

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the School of Business: ACCT, CIS, ECON, FINA, GBUS, MGMT, and MKTG.

# CHEMISTRY

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Kyle Craig, Chair; Joseph Brannaka, Frank Fabian, Nerissa Lewis.

The department seeks to introduce students to a basic science in a Christian environment and to acquaint majors with the principal chemical disciplines: analytical, biochemistry, inorganic, organic, and physical. Majors are encouraged to conduct original investigation as preparation for graduate and professional education and for careers in teaching and the chemical sciences. The department offers programs leading to the Bachelor of Science degree.

## CHEMISTRY MAJOR (BACHELOR OF SCIENCE)

A student majoring in chemistry must complete 62-63 quarter hours in the major, the required cognates, and the general studies program for the baccalaureate degree as outlined in this bulletin. No minor is required for the Bachelor of Science degree. Senior students are required to take the Major Field Test (MFT) examination in chemistry. Transfer credit accepted towards the chemistry major must be from major's courses at the institution originating the credit.

### Required Courses:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 301	Chemical Equilibrium and Analysis	3
CHEM 302	Analytical Instrumental Methods I	4
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 350, 352, 353	Physical Chemistry	9
CHEM 383	Intermediate Organic Chemistry	3
CHEM 386	Microscale Organic Laboratory	2
CHEM 405	Integrated Chemistry Laboratory	6
CHEM 427	Organic Structure and Mechanisms	3
	or	
CHEM 442	Inorganic Chemistry	4
CHEM 431	Foundations of Biochemistry	4
CHEM 479	Directed Research/Project	3
CHEM 496, 497, 498	Chemistry Seminar	3
		<hr/> 62-63

### Cognates:

MATH 106	Introduction to Statistics	
	or	4
MATH 315	Probability and Statistics	
MATH 181, 281-283	Calculus I-IV	16
PHYS 211, 212, 213	General Physics	
PHYS 214, 215, 216	General Physics Laboratory	
	or	12
PHYS 251, 252, 253	Principles of Physics	

## CHEMISTRY

PHYS 254, 255, 256 Principles of Physics Laboratory

### BIOCHEMISTRY MAJOR (BACHELOR OF SCIENCE)

The biochemistry major is a joint program offered by the Department of Biological Sciences and the Department of Chemistry. See the Interdisciplinary Programs section (p. 168) of this bulletin.

### CHEMISTRY MINOR

A student minoring in chemistry must complete 28 quarter hours; 3 must be upper division. Transfer credit accepted towards the chemistry minor must be from major's courses at the institution originating the credit.

The following courses are required:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
	*Electives	<u>6</u>
		28

\*Approval of department chair required.

See page 234 for a list of course descriptions. Look for courses with the following prefix for the Chemistry Department: CHEM.



# COMMUNICATION AND LANGUAGES

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Linda Potter Crumley, Chair; Alma Alfaro, Lynelle Ellis, Jean-Paul Grimaud, Jerrold Hartman, Nancy Semotiuk, Deborah Silva.

Communication and Languages stimulate critical thinking and creative expression, enhance language and cultural sensitivity, and help students connect educational, career, and life goals. Students are prepared to enter careers or pursue graduate studies that use their talents to understand, speak, read, write, and communicate visually through a variety of media, becoming effective and articulate Christian communicators.

Communication study focuses on message creation, production, and dissemination—on sharing ideas that enhance community, create change, and influence audiences. Language study prepares students to engage in the language, literature, and life of other cultures. Global communication combines communication and language study to embrace expanding global opportunities in politics, business, technology and environmental issues. For students interested in treating communication disorders, we offer a program preparing students to pursue further coursework elsewhere in Speech Language Pathology and Audiology.

## Degrees Offered:

Bachelor of Science (BS) in Film, TV, and Media focuses intensely on teaching visual and audio communication. BS degrees focus more on a specific area of knowledge, and a minor is not required. Graduates often produce, direct, write, edit, and in many ways are involved in the creation of film, documentary, advertising, broadcasting, video, and other visual media. Graduates of this program are well prepared to enter the Master of Arts in Cinema, Religion, and Worldview offered by Walla Walla University or other graduate programs.

Bachelor of Arts (BA) in Strategic Communication integrates a strong core of communication study with skills in journalism, public relations, social media management, fundraising, and publishing. A minor is required. Graduates often take positions as writers, editors, fundraisers, public relations practitioners, communication specialists, or social media managers. They are prepared for graduate study.

Bachelor of Arts (BA) in Global Communication integrates knowledge of communication with a French or Spanish specialization, a minor in an area of the student's choosing, language study abroad, and an international internship to provide a solid foundation of experience in international communication. Graduates are prepared for careers as communication specialists in international and intercultural organizations such as global business, governments, non-governmental organizations (NGOs), charitable or religious organizations, foundations, media outlets, and international missions.

Bachelor of Arts (BA) in French offers a solid linguistic and multi-cultural experience, including a school year studying abroad in France and provides a strong humanities background. A minor is required. The BA in French has proven to be a valuable asset when pairing with Healthcare pre-professional programs, Business, Communication, International Development Studies, and Education.



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Bachelor of Arts (BA) in Spanish offers a solid linguistic and multi-cultural experience, with a school year spent in either Spain or Argentina and provides a valuable insight into the Hispanic and Latin-American world including the Latino community. A minor is required. Graduates may teach, translate, and interpret. The BA in Spanish has also proven to be a valuable asset when pairing with Healthcare pre-professional programs, Business, Communication, International Development Studies and Education.

Associate of Science (AS) in pre-Speech Language Pathology and Audiology prepares students for admission to Speech Language Pathology and Audiology at Loma Linda University and may also apply to other professional programs. A selective program involving sciences, general education courses, and communication-specific coursework offers graduation with an AS degree before entering BS professional training.

Minors are available in drama, film and television production, global communication, journalism, and speech, as well as in the following languages: Arabic, French, German, Italian, Portuguese, and Spanish. Most language minors include some time studying abroad.

STRATEGIC COMMUNICATION MAJOR (BACHELOR OF ARTS)

A student majoring in strategic communication must complete the major core requirements for a total of **60** hours (plus cognates), the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

Core Requirements:

COMM 145	Communication and Languages in a Global Society	4
COMM 375	Communication Theory	3
COMM 487	Senior Project	1
COMM 490	Internship (minimum 120 clock hours)	0-4
COMM 495	Communication and Languages Colloquium*	0
COMM 496, 497	Communication Research I, II	3, 1
FLTV 135	Introduction to Filmmaking	4
JOUR 148	Creativity and Communication	3
JOUR 245	Media Writing	4
JOUR 247	Copy Editing	3
JOUR 341	Feature Writing	4
JOUR 344	Technical Writing	3
JOUR 349	Social Media Strategies	3
JOUR 451	Digital Publishing	4
PREL 481	Public Relations (or MTKG 481)	4
SPCH 101	Fundamentals of Speech Communication	4
	Electives	<u>12</u>
		60-64

\*Six colloquia required.

*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair and must be chosen from COMM, DRMA, FLTV, JOUR, PREL, SPCH, LANG, and either MKTG 381 OR MKTG 383. Six hours of electives must be PREL or JOUR writing classes.*

Cognates

GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
PHTO 156	Principles of Photography	
	or	3
PHTO 255	Film Photography	

## GLOBAL COMMUNICATION MAJOR (BACHELOR OF ARTS)

A student majoring in global communication must complete the major core requirements and one emphasis for a total of 72 hours (plus cognates), the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

Core Requirements:

COMM 145	Communication and Languages in a Global Society	4
COMM 325	Multicultural Communication	3
COMM 357	Media Law	4
COMM 375	Communication Theory	3
COMM 487	Senior Project	1
COMM 495	Communication and Languages Colloquium*	0
COMM 496, 497	Communication Research I, II	3, 1
JOUR 245	Media Writing	4
LANG 406	Language and Culture	4
LANG 490	Internship†	0-4
PREL 481	Public Relations (or MKTG 481)	4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 310	Interpersonal and Nonverbal Communication	3
SPCH 453	Rhetoric of Western Thought	4
	Electives	<u>10</u>
		52-56

\*Four colloquia required.

†This is an international internship to be completed in a country where the language of emphasis is spoken. Additional coursework required if completed in the United States.

Electives may be chosen from:

DRMA 242	Acting	4
FLTV 135	Introduction to Filmmaking	4
JOUR 257	Introduction to Photojournalism	3
JOUR 345	Specialized Writing: Advertising	3

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JOUR 349	Social Media Strategies	3
MKTG 488	Global Management and Marketing (or MGMT 488)*	4
PREL 333	Strategies for Fundraising (or MTKG 333)	4
PREL 350	Writing for Public Relations	3
SOCI 420	Immigration and Identity	4
SPCH 207	Small Group Communication	3
SPCH 407	Advanced Small Group Communication	3

\*Prerequisite is MGMT 371.

Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair. Writing courses should be from JOUR unless otherwise designated.

Cognates:

ANTH 225	Cultural Anthropology	
	or	4
SOCI 236	Privilege and Oppression	
RELH 303	World Religions	<u>4</u>
		8

EMPHASES

Each emphasis requires 20 upper division language credit hours; 1 quarter (minimum) must be taken abroad. Additional study abroad is recommended to enhance language ability and cultural understanding. Consult with a language faculty advisor prior to planning study abroad.

FRANCOPHONE EMPHASIS

	Upper division language electives completed abroad	16
Select one of the following courses (4 credits):		
FREN 394	French Directed Reading	1-2
FREN 409	French Culture and Civilization	4
FREN 410	Francophone Culture and Civilization	<u>4</u>
		20

HISPANIC EMPHASIS

	Upper division language electives completed abroad	16
Select one of the following courses (4 credits):		
SPAN 394	Spanish Directed Reading	1-2
SPAN 409	Spanish Culture and Civilization	4
SPAN 410	Latin American Cultures	<u>4</u>
		20

## FILM, TV, AND MEDIA MAJOR (BACHELOR OF SCIENCE)

A student majoring in film, TV, and media must complete the major core requirements for a total of **81** hours (plus cognates), the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

### Core Courses:

COMM 145	Communication and Languages in a Global Society	4
COMM 357	Media Law	4
COMM 375	Communication Theory	3
COMM 495	Communication and Languages Colloquium*	0
DRMA 242	Acting	4
DRMA 364, 365	Directing I, II	6
FLTV 135	Introduction to Filmmaking	4
FLTV 201	Preproduction	1
FLTV 202	Screen Writing	3
FLTV 203	Production and Cinematography	3
FLTV 222	Audio Production I	2
FLTV 304	Video Editing and Compositing	4
FLTV 320	Live Video Production and Streaming	3
FLTV 333	Audio Production II	4
FLTV 410	Video Animation and Effects	2
FLTV 412	Documentary Film	4
FLTV 435	Advanced Filmmaking	2
FLTV 487	Senior Project	1
FLTV 490	Internship (minimum 120 hours)	0-4
JOUR 148	Creativity and Communication	3
JOUR 245	Media Writing	4
SPCH 101	Fundamentals of Speech Communication	4
	Electives	<u>16</u>
		81-85

\*Six colloquia required.

Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair and must be selected from the following: any COMM, DRMA, FLTV, FREN, GRMN, JOUR, LANG, LATN, PREL, SPAN, or SPCH; classes at the Los Angeles Film Studies Center\*; or from the following:

ART 160	Materials and Methods	3
ART 181	Analysis of Form	4
ART 182	Linear Perspective	4
ART 183	Sketching	4
ART 195	Digital Printing	2
ART 196	Mixed Media	2

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ART 264	Introduction to Sculpture	2
ART 307	Anatomy for Artists	3
ART 360	Advanced Visual Composition	4
DSGN 110, 111	Design Principles I, II	4, 4
DSGN 121	Fundamentals of CAD	2
DSGN 312	Design Strategies and Methodologies	4
FILM 318	Film Studies	4
GRPH 255	Graphic Design and Layout	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design I	3
GRPH 272	Typography	3
GRPH 336	Digital Imaging II	4
GRPH 355	Advanced Document Design	4
GRPH 366	Multimedia Publishing	4
GRPH 463	Web Publishing	4
ILL 244	Introduction to Illustration	4
MGMT 371	Principles of Management	4
MGMT 373	Organizational Behavior (or PSYC 373)	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
MKTG 375	Entrepreneurship and Small Business Management (or MGMT 375)	4
MKTG 381	Principles of Marketing	4
MKTG 383	Principles of Advertising	4
MKTG 384	Consumer Behavior	4
MKTG 486	Marketing for Not-For-Profits	2
MKTG 488	Global Management and Marketing (or MGMT 488)	4
PHTO 255	Film Photography	3
PHTO 256	Intermediate Digital Photography	3
PHTO 356	Advanced Digital Photography	4

\*Petitions will be considered to count a semester at the Los Angeles Film Studies Center (a study program within the Council for Christian Colleges and Universities) for up to 24 elective credits.

### Cognates

GRPH 136	Digital Imaging I	4
PHTO 156	Principles of Photography	3
FILM 318	Film Studies	4
ART 260	Principles of Visual Composition	4
	or	
GRPH 124	Introduction to Design	4

## LANGUAGES

The ability to communicate in a foreign language and the acquaintance with a foreign culture should be part of the background of educated persons, particularly those with a sense of world mission. The objective of the department is to develop competence and proficiency in the ability to understand, speak, read, and write a foreign language and to provide a deepened understanding and appreciation of the literature and culture of other people. With the expansion of the world trade as a core component of globalization, new horizons are opening up in geopolitics, environmental issues, technology, and culture. Strong language and cross-cultural skills give students of language and culture a powerful advantage for meeting the opportunities this changing world offers.

Walla Walla University is a member of the Adventist Colleges Abroad (ACA) consortium. Foreign language majors are required to spend one year (three quarters) in a study abroad program, typically the sophomore or junior year. Academic credit will be granted for these studies so that a student may be able to complete a full college year abroad. Prospective ACA students must have completed one year of college French, German, or Spanish or the equivalent with a grade-point average of 3.00. Most language minors are required to spend a minimum of one quarter of study abroad at the intermediate level. Applicants should consult with their major professors, the Department of Communication and Languages, and the Registrar prior to enrollment.

A student planning to teach should confer with their assigned academic advisor and with the School of Education and Psychology in regard to certification and teaching credentials.

## FRENCH STUDIES MAJOR (BACHELOR OF ARTS)

A student majoring in French Studies must complete 47-48 quarter hours beyond French 201, the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin. All French majors are required to study abroad for at least one school year in an Adventist Colleges Abroad program in a French-speaking country.

All students must complete a minimum of twelve hours of upper-division French courses at Walla Walla University after their year abroad. All majors are required to pass the departmental comprehensive examination.

Required Courses (taken at the WWU Campus):

COMM 145	Communication and Languages in a Global Society	4
	or	
LANG 205	Introduction to Natural Language	3
COMM 495	Communication and Languages Colloquium*	0
FREN 405	French Literature Analysis	4
LANG 406	Language and Culture	3
	*Electives (21 must be upper-division; may be taken at ACA French campus)	29

\*Three colloquia required.

Select eight credits from the following courses:

FREN 407	Survey of French and Francophone Literature	4
FREN 408	Contemporary French and Francophone Literature	4

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FREN 409	French Culture and Civilization	4
FREN 410	Francophone Culture and Civilization	4
FREN 496	Seminar in French (Focused on either culture or literature)	<u>14</u>
		47-48

\*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair.

### Cognates:

LANG 395	Methods of Teaching Languages	
	or	3
SPCH 453	Rhetoric of Western Thought	
ANTH 225	Cultural Anthropology	
	or	4
SOCI 236	Privilege and Oppression	

## SECONDARY ENDORSEMENT: PREPARATION FOR SECONDARY TEACHING IN FRENCH

LANG 205	Introduction to Natural Language as a Second Language	3
LANG 395	Methods of Teaching Languages	3
LANG 406	Language and Culture	3

Select 8 credits from the courses below. One course (4 credits) must be from literature; one course (4 credits) must be from culture.

FREN-407	Survey of French Literature	4
FREN-408	Contemporary French and Francophone Literature	4
FREN-409	French Culture and Civilization	4
FREN-410	Francophone Culture and Civilization	4
FREN-496	Seminar in French	<u>14;4</u>
	Total	17

## SPANISH STUDIES MAJOR (BACHELOR OF ARTS)

A student majoring in Spanish Studies must complete 47-48 quarter hours beyond Spanish 201, the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin. All Spanish majors are required to study abroad for at least one school year in an Adventist Colleges Abroad program in a Spanish-speaking country.

All students must complete a minimum of twelve hours of upper-division Spanish courses at Walla Walla University after their year abroad. All majors are required to pass the departmental comprehensive examination.

### Required Courses (taken at the WWU Campus):

COMM 145	Communication and Languages in a Global Society	4
	or	
LANG 205	Introduction to Natural Language	3
COMM 495	Communication and Languages Colloquium*	0
LANG 406	Language and Culture	3
SPAN 405	Spanish Literature Analysis	4
	*Electives (21 must be upper-division; may be taken at ACA Spanish-speaking campus)	29

\*Three colloquia required.

Select eight credits from the following courses:

SPAN 330	Spanish for Professionals	4
SPAN 407	Survey of Spanish and Latin American Literature	4
SPAN 408	Contemporary Latino Literature	4
SPAN 409	Spanish Culture and Civilization	4
SPAN 410	Latin American Culture and Civilization	4
		<u>47-48</u>

\*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair.

Cognates:

LANG 395	Methods of Teaching Languages	3
	or	
SPCH 453	Rhetoric of Western Thought	
ANTH 225	Cultural Anthropology	4
	or	
SOCI 236	Privilege and Oppression	

#### SECONDARY ENDORSEMENT: PREPARATION FOR SECONDARY TEACHING IN SPANISH

LANG 205	Introduction to Natural Language	3
LANG 395	Methods of Teaching Languages	3
LANG 406	Language and Culture	3

Choose 8 credits from the courses below.

SPAN 330	Spanish for Professionals	4
SPAN 407	Survey of Spanish and Latin American Literature	4
SPAN 408	Contemporary Latino Literature	4
SPAN 409	Spanish Culture and Civilization	4
SPAN 410	Latin-American Culture and Civilization	4
Total		<u>17</u>

#### PRE-SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY (ASSOCIATE OF SCIENCE)

Students completing the following core curriculum and the AS general studies requirements will be awarded an AS degree in Pre-Speech-Language Pathology and Audiology. This degree will prepare the student for admission to Speech-Language Pathology and Audiology at Loma Linda University and may also apply to other professional programs. A cumulative grade point average of 3.0 is required before entering B.S. professional training.

Required Courses:

BIOL 121	Anatomy and Physiology	4
	or	
BIOL 141	General Biology	
CHEM 105	Survey of Chemistry (5)	4 or 5
	Or	
PHYS 201	Conceptual Physics (4)	



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COMM 495	Communication and Languages Colloquium*	0
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
HLTH 110	Wellness for Living (3)	
	or	3 or 4
HLTH 220	Human Nutrition (4)	
MATH 106	Introduction to Statistics†	4
PEAC	Any PEAC activity courses	2
PSYC 130	General Psychology	4
PSYC 215	Developmental Psychology	4
REL	Religion General Studies Courses	4-16
	(At least 4 must be RELB)	
SPCH 101	Fundamentals of Speech Communication	4
SPPA 107	Voice and Articulation	4
SPPA 210	Survey of Speech-Language Pathology and Audiology	3
	Electives	
	Any other transferable courses needed to bring total up to 96 credits. (SPCH 310 Interpersonal and Nonverbal Communication, recommended.)	
	Humanities Electives	12-20
	Select from at least 3 from the following content areas: history, fine arts, literature, modern language, drama, or philosophy.	
	Social Science Elective	4
	Select from anthropology, economics, geography, political science, psychology, and sociology.	
		<u>96</u>

\*Three colloquia required.

†Prerequisite: MDEV 003 or satisfactory departmental placement.

Note: Most professional programs do not accept course grades below C. Please consult with your academic advisor concerning any course with a grade below C.

DRAMA MINOR

A student minoring in drama must complete 30 quarter hours.

Required Courses:

DRMA 242	Acting	4
DRMA 252	Performance	2
DRMA 253	Technical Production	2
DRMA 363	History of Theatre	4
DRMA 364, 365	Directing I, II	6
DRMA 442	Advanced Acting:	4
	Electives (4 hours must be upper division)*	<u>8</u>
		30

\*A minimum of 2 hours required for DRMA 252 and DRMA 253. Additional hours may apply as electives.

Electives must be chosen from the following:

DRMA 211	Oral Interpretation	4
DRMA 260/460	Professional Theatre Conference Participation	1; 2
DRMA 336	Drama Writing	3
DRMA 394	Directed Drama Reading	1-2; 3
DRMA 445	Directed Drama Writing	1-3
DRMA 452	Advanced Performance	0-2; 4
ENGL 358	Classical Literature	4
ENGL 360	Shakespeare at Ashland	2
FILM 215	Introduction to Film Literature	4
FLTV 202	Screen Writing	3
FLTV 320	Live Video Production and Streaming	3
SPCH 107	Voice and Articulation	4

Approval of drama advisor required.

## FILM AND TELEVISION PRODUCTION MINOR

A student minoring in film and television production must complete 30 quarter hours.

Required Courses:

DRMA 364, 365	Directing I, II	6
FLTV 135	Introduction to Filmmaking	4
FLTV 201	Preproduction	1
FLTV 202	Screen Writing	3
FLTV 203	Production and Cinematography	3
FLTV 304	Video Editing and Compositing	4
	*Electives	<u>9</u>
		30

\*Electives must be chosen from COMM, DRMA, FLTV, JOUR, PREL, SPCH, or FILM. Approval of film and television production advisor required.

## GLOBAL COMMUNICATION MINOR

A student minoring in global communication must complete 30 quarter hours. A minimum of one quarter of study must be taken abroad at an Adventist College Abroad affiliate school.

Required Courses: (taken at WWU campus)

COMM 145	Communication and Languages in a Global Society	4
COMM 325	Multicultural Communication	3
LANG 406	Language and Culture	3
	Electives (may be taken at an ACA school abroad)*	<u>20</u>
		30

\*Electives must be chosen from COMM, DRMA, FLTV, JOUR, LANG, PREL, SPCH, FREN, GRMN, LATN, SPAN, any ACA Language, MKTG 375, 381, 486, 488, MGMT 371, SOCI 420. Approval of global communication advisor required.

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JOURNALISM MINOR

A student minoring in journalism must complete 30 quarter hours.

Required Courses:

JOUR 245	Media Writing	4
JOUR 247	Copy Editing	3
JOUR 341	Feature Writing	4
JOUR 346	Reporting Methods	3
JOUR 349	Social Media Strategies	3
PREL 481	Public Relations	4
	Electives (must be chosen from COMM, DRMA, FLTV, JOUR, PREL, or SPCH)	<u>9</u>
		30

Approval of journalism advisor required.

SPEECH COMMUNICATION MINOR

A student minoring in speech communication must complete 30 quarter hours:

Required Courses:

SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	
	or	3
SPCH 407	Advanced Small Group Communication	
SPCH 310	Interpersonal and Nonverbal Communication	3
SPCH 341	Argumentation	
	or	4
SPCH 443	Persuasive Speaking	
	Electives (must be chosen from COMM, DRMA, FLTV, JOUR, PREL, or SPCH; 9 must be upper division)	<u>16</u>
		30

Approval of speech communication advisor required.

FRENCH, GERMAN, OR SPANISH MINOR

A student minoring in French, German, or Spanish must complete 28 quarter hours beyond FREN 103; GRMN 103; or SPAN 103; 8 quarter hours must be upper-division. Approval of the academic advisor required.

After one year of language at the university level or two years at the high school level, language minors are required to spend a minimum of one term of study abroad at an Adventist College Abroad affiliate school. ACA courses are counted toward residency.

Required Courses: (taken at WWU Campus)

COMM 145	Communication and Languages in a Global Society	4
	or	
LANG 205	Introduction to Natural Language	3
LANG 406	Language and Culture	3
	Electives (Must include one term abroad)	<u>21-22</u>
		28

## SPANISH MINOR IN-RESIDENCE

The Spanish Minor in-residence is designed for students who wish to complete a minor on the College Place campus. A student minoring in Spanish in-residence must complete 27-29 credits hours.

Required courses:

COMM 145	Communication and Languages in a Global Society	4
	or	
LANG 205	Introduction to Natural Language	3
LANG 406	Language and Culture	3
SPAN 201, 202	Intermediate Spanish	8
SPAN 330	Spanish for Professionals	4
SPAN 490	Internship	2

Select four credits from the following courses:

SPAN 405	Spanish Literature Analysis	4
SPAN 407	Survey of Spanish and Latin American Literature	4
SPAN 408	Contemporary Latino Literature	4

Select four credits from the following courses:

SPAN 409	Spanish Culture and Civilization	4
SPAN 410	Latin-American Culture and Civilization	4
SPAN 496	Seminar in Spanish (focused on Culture or Literature)	4
		<u>14</u>

27-29

## ITALIAN, PORTUGUESE, OR ARABIC MINOR

Minors in Italian, Portuguese, and Arabic are offered through Adventist Colleges Abroad affiliate programs. Students must complete 28 quarter hours beyond the 100 level; 8 quarter hours must be upper-division. Approval of the academic advisor required.

Required Courses: (at WWU Campus)

COMM 145	Communication and Languages in a Global Society	4
	or	
LANG 205	Introduction to Natural Language	3
LANG 406	Language and Culture	3

Note: Without prior language experience, students should plan to spend an entire school year in residence at the ACA school to develop proficiency in the chosen language. All course work for a minor in these languages must be completed while in residence at the ACA school. See the ACA advisor for more information.

**See page 234 for a list of course descriptions.** Look for courses with the following prefixes for the Communication and Languages Department: COMM, DRMA, FLTV, JOUR, PREL, SPCH, SPPA, FREN, GRMN, LATN, SPAN, and LANG.

# Computer Science

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Jonathan Duncan, Chair; Larry Aamodt, Preston Carman, James Foster.

Computer science is the study of the representation, storage, and manipulation of information. The Department of Computer Science prepares its students for both graduate study and careers in computer science, system analysis and design, software engineering, and networking. The department offers programs leading to the Bachelor of Arts and Bachelor of Science degrees. The department cooperates with the School of Engineering in offering a computer engineering concentration in the Bachelor of Science in Engineering Degree. The School of Business and the Department of Computer Science jointly offer a major in information systems (B.S.).

The computer science curriculum consists of a core set of required courses that are designed to introduce the fundamental theoretical ideas of the discipline and help students develop the practical programming and software design skills necessary in the field. Department electives are organized into strands which encourage students to focus more deeply on one or more sub-fields of computer science. These strands include applied computer science, web and information management, computational science and intelligent systems, programming methods and tools, theoretical computer science, and computer architecture and organization. Students are encouraged to discuss their career goals with their academic advisors as they choose electives.

## COMPUTER SCIENCE MAJOR (BACHELOR OF ARTS)

A student majoring in computer science must complete 51 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test (MFT) in computer science.

### Required Courses:

CPTR 108	The Art and Practice of Computer Science	3
CPTR 141, 142	Fundamentals of Programming I, II	8
CPTR 242	Sequential and Parallel Data Structures and Algorithms	4
CPTR 245	Software Development	4
CPTR 280	Computer Organization and Assembly Language	3
CPTR 352	Operating Systems	4
CPTR 354	Compilers and Languages	4
CPTR 396	Internship and Career Readiness Seminar	1
CPTR 450	Software Engineering	3
CPTR 454	Design and Analysis of Algorithms	4
CPTR 496, 497, 498	Senior Project I, II, III	5
	*Electives (4 must be upper-division CPTR)	8
		51

\*Electives must be chosen in consultation with and approved by the academic advisor and will typically have one of the following prefixes: CIS, CPTR, ENGR, or MATH.

## Cognates:

MATH 131	Calculus for the Life Sciences I	
	or	4
MATH 181	Calculus I	
MATH 215	Data Analysis	4
MATH 250	Discrete Mathematics	4

## COMPUTER SCIENCE MAJOR (BACHELOR OF SCIENCE)

A student majoring in computer science must complete 62 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements outlined in this bulletin. Senior students are required to take the Major Field Test (MFT).

## Required Courses:

CPTR 108	The Art and Practice of Computer Science	3
CPTR 141, 142	Fundamentals of Programming I, II	8
CPTR 242	Sequential and Parallel Data Structures and Algorithms	4
CPTR 245	Software Development	4
CPTR 280	Computer Organization and Assembly Language	3
CPTR 352	Operating Systems	4
CPTR 354	Compilers and Languages	4
CPTR 396	Career Readiness Seminar	1
CPTR 450	Software Engineering	3
CPTR 454	Design and Analysis of Algorithms	4
CPTR 496, 497, 498	Senior Project I, II, III	5
	Electives (12 credits must be upper-division CPTR)	<u>19</u>
		62

Electives must be chosen in consultation with and approved by the academic advisor and will typically have one of the following prefixes: CIS, CPTR, ENGR, or MATH.

## Cognates:

ENGR 354	Digital Logic	3
MATH 181, 281, 282	Calculus I, II, III	12
MATH 215	Data Analysis	4
MATH 250	Discrete Mathematics	4
MATH 289	Introduction to Linear Algebra	3

## COMPUTER ENGINEERING (BACHELOR OF SCIENCE IN ENGINEERING)

See the computer engineering concentration (p. 144) in the School of Engineering section of this bulletin.

## INFORMATION SYSTEMS MAJOR (BACHELOR OF SCIENCE)

The information systems major is a joint program offered by the School of Business and the Computer Science Department. See the Interdisciplinary Programs section (p. 168) of this bulletin.

## COMPUTER SCIENCE MINOR

A student minoring in computer science must complete 30 quarter hours of CPTR courses chosen in consultation with and approved by the academic advisor. Six credits must be upper division.

Because of the unique nature of the professional curriculum of the engineering degree, any computer science course taken to meet any requirement for the BSE degree in all concentrations *except* Computer Engineering is considered a cognate and therefore can be simultaneously counted toward the credit requirements for a computer science minor.

**See page 234 for a list of course descriptions.** Look for courses with the following prefix for the Computer Science Department: CPTR.



# SCHOOL OF EDUCATION AND PSYCHOLOGY

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Debbie Mutthersbaugh, Dean; Austin Archer, Maria Bastien, Peter Gleason, Brian Hartman, Linda Ivy.

**Mission:** The School of Education and Psychology commits to teaching excellence and fostering equity and diversity, with the aim of promoting the development of Christ-like character and skills for success in all areas of life.

## Undergraduate Degrees

### Majors

- B.S. Elementary Education
- B.Ed. Secondary Education – double degree
- B.A. Psychology
- B.S. Psychology
- B.S. Forensic Psychology

### Minors

- Education
- Special Education
- Psychology

## Graduate Degrees

- Master of Education (M.Ed.)
- Master of Arts in Teaching (M.A.T.)
- Master of Initial Teaching (M.I.T.)

For a description of programs leading to a master's degree in Education, see the Graduate Bulletin.

## Accreditation:

- Northwest Association of Schools and Colleges
- Accrediting Association of Seventh-day Adventist Schools, Colleges, and Universities
- All of the University's teacher preparation programs are approved by the State of Washington Professional Educator Standards Board (PESB).

## TEACHER CERTIFICATION REQUIREMENTS

**The Teacher Certification Program** consists of required pre-candidacy courses, certification core courses, endorsement courses, cognates, and clinical practice all divided up into 3 Phases.

A minimum grade point average (GPA) of 2.75 is required in all pre-candidacy, certification, endorsement, and cognate courses that apply to these requirements. Any course graded lower than a C cannot apply. A total of two repeats are permitted in the Teacher Certification Program before the department must be consulted.

Field experiences and clinical practice require an eCertification Pre-Residency formal application, law enforcement background check, and moral character clearance. Contact the School of Education and Psychology for details.

Washington State Assessments:

- American College Testing – (ACT)-currently formally just called ACT
- Educator Teacher Performance Assessment – (edTPA)
- National Evaluation Series (NES)
- Scholastic Assessment Test (SAT)-currently formally just called SAT



- Washington Educator Skills Test-Basic (WEST-B)
- Washington Educator Skills Test-Endorsement (WEST-E)

**Washington State Assessment Instructions:**

<u>Deadline</u>	<u>Assessment</u>	<u>Requirement</u>	<u>Outcome</u>
Before / During Phase 1	WEST-B or ACT or SAT or combination	Official scores for reading, math, & writing	Apply for Phase 2
During Phase 2	WEST-E or NES	At least one attempt required	Completion of Phase 3 application and student teaching
During Phase 3	WEST-E or NES	Optional Retake(s), if necessary, with State required acceptance scores	Apply for Certification
During Phase 3	edTPA	State required acceptance scores	Apply for Certification

If a candidate does not pass the WEST-E/NES, after attempting twice, and/or the current Washington State Assessment (i.e. current edTPA), he/she may submit a signed statement of understanding (available from certification officer) that since he/she did not pass the WEST-E/NES and/or the current Washington State Assessment (i.e. current edTPA) but completed all other requirements, the B.S. Elementary Education and/or B.Ed. Secondary degree will be granted without Washington state teacher certification. Candidates must pass the WEST-E/NES and any other required Washington state assessment instrument (i.e. current edTPA) to receive Washington state teacher certification.

**PROGRAM OF STUDY PHASES:**Phase 1: Pre-Candidacy course requirements:

- Pre-candidacy courses must be completed with a minimum GPA of 2.75 before proceeding to the TCP Phase 2.
- All sections (reading, math, writing) of the WEST-B/ACT/SAT, or a combination thereof, must be taken and officially documented with the certification officer.
- Application for full admission to the TCP Phase 2 is required during the last quarter of pre-candidacy courses.
- A minimum grade of a B- is required in the following courses:
  - ENGL 121 College Writing I
  - ENGL 122 College Writing II
  - ENGL 223 Research Writing
  - MATH 112 Math for Elementary Teachers I
  - MATH 113 Math for Elementary Teachers II
  - MATH 105 or higher (secondary)

Phase 2: Certification Courses

To be admitted into Phase 2 of the Teacher Certification Program (TCP), candidates must complete all Phase 1 classes, have a Phase 1 GPA of 2.75, and submit a completed application packet. (The application packet is available upon request in the School of Education and Psychology.) Candidates must demonstrate excellence in knowledge representative of scholarship, skills of professionalism and dispositions, and personal fitness appropriate for the teaching profession. These terms are defined and explained in the Minimum Competencies document distributed in EDUC 211 Introduction to and Foundations of Education. The document is also available upon request from the certification officer in the School of Education and Psychology.

Candidates applying for full admission to the TCP Phase 2 are required by state law to take all sections of the Washington Educator Skills Test-Basic (WEST-B) and/or submit official documentation of scores for all sections on the ACT/SATs, or a combination thereof, prior to full admission into the program. Test dates and locations are available at the following website, [www.west.nesinc.com](http://www.west.nesinc.com).

Phase 3: Clinical Practice

Student teaching (Phase 3) requires formal application to the School of Education and Psychology. Student teaching application packets, available from the Education and Psychology office, are due by the first Friday of December, prior to the year in which the candidate plans to enroll for the experience. The candidate must document 450+ hours, according to current Washington state requirements, in supervised clinical practice over the course of their student teaching experience. Check with the certification officer for possible changes. *Note: The School of Education and Psychology will contact all potential placements; however, placements cannot be guaranteed.*

According to Washington State guidelines (WAC 181-78A-300), candidates seeking student teaching placement are required to take the Washington Educator Skills Test-Endorsement (WEST-E) and/or National Evaluation Series (NES) in the certifiable content area(s) and provide evidence to the certification officer by August 1. Teacher candidates will not be allowed to enter the clinical practice classroom without this documentation. Candidates are required to pass the WEST-E/NES and the current Washington State assessment instrument (i.e. current edTPA) in order to obtain Washington State certification. In addition, candidates desiring to pursue graduate studies in education are encouraged to take the Graduate Record Examination (general).

For a complete description of the teacher preparation program, see <http://www.wallawalla.edu/TCP>

**Notes on Washington State Certification**

The school attempts to provide current information on certification requirements in this bulletin. Because of frequent changes in state requirements, however, the candidate must consult with the School of Education and Psychology certification officer periodically for updated information that might affect certification status.

Meeting graduation requirements as specified in this bulletin does not guarantee state certification. An application process, including fingerprint clearance and a Dean's Affidavit regarding the candidate's fitness, and passing of the current Washington State assessment instrument is required.

**Notes on Adventist Education Certification**

Adventist Education Certification requires the completion of either the Elementary Education major or the Bachelor of Education in Secondary Education plus 18 credits of religion (8 credits of RELB, RELH 457, RELT 202, and RELT 417). In addition, Elementary Education majors must take EDUC 381 and Secondary Education majors must take either HLTH 110 or HLTH 220.

Any candidate completing either Elementary or Secondary teacher certification and Adventist Education Certification who wants an additional Adventist Education Certification endorsement(s) has the option of completing 27(+) credits in an endorsable content area for full endorsement or 18(+) credits for a junior academy endorsement. Successful completion of credits plus the approved methods course(s) is required to be recommended for additional Adventist Education Certification endorsements. For any science or history content area, the candidate will take EDUC 396. Art, English, French, Math, and Spanish have a departmental methods course. Music and Physical Education have two required departmental methods courses. (Note: a junior academy endorsement is valid for subjects in grades 6-10 in a union-approved junior academy or middle school).

Any Elementary Education major fulfilling the requirements for a second endorsement will add that endorsement to their K-8 certification. In order for an Elementary Education major to be recommended for an endorsement in a secondary content area, they must also complete EDUC 365, EDUC 395, and EDUC 475.

**ELEMENTARY EDUCATION MAJOR  
(BACHELOR OF SCIENCE)**

A candidate majoring in elementary education must satisfactorily complete the general studies program, baccalaureate degree requirements as listed in this bulletin, and the Teacher Certification Program (TCP): Phase 1, Phase 2, and Phase 3. No grade lower than a C applies in any major, minor, or endorsement classes.

Because of the unique nature of the certification requirements for the elementary education degree, Biology, Health, History, Math, Physical Education, and Physics courses taken to meet any requirements for the BS Elementary Education degree are considered cognates and therefore can be simultaneously counted toward major or minor requirements in other areas.

**Phase 1: TCP Pre-Candidacy, Provisional Admittance Status**

**Pre-Candidacy Courses:**

EDUC 211	Introduction to and Foundations of Education	4
PSYC 217	Psychology of Learning and Development	4
SPED 210	Introduction to Special Education and Inclusive Classrooms	<u>4</u>
	Total Pre-Candidacy Credits	12

**Pre-Candidacy Cognates:**

ENGL 121, 122	College Writing I, II (B- average)	6
MATH 112, 113	Mathematics for Elementary Teachers	<u>6</u>
	Total Pre-Candidacy Cognate Credits	12

**Phase 2: TCP Core Certification Courses**

Formal (full) acceptance into the Teacher Certification Program Phase 2 is required before registering for the courses listed below.

**Teacher Certification Courses:**

EDUC 360	Teaching and Learning: Inclusive Literacy I	4
EDUC 361	Teaching and Learning: Inclusive Literacy II	4
EDUC 373	Teaching and Learning: STEM: Mathematics & Technology	4
EDUC 382	Teaching and Learning: Social Studies	3
EDUC 383	Teaching and Learning: STEM: Science and Engineering	4
EDUC 390	Measurement and Evaluation in Education	4
EDUC 405	Elementary Classroom Organization and Management	4
MUED 394	Music in the Elementary School	3
PETH 473	Teaching Elementary Health and Physical Education	<u>3</u>
	Total Teacher Certification Course Credits	33

**Elementary Education Endorsement Requirements:**

EDUC 315	Technology in Education	3
EDUC 350	Language Development in Young Children (or PSYC 350)	3
EDUC 410	Philosophy of Education (or PHIL 410)	3
EDUC 425	Legal and Ethical Aspects of Education	2
EDUC 444	Teaching and Learning: Cultural Diversity	3
EDUC 495	Colloquium: Child Abuse	0
EDUC 497	Small Schools	2

**Teacher Certification Cognates**

ART 395	Methods of Teaching Art	2
BIOL 105 & 106	Contemporary Biology with Lab	8
ENGL 223	Research Writing	3
ENGL 374	Literature for Children and Young Adults	4
GEOG 252	World Geography	4
HLTH 110	Wellness for Living	3
HIST 221	History of the United States	
	or	4
HIST 222	History of the United States	
MUED 394	Music in the Elementary School	3
PETH 473	Teaching Elementary Health and Physical Education	3
PHYS 151, 152, 154, 155	Physical Science and Labs	8
SPCH 101	Fundamentals of Speech Communication	<u>4</u>
		46

Note: Phase 1 Pre-candidacy courses, cognates, and Teacher Certification Program courses also partially fulfill the endorsement requirements.

**Phase 3: TCP Student Teaching Clinical Practice**

Taking both sections of the National Evaluation Series (NES) in Elementary Education is a prerequisite for Phase 3.

EDUC 450	Introduction to Student Teaching: Clinical Practice	1
EDUC 451	edTPA Part 1	1
EDUC 452	edTPA Part 2	1
EDUC 460	Elementary Student Teaching Part I	1
EDUC 470	Elementary Student Teaching Part II: Assessment	1
EDUC 480	Elementary Student Teaching Part III	<u>12</u>
		17

**MINOR IN AN APPROVED CONTENT AREA**

(State and/or Denominational):

According to Washington State Certification Guidelines (WAC 181-79A-030(8)), elementary education majors must complete 30 credit hours from a state-approved minor or non-minor area. If the chosen minor does not have 30 quarter hours, additional courses must be taken to reach at least 30 quarter hours in the area of the minor. Alternatively, they must complete a minimum of 30 quarter hours in one of the three non-minor content areas listed below.

**Approved Minor Content Areas (WAC 181-82A-202)**

Art	Mathematics
Biology	Middle-Level Mathematics
Chemistry	Music
English/Language Arts	Physics
French	*Religion (not state approved)
German	Spanish
Health/Fitness	Special Education
History	

*\*A religion minor is available as a second minor.*

**Approved Non-Minor Content Areas**

Humanities  
Science  
Social Studies

**Humanities (completion of 31 credits)**

Complete the following language arts courses (19 credits)

ENGL 210, 211, or 212	Survey of British and American Literature	4
ENGL 214	Themes in Literature	4
ENGL 384	English Grammar	4
WRIT 324	Creative Nonfiction Writing	
	or	
WRIT 334	Poetry Writing	4
	or	
WRIT 335	Narrative Writing	
WRIT 389	Writing Theory	3

Complete the following social studies courses (12 credits):

HIST 254	History of Christianity	4
HIST 446	History of the Pacific Northwest	4
PLSC 224	American Government	4

### Science (completion of 32 credits)

Select 8-12 credits from each of the following sciences in consultation with your advisor.

#### Biology

BIOL 105, 106	Contemporary Biology	8
	or	
BIOL 141, 142, 143	General Biology	12

#### Chemistry

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3

#### Physics

PHYS 151, 152	Physical Science	6
PHYS 154, 155	Physical Science Laboratory	2
	or	
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3

### Social Studies (Completion of 32 credits)

Select from the following courses in consultation with your advisor.

History - minimum of 16 credits (sequence not required):

HIST 254	History of Christianity	4
HIST 446	History of the Pacific Northwest	4
HIST	Upper Division Electives	8

Social Studies Electives - minimum of 16 credits (4 upper division credits required):

ANTH 225	Cultural Anthropology	4
ECON 204	Fundamentals of Economics	4
HIST 359	The American Economy	4
PLSC 224	American Government	4
SOCI 204	General Sociology	4

### Additional Requirements for Adventist Education Certification

EDUC 381	Teaching and Learning: Religion Methods	2
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18 Religion credits are required for certification and must include:

RELB	(Selected from courses with RELB prefix)	8
RELH 457	History of Adventism	3
RELT 202	Christian Beliefs	4
RELT 417	Inspiration and Revelation	3

**Eighteen Religion credits are required for Junior Academy Religion Endorsement.**

Religious studies (Bible) is not an approved Washington state endorsement. However, a religion major or minor, plus a methods course in religion, remains essential for those desiring an Adventist Education endorsement in Bible.

SECONDARY EDUCATION (BACHELOR OF EDUCATION)  
DOUBLE DEGREE REQUIREMENTS

The secondary education major requires completion of a major in an approved secondary endorsement content area, listed below, as well as any additional secondary content area competency requirements.

Approved Secondary Endorsement Content Areas (State and/or Denominational):

Art	History
Biology	Mathematics
Chemistry	Music Education
English	Physics
French	Religion
Health/Fitness	Spanish

Phase 1: TCP Pre-Candidacy, Provisional Admittance Status

Pre-Candidacy Courses:

EDUC 211	Introduction to and Foundations of Education	4
PSYC 217	Psychology of Learning and Development	4
SPED 210	Introduction to Special Education and Inclusive Classrooms	<u>4</u>
	Total Pre-Candidacy Credits	12

Pre-Candidacy Cognates:

ENGL 121, 122	College Writing I, II (B- average)	6
MATH 105	Finite Mathematics (or an approved math course)	<u>4</u>
	Total Pre-Candidacy Cognates Credits	10

Phase 2: TCP Core Certification Courses

Formal (full) acceptance into the Teacher Certification Program Phase 2 is required before registering for the courses listed below.

Teacher Certification Courses:

EDUC 365	Secondary Classroom Management	4
EDUC 390	Measurement and Evaluation in Education	4
EDUC 395	Secondary Methods of Instruction I	2
XXXX 395	Secondary Methods Course, major or minor academic field	2-3
	or	
EDUC 396	Secondary Methods of Instruction II	3
EDUC 475	Teaching Reading Skills in The Content Areas	<u>3</u>
	Total Teacher Certification Course Credit Hours	15-16

Phase 3: TCP Student Teaching Clinical Practice

Taking all sections of the WEST-E and/or NES in area of endorsement is a prerequisite for Phase 3 (student teaching).

EDUC 450	Introduction to Student Teaching: Clinical Practice	1
EDUC 451	edTPA Part 1	1

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EDUC 452	edTPA Part 2	1
EDUC 461	Secondary Student Teaching Part I	1
EDUC 471	Secondary Student Teaching Part II: Assessment	1
EDUC 481	Secondary Student Teaching Part III	<u>12</u>
		17

## Secondary Education Endorsement Requirements:

EDUC 315	Technology in Education	3
EDUC 410	Philosophy of Education (or PHIL 410)	3
EDUC 425	Legal and Ethical Aspects of Education	2
EDUC 444	Teaching and Learning: Cultural Diversity	3
EDUC 495	Colloquium: Child Abuse	0
EDUC 497	Small Schools	2
ENGL 223	Research Writing	3
SPCH 101	Fundamentals of Speech Communication	<u>4</u>
	Total Credits	18

## One-Year Master of Initial Teaching (MIT) Prerequisites

Students must complete the following courses in addition to the content-area requirements below to be accepted into the one-year Masters of Initial Teaching program (see graduate bulletin).

### Courses

EDUC 211	Introduction to and Foundations of Education	4
EDUC 365	Secondary Classroom Management	4
EDUC 395	Secondary Methods of Instruction I	2
XXXX 395	Methods course, major or minor field	2-3
	or	
EDUC 396	Secondary Methods of Instruction II	<u>3</u>
	Total Credits	12-13

## Additional Content Area Competency Requirements:

Endorsement requirements frequently exceed graduation requirements. For example, endorsements typically require a methods class appropriate for secondary teaching (grades 5-12) and other courses covering Washington State required competencies. See the certification officer or secondary education advisor in the School of Education and Psychology for a current certification check-sheet.

## Additional Content Area Competency Requirements – Art (BA)

ART 395	Methods of Teaching Art	<u>2</u>
		2

## Additional Content Area Competency Requirements – Biology (BS)

BIOL XXX	One botany course (Elective)	4 or 5
BIOL XXX	One zoology course (Elective)	<u>4 or 5</u>
		8-10

## Additional Content Area Competency Requirements – Chemistry (BA/BS)

BIOL 141	General Biology	
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	or	4
CHEM 431	Foundations of Biochemistry	<u>4</u>

## Additional Content Area Competency Requirements – English (BA)

DRMA 211	Oral Interpretation	
	or	4
DRMA 242	Acting	
ENGL 374	Literature for Children and Young Adults	
ENGL 395	Methods of Teaching Secondary English	3
ENGL 485	Linguistics	3
FILM 416	Teaching with Film Literature	4
WRIT 389	Writing Theory	3
Choose one of the following:		
ENGL 357	The African-American Experience	4
ENGL 358	Classical Literature	4
ENGL 359	World Literature	<u>4</u>
		25

## Additional Content Area Competency Requirements – French (BA)

LANG 395	Methods of Teaching Modern Language	3
FREN 201	Intermediate French	4
FREN 202	Intermediate French	4
FREN 405	French Literature Analysis	4
Choose two of the following (8 credits):		
FREN 407	Survey of French and Francophone Literature	4
FREN 408	Contemporary French and Francophone Literature	4
FREN 409	French Culture and Civilization	4
FREN 410	Francophone Culture and Civilization	<u>4</u>
		23

## Additional Content Area Competency Requirements – Health/Fitness Prep for Secondary Teaching Concentration (BS)

*All covered in major*

## Additional Content Area Competency Requirements – History (BA)

HIST 122	The West and the World	4
HIST 254	History of Christianity	4
HIST 446	Pacific Northwest History	4
GEOG 252	World Geography	4
PLSC 224	American Government	<u>4</u>
		20

**Additional Content Area Competency Requirements – Math – Prep for Secondary Teaching Concentration (BS)***All covered in major***Additional Content Area Competency Requirements – Music, Choral, or Instrumental (BMus)**

MUED 395	Elementary Music Methods	3
MUED 396	Secondary Music Methods	3
MUPF 362	Instrumental Conducting Techniques and Materials	3
MUPF 363	Choral Conducting Techniques and Materials	3
		<u>12</u>

**Additional Content Area Competency Requirements – Physics (BS)***All covered in major***Additional Content Area Competency Requirements – Religion (BA)**

EDUC 381	Teaching and Learning: Religion Methods	2
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**Additional Content Area Competency Requirements – Spanish (BS)**

LANG 395	Methods of Teaching Modern Language	3
SPAN 201	Intermediate Spanish	4
SPAN 202	Intermediate Spanish	4
SPAN 405	Spanish Stylistics and Rhetoric	4

Choose two of the following (8 credits):

SPAN 407	Survey of Spanish a Latin American Literature	4
SPAN 408	Contemporary Latino Literature	4
SPAN 409	Spanish Culture and Civilization	4
SPAN 410	Latin America Cultures	4
		<u>23</u>

**Additional Requirements for Adventist Education Certification**

Choose one course from the following:

HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2

18 Religion credits are required for certification and must include:

RELB	(Selected from courses with RELB prefix)	8
RELH 457	History of Adventism	3
RELT 202	Christian Beliefs	4
RELT 417	Inspiration and Revelation	3

Religious studies (Bible) is not an approved Washington state endorsement.

However, a religion minor, plus a methods course in religion, remains essential for those desiring an Adventist Education endorsement in Bible. Eighteen religion credits and EDUC 381 are required for the Junior Academy Religion Endorsement.

**EDUCATION MINOR**

A candidate minoring in education must complete 30 quarter hours. Candidates who wish to enroll in EDUC or PSYC courses that list acceptance to the Teacher Certification Program Phase 2 as a prerequisite should apply for special acceptance with the administrative staff of the School of Education and Psychology. Recommended only for candidates seeking secondary certification.

## SCHOOL OF EDUCATION AND PSYCHOLOGY

### Required Courses:

EDUC 211	Introduction to and Foundations of Education	4
EDUC 410	Philosophy of Education (or PHIL 410)	3
PSYC 217	Psychology of Learning and Development	4
SPED 210	Introduction to Special Education and Inclusive Classrooms	4
	*Electives (8 must be upper division)	<u>15</u>
		30

\*Electives must be chosen from EDUC/SPED courses in consultation with an advisor.

## SPECIAL EDUCATION MINOR

A candidate minoring in special education must complete 31 quarter hours.

### Required Courses:

SPED 212	Early Childhood Special Education	3
SPED 213	Childhood Special Education	3
SPED 214	Adolescent Special Education	3
SPED 324	Adapted Physical Education (or PETH 324)	3
SPED 422	Methods of Teaching and Learning in Inclusive Classrooms	3
SPED 430	Professional Skills in Special Education	4
SPED 436	Teaching Students with Mild Disabilities	3
SPED 437	Teaching Students with Autism and Severe Disabilities	3
SPED 438	Consultation, Collaboration, and Transitions	3
SPED 440	Functional Behavioral Assessment	<u>3</u>
		31

### Additional Courses for Secondary Endorsement:

EDUC 360	Teaching & Learning: Inclusive Literacy I	4
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## PSYCHOLOGY MAJOR (BACHELOR OF ARTS)

The psychology curriculum is sufficiently flexible to meet the needs of students preparing for a wide range of careers in the behavioral sciences or in related professions that involve working with people. Primary emphasis is placed on the applied dynamics of human behavior and relationships rather than on animal or laboratory psychology.

The major requirements and cognate courses are intended to provide a scientific base on which a balanced program of electives may be built in accordance with the individual needs and interests of each student.

Although specific requirements for admission to graduate programs in most universities will be met by the general major, the student should realize that graduate work may be impeded or prolonged in certain areas of psychology if special preparation is not obtained at the undergraduate level. For this reason, students who plan to continue academic work in psychology beyond the bachelor's degree are urged to consult with their advisors very early in their university careers.

A student majoring in psychology must complete 51 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree

requirements as outlined in this bulletin. Senior students are required to take the Major Field Test (MFT) in psychology.

Required Courses:

PSYC 120	Introduction to The Psychology Major	0
PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4
PSYC 215	Developmental Psychology	4
PSYC 344	Social Psychology	4
PSYC 366	Theories of Personality	4
PSYC 390	Cognitive Psychology	4
PSYC 455	History and Systems of Psychology	4
PSYC 466	Biological Psychology	4
PSYC 471	Research Methods I: Design and Statistics	2
PSYC 472	Research Methods II: Project Development	2
PSYC 473	Research Methods III: Research Project	2
PSYC 492	Abnormal Psychology	4
PSYC 495	Colloquium: Orientation to Career and Graduate School	0
	*Electives (6 must be upper-division)	<u>9</u>
		51

\*Electives must be chosen in consultation with the student's advisor.

Cognates:

BIOL 121, 122, 123	Anatomy and Physiology	
	or	12
BIOL 141, 142, 143	General Biology	
MATH 106	Introduction to Statistics	4
PHIL 204	Essentials of Critical Reasoning	
	or	4
PHIL 205	Introduction to Philosophy	

Advanced courses may be substituted.

## PSYCHOLOGY MAJOR (BACHELOR OF SCIENCE)

This major is recommended for students who plan to pursue graduate studies in psychology. A student majoring in psychology must complete 60 quarter hours in the major, consisting of the core requirements and at least nine quarter hours of approved electives of which six must be upper-division. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test (MFT) in psychology.

Although specific requirements for admission to graduate programs in most universities will be met by this major, the student should realize that graduate work may be impeded or prolonged in certain areas of psychology if special preparation is not obtained at the undergraduate level. For this reason, students who plan to continue academic work in psychology beyond the bachelor's degree are urged to consult with their advisors very early in their university careers.

Required Courses:

PSYC 120	Introduction to The Psychology Major	0
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PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4
PSYC 215	Developmental Psychology	4
PSYC 344	Social Psychology	4
PSYC 366	Theories of Personality	4
PSYC 390	Cognitive Psychology	4
PSYC 455	History and Systems of Psychology	4
PSYC 464	Introduction to Counseling	4
PSYC 466	Biological Psychology	4
PSYC 471	Research Methods I: Design and Statistics	2
PSYC 472	Research Methods II: Project Development	2
PSYC 473	Research Methods III: Research Project	2
PSYC 492	Abnormal Psychology	4
PSYC 493	Psychology Practicum	3
PSYC 495	Colloquium: Orientation to Career and Graduate School	0
PSYC 498	Senior Project in Psychology	
	or	2
PSYC 499	Senior Thesis in Psychology	
	*Electives (6 must be upper-division)	<u>9</u>
		60

\*Electives must be chosen in consultation with the student's advisor.

### Cognates:

BIOL 121, 122, 123	Anatomy and Physiology	
	or	12
BIOL 141, 142, 143	General Biology	
MATH 106	Introduction to Statistics	4
PHIL 204	Essentials of Critical Reasoning	
	or	4
PHIL 205	Introduction to Philosophy	

Advanced courses may be substituted.

## FORENSIC PSYCHOLOGY MAJOR (BACHELOR OF SCIENCE)

This major is recommended for students pursuing careers in law enforcement, parole, and probation. A student majoring in forensic psychology must complete 63 quarter hours in the major. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test (MFT) in psychology.

### Required Courses:

ANTH 225	Cultural Anthropology	4
CORR 285	Introduction to Criminal Justice	4
CORR 385	Criminology	4
CORR 387	Juvenile Delinquency	3
PSYC 120	Introduction to The Psychology Major	0
PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4

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PSYC 215	Developmental Psychology	4
PSYC 247	Introduction to Forensic Psychology	4
PSYC 344	Social Psychology	4
PSYC 366	Theories of Personality	4
PSYC 430	Psychological Testing	3
PSYC 447	Advanced Forensic Psychology	4
PSYC 471	Research Methods I: Design and Statistics	2
PSYC 472	Research Methods II: Project Development	2
PSYC 473	Research Methods III: Research Project	2
PSYC 492	Abnormal Psychology	4
PSYC 493	Psychology Practicum	3
PSYC 495	Colloquium: Orientation to Career and Graduate School	0
SOCI 234	Current Social Problems	<u>4</u>
		63

## Cognates:

BIOL 105, 106	Contemporary Biology or	8
BIOL 121, 122	Anatomy and Physiology	
CHEM 105	Survey of Chemistry	5
MATH 106	Introduction to Statistics	4
PHIL 204	Essentials of Critical Reasoning	4

## PSYCHOLOGY MINOR

A student minoring in psychology must complete 30 quarter hours:

### Required Courses:

PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4
PSYC 215	Developmental Psychology	4
PSYC 344	Social Psychology	4
PSYC 455	History and Systems of Psychology	4
	*Electives (6 must be upper division)	<u>10</u>
		30

\*Approval of psychology advisor required.

**See page 234 for a list of course descriptions.** Look for courses with the following prefixes for the School of Education and Psychology: EDUC, PSYC, and SPED.

# SCHOOL OF ENGINEERING

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Brian Roth, Dean; Larry Aamodt, Bryce Cole, Rob Frohne, Qin Ma, Janice McKenzie, Curtis Nelson, Delvin Peterson, Melodie Selby, Douglas Thomsen, Louie Yaw.

The engineering profession applies the principles of mathematics, science, economics, ethics, and social sciences to use the materials and forces of nature for the benefit of mankind. The faculty of the Edward F. Cross School of Engineering, in partnership with the institution, strives to provide students a high-quality, broad-based, and integrated engineering education that will empower them to achieve success in one or both of the following:

- The practice of engineering or associated endeavors in industry, private practice, or government.
- Advanced study in engineering or other professions †.

**DEGREES OFFERED.** The Edward F. Cross School of Engineering offers curricula leading to two distinct degrees. The Bachelor of Science in Engineering (B.S.E.) degree is designed to prepare students to enter professional engineering practice and to provide undergraduate instruction that will serve as a strong foundation for graduate studies. The curriculum includes elective concentrations in bioengineering, civil, computer, electrical, and mechanical engineering. The B.S.E. program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The Bachelor of Science (B.S.) degree with a major in bioengineering is intended primarily for students planning to pursue advanced studies in bioengineering, medicine, dentistry, public health, or physiology. It is not designed for students desiring to enter directly into the practice of professional engineering following their undergraduate study.

**ADMISSION REQUIREMENTS.** Incoming engineering students must meet the WWU admission requirements. In addition, the School of Engineering expects that students are ready for Calculus I and College Writing I upon entrance. Readiness for Calculus I includes Algebra I and II, Geometry, and Trigonometry. A fourth year of mathematics, a second year of laboratory science, and an introductory computer programming course are strongly recommended. Prospective engineering students are encouraged to prepare themselves broadly by taking as many additional courses as possible in high school mathematics, English, science, social studies, and humanities. Studies in foreign languages and the practical arts are also valuable.

Students with entrance deficiencies may be admitted. However, such deficiencies must be removed before the beginning of the sophomore year. Students who present a transcript of previous successful studies at another approved college or university may be admitted with advanced standing.

Admission to engineering studies is normally made only in September. However, students may be admitted in January or March provided that an acceptable program can be scheduled.

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†Success is assessed approximately five years after graduation.

ENGINEERING CANDIDACY AND PROGRESSION POLICY. In the interest of having students matched with majors in which they can succeed, and stewardship of financial aid resources, it is important for engineering students to have appropriate preparation at the beginning of the program and to make good academic progress. The School of Engineering has established the following milestones.

*Milestone 0: Entrance to BSE program*

Requirements:

- Ready for ENGL 121
- Ready for MATH 181
- High school GPA  $\geq 3.0$

If requirements are not met:

- Concentration is Engineering Preparation
- Assigned to a specialized advisor
- Limited to a maximum of 14 credits

*Milestone 1: End of second quarter*

Requirements:

- Completed the following classes with a C- or better:
  - CHEM 142 or BIOL 142
  - ENGL 121
  - MATH 181
- Cumulative GPA  $\geq 2.5$

If requirements are not met:

- Concentration is Engineering Preparation
- Assignment to a specialized advisor
- Limited to a maximum of 14 credits

Concentration may change to one in the accredited BSE program when requirements are met.

*Milestone 2: End of fifth quarter*

Requirements:

- Completed ENGL 122 with a C- or better.
- Completed MATH 282 with a C- or better.

If requirements are not met:

- Student changes to a non-Engineering program

*Milestone 3: End of third year*

Requirements:

- Completed all first and second year engineering and cognate classes in the four-year planner for the student's concentration, with no more than 8 credits less than C-.

If requirements are not met:

- Student changes to a non-Engineering program

AFFILIATION PROGRAM. North American Seventh-day Adventist colleges and universities are affiliated with Walla Walla University under a program that allows students to complete the first one or two years of engineering instruction at any participating institution and then complete degree requirements at Walla Walla University. There is also a cooperative dual degree program in which the student



spends approximately three years at Oakwood University and approximately two years at WWU. Following the successful completion of all requirements, the student will be awarded a Bachelor of Science degree in Applied Mathematics from Oakwood University and a Bachelor of Science in Engineering degree from WWU. Each affiliated campus has an engineering coordinator appointed to provide the necessary guidance to insure a smooth transition from the affiliated campus to Walla Walla University. Details of this program can be obtained from the Dean of the School of Engineering.

## ENGINEERING

### (BACHELOR OF SCIENCE IN ENGINEERING)

The professional engineering curriculum emphasizes those subject areas that are common to the broad field of engineering while allowing for the development of professional competence within one of five specific engineering disciplines. The curriculum is also designed to provide for the attainment of cultural and intellectual maturity, the encouragement of personal growth and the development of moral, ethical, and social responsibility. The development of broad technical competence within engineering is achieved through a group of mathematics, science, and engineering core courses that emphasize fundamental knowledge, techniques, and processes. Specific professional competence is assured by the completion of a coherent group of courses chosen from bioengineering, civil, computer, electrical, or mechanical engineering. Intellectual, cultural, and moral development is encouraged through the selection of General Studies courses within the curriculum.

Flexibility in this program is provided by elective course selection and limited substitutions, individually chosen in consultation with an advisor and approved by the School of Engineering to form an integral professional engineering program. Students wishing to follow careers in other specialized fields, such as architectural engineering, highway engineering, environmental engineering, aerospace engineering, electronics engineering, nuclear engineering, or other areas will be prepared to do so through subsequent professional experience or graduate study.

Satisfactory progress depends upon maintaining a 2.00 minimum grade point average. Students who fail to make satisfactory progress may be advised to register with a reduced course load or to consider other educational alternatives.

No course with a grade of D- may be counted toward graduation degree requirements. Including General Studies courses, a total of 8 credits of a D or D+ grade may be counted toward degree requirements.

Students enrolled in the professional curriculum must complete a total of 200 quarter hours, including the engineering general studies requirements, the engineering core requirements, the engineering mathematics and science requirements, and one engineering concentration. Upper-division engineering courses must be taken in residence unless approved by the School of Engineering. Senior students are required to participate in the Senior Engineering Tour and the Fundamentals of Engineering Exam.

A student pursuing two concentrations within the BSE degree will be required to complete all the requirements of both concentrations and have a minimum of 224 credit hours in order to graduate. Each concentration must have a minimum of 24 credit hours that are applied only to that concentration.

Because of the unique nature of the professional curriculum of the engineering degree, Chemistry, Mathematics and Physics courses taken to meet any requirements for a BSE degree are considered cognates and therefore can be simultaneously counted toward major or minor requirements in other areas.

## ENGINEERING CORE REQUIREMENTS (117 CREDITS)

Core engineering classes emphasize development of engineering, science, and critical thinking skills common to the profession of engineering. Some flexibility is provided within the core, allowing students, in consultation with their academic advisors, to select the best courses to achieve their professional goals.

All students are required to present 47 to 64 credits of core courses depending upon the engineering concentration selected. In addition, the indicated minimum requirements must be satisfied within each individual section of the core.

## MATH AND SCIENCE FUNDAMENTALS (39 CREDITS)

Mathematics: (27)

MATH 181, 281-283	Calculus I-IV	16
MATH 289	Introduction to Linear Algebra	3
MATH 312	Ordinary Differential Equations	4
MATH 315	Probability and Statistics	4

Science: (12)

CHEM 141, 142	General Chemistry	6
CHEM 144, 145	General Chemistry Laboratory	2
PHYS 251	Principles of Physics	3
PHYS 254	Principles of Physics Laboratory	1

*Additional science coursework is listed within each concentration's requirements.*

## ENGINEERING TOOLS AND METHODS (22 CREDITS)

Engineering Introduction and Tools: (12)

CPTR 141	Fundamentals of Programming I	4
ENGR 120	Introduction to Bioengineering	
	or	2
ENGR 121	Introduction to the Profession of Engineering	
ENGR 122	Introduction to CAD	2
ENGR 326	Engineering Economy	4

Problem Formation and Solution: (10)

ENGR 221, 222	Engineering Mechanics	6
ENGR 228	Circuit Analysis	4

MATERIALS AND EXPERIMENTATION (4 CREDITS)

ENGR 321	Mechanics of Materials	4
	or	
ENGR 312, 315	Physical Electronics	

ENGINEERING PROJECT EXPERIENCE (8 CREDITS)

ENGR 123	Introduction to System Design and Engineering	2
	or	
ENGR 197, 297	Freshman Seminar, Sophomore Seminar	
ENGR 396	Junior Seminar	1
ENGR 397	Junior Seminar	0
ENGR 495	Colloquium (3 quarters required)	0
ENGR 496, 497, 498	Capstone Engineering Project	5
	or	
ENGR 496	Capstone Engineering Project	1
	and	
ENGR	Additional Engineering Design Elective*	3
	and	
ENGR 499	Capstone Project Completion	1

*\*Engineering design elective must be approved by the instructor for ENGR 497.*



## ENGINEERING GENERAL STUDIES REQUIREMENTS (44 CREDITS)

The general studies content within the engineering curriculum is similar to the standard General Studies requirements for the baccalaureate degree at Walla Walla University. However, there are important differences that must be observed. Forty-four credits must be distributed as follows:

### COMMUNICATION SKILLS (11)

#### Writing: (8)

ENGL 121	College Writing I	3
ENGL 122	College Writing II	3
ENGL 223	Research Writing	3

#### Speech: (3)

SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3

### PHYSICAL ACTIVITY EXPERIENCE (2)

The physical education requirements can be met by choosing 100-level activity courses (PEAC 107-195).

### ETHICS AND BELIEF STUDIES (18)

Six credits must be upper-division. Six credits must be RELB courses. See Religion General Studies section of this bulletin.

### HISTORICAL AND CONTEMPORARY ISSUES (10)

One course, 3-4 credits, must be upper-division.

### HUMANITIES (4)

#### Art:

ART 251	Introduction to Art	4
ART 312	Aesthetics and Photography	4
ART 324, 325, 326	History of World Art	3, 3, 3

#### Communication:

DRMA 363	History of Theatre	4
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#### Literature:

ENGL 204	Introduction to Literature	4
ENGL 210, 211, 212	Survey of British and American Literature	4, 4, 4
ENGL 214	Themes in Literature	4
ENGL 317	Pacific Northwest Writers	4
ENGL 357	The African-American Experience	4
ENGL 358	Classical Literature	4
ENGL 359	World Literature	4
ENGL 454	Literature of the Bible	4

## SCHOOL OF ENGINEERING

FILM 215	Introduction to Film Literature	4
SPAN 407	Survey of Spanish Literature	4
SPAN 408	Contemporary Latino Literature	4
Music:		
MUHL 124	Introduction to Music	4
MUHL 134	World Music	4
Philosophy:		
PHIL 204	Essentials of Critical Reasoning	4
PHIL 205	Introduction to Philosophy	4
PHIL 305	Moral Philosophy	4
PHIL 407	Philosophy of Science	4
PHIL 412	Philosophy of Religion	4
SOCIAL SCIENCES (4)		
Behavioral Science:		
ANTH 225	Cultural Anthropology	4
PSYC 130	General Psychology	4
PSYC 344	Social Psychology	4
PSYC 366	Theories of Personality	4
PSYC 425	Psychology of Religion	3
PSYC 455	History and Systems of Psychology	4
SOCI 204	General Sociology	4
SOCI 234	Current Social Problems	4
SOCI 236	Privilege and Oppression	4
SOCI 420	Immigration and Identity	4
Business and Economics:		
ECON 204	Fundamentals of Economics	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
MGMT 371	Principles of Management	4
Communication:		
COMM 325	Multicultural Communication	3
LANG 406	Language and Culture	4

## History and Political Science:

HIST 121, 122	The West and the World	4, 4
HIST 221, 222	History of the United States	4, 4
HIST 242	Modern East Asian History	4
HIST 275	History of England	4
HIST 283	Latin America	4
HIST 306	Classical Greece and Rome	4
HIST 335	The World Wars	4
HIST 443	Colonial and Revolutionary America	4
HIST 445	The Civil War and Reconstruction	4
HIST 446	History of the Pacific Northwest	4
HIST 448	The Emergence of Modern America	4
PLSC 224	American Government	4

## APPROVED ELECTIVES (No Minimum)

ACCT 201	Principles of Accounting	4
EDUC 211	Introduction to and Foundations of Education	3
ENGR 310	Sustainable Energy Systems	2
WRIT 324	Creative Nonfiction Writing	3
FREN 101, 102	Elementary French	4, 4
GBUS 361	Business Law I	4
GRMN 101, 102	Elementary German	4, 4
HLTH 110	Wellness for Living	3
HLTH 208	Drugs and Society	3
HLTH 220	Human Nutrition	4
SOCI 225	Marriage and Family Life	2
SPAN 101, 102	Elementary Spanish	4, 4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	Small Group Communication	3
SPCH 407	Advanced Small Group Communication	3

## BIOENGINEERING CONCENTRATION (83 CREDITS)

## Required Courses:

BIOL 141, 142, 143	General Biology	12
BIOL 381, 382	Cell Biology	8
BIOL 470	Biophysics	4
CHEM 143, 146	General Chemistry and Laboratory	4
CHEM 321, 324	Organic Chemistry and Laboratory	5
ENGR 223	Engineering Mechanics	3
ENGR 331	Fluid Mechanics	4
ENGR 384	Bioengineering Instrumentation	4
ENGR 386	Bioengineering Materials	4
ENGR 486	Tissue Engineering	4
PHYS 331, 332	Introduction to Nanotechnology	4
ENGR	Depth Electives	8
	Breadth Electives	<u>19</u>
		83

## Depth Electives (8):

ENGR 485	Biological and Chemical Reactor Design	4
ENGR 487	Biomedical Imaging	4

Other courses may be selected with approval of the academic advisor

## Breadth Electives (19):

Engineering and Computer Science Electives (4-16)

Computer Science Electives (0-8)

Engineering Electives (0-8)

Management (0-4)

MGMT 371	Principles of Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4

Math/Science Electives (8-13)

BIOL 383	Cell Biology III	4
BIOL 445	Advanced Microbiology	4
BIOL 464	Animal Physiology	4
BIOL 466	Immunology	4
CHEM 322, 325	Organic Chemistry and Laboratory	5
CHEM 431	Foundations of Biochemistry	4
MATH 319	Optimization	4
MATH 341	Numerical Analysis	4
MATH 389	Linear Algebra	4
MATH 413	Partial Differential Equations	4
PHYS 252, 253	Principles of Physics and	3, 3
PHYS 255, 256	Principles of Physics Laboratory	1, 1

## Transport Phenomena (3-4)

ENGR 332	Thermodynamics	3
ENGR 465	Heat Transfer	4
ENGR 468	Engineering Finite Element Methods	4

*Topics classes or other appropriate classes may be substituted for classes in the breadth elective category if approved by the School of Engineering. Engineering and computer science electives, approved by the School of Engineering, must be chosen in consultation with the academic advisor.*

## CIVIL ENGINEERING CONCENTRATION (83 CREDITS)

## Required Courses:

CHEM 143	General Chemistry	3
CHEM 146	General Chemistry Laboratory	1
ENGR 323	Civil Engineering Materials	3
ENGR 331	Fluid Mechanics	4
ENGR 341	Geology and Soil Mechanics	4
ENGR 342	Hydrology	3
ENGR 343	Environmental Engineering Systems	4
ENGR 344	Civil Engineering Analysis	4
ENGR 345	Contracts and Specifications	2
ENGR 346	Surveying	4
ENGR 347	Structural Analysis I	3
ENGR 348	Structural Analysis II	3
ENGR 441	Steel Structural Design	3
ENGR 442	Reinforced Concrete Structural Design	4
ENGR 445	Collection and Distribution System Design	4
ENGR 446	Treatment Plant Design	4
ENGR 449	Transportation Engineering	4
ENGR	Depth Electives	6
	Breadth Electives	<u>20</u>
		83

## Depth Electives (6):

ENGR 440	Groundwater Pollution Control	3
ENGR 443	Timber Design	3
ENGR 444	Structural Design	3
ENGR 447	Receiving Water Analysis	3
ENGR 448	Hydroenvironmental Design	3
ENGR 450	Geotechnical Engineering	3

## Breadth Electives (20):

## Interdisciplinary Engineering (3-6)

ENGR 223	Engineering Mechanics	3
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## SCHOOL OF ENGINEERING

ENGR 325	Instrumentation	3
ENGR 366	Vibrations	3

### Management (0-4)

MGMT 371	Principles of Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4

### Math and Science (4-14)

#### Math (0-8)

MATH 319	Optimization	4
MATH 341	Numerical Analysis	4
MATH 413	Partial Differential Equations	4

#### Science (Up to 8 credit hours of lower-division courses may be chosen.)

BIOL 141-143	General Biology	4, 4, 4
BIOL 222	Microbiology	5
BIOL 305	General Ecology	4
BIOL 410	Limnology	4
CHEM 301	Chemical Equilibrium and Analysis	3
CHEM 321, 322	Organic Chemistry and	4, 4
CHEM 324, 325	Organic Chemistry Laboratory	1, 1
CHEM 352, 353	Physical Chemistry	3, 3
PHYS 252, 253	Principles of Physics and	3, 3
PHYS 255, 256	Principles of Physics Laboratory	1, 1

### Transport Phenomena (3)

CHEM 352	Physical Chemistry	3
ENGR 332	Thermodynamics	3
ENGR 364	Fluid Mechanics Laboratory	1

### Other Civil Depth Courses (0-6)

Up to two additional Depth Electives may be taken as Breadth Electives.

*Topics classes or other appropriate classes may be substituted for classes in the breadth elective category if approved by the School of Engineering.*

## COMPUTER ENGINEERING CONCENTRATION (83 CREDITS)

## Required Courses:

CPTR 142	Fundamentals of Programming II	4
CPTR 242	Sequential and Parallel Data Structures and Algorithms	4
CPTR 280	Computer Organization and Assembly Language	3
CPTR 352	Operating Systems	4
CPTR 380	Computer Architecture	4
CPTR 450	Software Engineering	3
CPTR 456	Computer Networks	4
CPTR 480	Programming Embedded and Real Time Systems	4
ENGR 223	Engineering Mechanics	3
ENGR 350	Linear System Analysis	4
ENGR 354	Digital Logic	3
ENGR 355	Embedded System Design	3
ENGR 356	Engineering Electronics	4
ENGR 433	Digital Design	4
MATH 250	Discrete Mathematics	4
PHYS 252, 253	Principles of Physics	6
PHYS 255, 256	Principles of Physics Laboratory	2
ENGR, CPTR	Depth Electives	8-12
	Breadth Electives	<u>8-12</u>
		83

## Depth Electives (8-12)

Computer Science Electives	4-8
Electrical Engineering Electives	4-8

## Breadth Electives (8-12):

## Management Elective (0-4)

MGMT 371	Principles of Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4

## Science Elective (0-4)

CHEM 143,146	General Chemistry and Laboratory	4
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## Transport Phenomena Electives (7-8)

ENGR 331	Fluid Mechanics	4
ENGR 332	Thermodynamics	3
ENGR 465	Heat Transfer	4
ENGR 468	Engineering Finite Element Methods	4

*Topics classes or other appropriate classes may be substituted for classes in the breadth elective category if approved by the School of Engineering.*

*Depth electives, approved by the School of Engineering, must be chosen in consultation with the academic advisor.*

## ELECTRICAL ENGINEERING CONCENTRATION (83 CREDITS)

## Required Courses:

CPTR 142	Fundamentals of Programming II	4
CPTR 280	Computer Organization and Assembly Language	3
ENGR 223	Engineering Mechanics	3
ENGR 332	Thermodynamics	3
ENGR 350	Linear Systems Analysis	4
ENGR 354	Digital Logic	3
ENGR 355	Embedded System Design	3
ENGR 356, 357	Engineering Electronics	8
ENGR 430	Electric Power Engineering	4
ENGR 433	Digital Design	4
ENGR 451	Electromagnetic Fields	4
ENGR 455	Signals and Systems	4
PHYS 252, 253	Principles of Physics	6
PHYS 255, 256	Principles of Physics Laboratory	2
ENGR	Depth Electives	12
	Breadth Electives	<u>16</u>
		83

## Depth Electives (12)

CPTR 380	Computer Architecture	4
ENGR 318	Electromechanical Energy Conversion	4
ENGR 454	Digital Control Systems	4
ENGR 456	Communication Systems	4
ENGR 460	Power Electronics	4

## Breadth Electives (16):

## Engineering/Computer Science Electives (4-10)

## Management Elective (0-4)

MGMT 371	Principles of Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4

## Math/Science Elective (3-4)

CHEM 143, 146	General Chemistry and Laboratory	4
MATH 319	Optimization	4
MATH 341	Numerical Analysis	4
MATH 389	Linear Algebra	4
MATH 423	Complex Analysis	4
MATH 451	Real Analysis	4
PHYS 310	Modern Physics I	3

	and	
PHYS 314	Modern Physics Laboratory I	1
PHYS 323	Modern Optics	3
	and	
PHYS 324	Modern Optics Laboratory	1
PHYS 420	Classical Mechanics	3
Transport Phenomena Elective (4)		
ENGR 331	Fluid Mechanics	4
ENGR 465	Heat Transfer	4
ENGR 468	Engineering Finite Element Methods	4
<i>Topics classes or other appropriate classes may be substituted for classes in the breadth elective category if approved by the School of Engineering.</i>		
<i>Engineering and computer science electives, approved by the School of Engineering, must be chosen in consultation with the academic advisor.</i>		

## MECHANICAL ENGINEERING CONCENTRATION (83 CREDITS)

### Required Courses:

ENGR 223	Engineering Mechanics	3
ENGR 322	Engineering Materials	4
ENGR 324	Materials and Processes in Manufacturing	2
ENGR 325	Instrumentation	3
ENGR 331	Fluid Mechanics	4
ENGR 332	Thermodynamics	3
ENGR 333	Thermodynamics and Thermal Systems	4
ENGR 350	Linear Systems Analysis	4
ENGR 364	Fluid Mechanics Laboratory	1
ENGR 365	Machine Element Design Laboratory	1
ENGR 366	Vibrations	3
ENGR 374	Advanced CAD/MCAE	2
ENGR 461	Kinematics	4
ENGR 462	Machine Design	4
ENGR 465	Heat Transfer	4
ENGR 468	Engineering Finite Element Methods	4
PHYS 252, 253	Principles of Physics	6
PHYS 255, 256	Principles of Physics Laboratory	2
TECH 265	Metal Lathe and Welding	2
ENGR	Depth Electives	12
	Breadth Electives	<u>12</u>
		83
Depth Electives (12)		
ENGR 318	Electromechanical Energy Conversion	4

## SCHOOL OF ENGINEERING

ENGR 419	Optimization	4
ENGR 466	Heating, Ventilating, and Air Conditioning Design	4
ENGR 467	Robotics	4
ENGR 475	Mechanics of Flight	4
ENGR 480	Manufacturing Systems Engineering	4

### Breadth Electives (12):

#### Engineering/Computer Science Electives (3-6)

CPTR 280	Computer Organization and Assembly Language	3
CPTR 355	Computer Graphics	4
ENGR 310, 311	Sustainable Energy Systems	2, 0
ENGR 343	Environmental Engineering Systems	4
ENGR 345	Contracts and Specifications	2
ENGR 346	Surveying	4
ENGR 347, 348	Structural Analysis I and II	3, 3
ENGR 356	Engineering Electronics	4
ENGR 455	Signals and Systems	4

#### Management Elective (0-4)

MGMT 371	Principles of Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4

#### Math/Science Electives (3-10)

CHEM 143, 146	General Chemistry and Laboratory	4
MATH 319	Optimization	4
MATH 341	Numerical Analysis	4
MATH 413	Partial Differential Equations	4
MATH 423	Complex Analysis	4
MATH 451	Real Analysis	4
PHYS 310	Modern Physics I and	3
PHYS 314	Modern Physics Laboratory I	1
PHYS 323	Modern Optics and	3
PHYS 324	Modern Optics Laboratory	1
PHYS 331	Introduction to Nanotechnology and	3
PHYS 332	Introduction to Nanotechnology Laboratory	1
PHYS 420	Classical Mechanics	3

*Topics classes or other appropriate classes may be substituted for classes in the breadth elective category if approved by the School of Engineering.*

*Depth electives, approved by the School of Engineering, must be chosen in consultation with the academic advisor.*

## GLOBAL HUMANITARIAN ENGINEERING EMPHASIS (20 CREDITS)

This emphasis prepares a student for engineering in a global context. This emphasis is open to students pursuing a BSE (any concentration) or a Bioengineering Science degree. Students will complete a course of study and an international field work experience. After successful completion of this emphasis, the words Global Humanitarian Engineering Emphasis will appear in the student's transcript and diploma.

The Global Humanitarian Engineering coordinator can provide application details.

Required Courses:

20 credit hours required, selected as shown from the courses below.

### Culture and Business (7-8)

ANTH 225	Cultural Anthropology	4
COMM 325	Multicultural Language	3
ECON 220	Principles of International Development	4
ECON 410	Comparative Economic Development	4
LANG 406	Language and Culture	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
MGMT 488	Global management and Marketing (or MKTG 488)	4
SOCI 234	Current Social Problems (or SOWK 234)	4
SOCI 236	Privilege and Oppression	4
SOCI 420	Immigration and Identity	4
TECH 321	Technology and Society	4

### Engineering

ENGR 293	GHE Pre-Seminar	1
ENGR 390	Engineering in a Global Context	4
ENGR 393	International Experience	0
ENGR 493	GHE Post-Seminar	1

### Ethics (4)

GBUS 463	Business Ethics	4
PHIL 305	Moral Philosophy	4
PHIL 496	Seminar	4
RELT 348	Christian Ethics	4

### Religion (3-4)

HONR 348	Topics in World Religious Thought	4
RELH 303	World Religions	4
RELM 233	Introduction to Cross-Cultural Ministry	3

(Two quarters of seminar are required, one prior to the international experience and one after. Topics classes or other appropriate classes may be substituted for classes in the culture and business, ethics, or religion requirements if approved by the Global Humanitarian Engineering Committee.)

## SCHOOL OF ENGINEERING

### BIOENGINEERING SCIENCE (BACHELOR OF SCIENCE)

The bioengineering science major is a joint program offered by the Department of Biological Sciences and the School of Engineering. See the Interdisciplinary Programs section (p. 174) of this bulletin.

**See page 234 for a list of course descriptions.** Look for courses with the following prefix for the School of Engineering: ENGR.

# ENGLISH

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Kellie Bond, Chair; Terrie Aamodt, Karen Clausen-Brown, Susan Gardner, Ronald Jolliffe, Daniel Lamberton, Cynthia Westerbeck.

In its general studies courses, the department aims to enhance the student's ability to use language. The writing courses give instruction in clear, effective writing, and the literature courses address significant and enduring issues that lead to a broad understanding of human experience.

The English department offers a major in English with emphases in literature, writing, and secondary teaching; it also offers an English minor. Both the major and minor provide a foundation for careers that emphasize critical thinking and skillful communication. English majors frequently work in non-profit and corporate communication, grant writing, education, journalism, digital and print publishing, library science, and government. The major is also a strong preparation for law, business, medicine, and the social and behavioral sciences. These and other professions place a high value on the ability to read intelligently, to write clearly, and to understand human experience. The student can choose electives in the major to provide an emphasis in writing or literature as desired.

## ENGLISH MAJOR (BACHELOR OF ARTS)

A student majoring in English must complete 62 hours of ENGL, FILM, and WRIT courses—as well as the English cognates.

English majors will maintain an overall GPA of 2.75 in their major courses. Senior students are required to take the Major Field Test (MFT): Literature in English. Students planning to attend graduate school are advised to take the Graduate Record Examination (GRE), general and subject (English) sections.

### Core Requirements:

ENGL 210, 211, 212	Survey of British and American Literature	12
ENGL 234	Literary Analysis	4

British literature before 1830 selected from the following courses (4 credits):

ENGL 344	Medieval Literature	4
ENGL 345	Renaissance Literature	4
ENGL 346	Restoration and Enlightenment	4
ENGL 347	Romantic British Literature	4

British or American literature after 1830 selected from the following courses (4 credits):

ENGL 355	Victorian Literature	4
ENGL 356	Twentieth-Century British Literature	4
ENGL 364	Nineteenth-Century American Literature	4
ENGL 366	Twentieth-Century American Literature	4



ENGLISH

ENGL 384	English Grammar (also fulfilled with 12 hours of Latin or 9 hours of Greek)	4
ENGL 470	Literary and Critical Theory	4
ENGL 495	English Colloquium (12 quarters) (1 each quarter while in residence)	<u>0</u>
		32
Cognates		
HIST 275	History of England and	4
HIST 222	History of the United States or	4
HONR 131, 132, 133	Western Thought	12

ENGLISH MAJOR WITH EMPHASIS IN LITERATURE

The emphasis in literature focuses on the careful study of literary texts. The lower-division core requirements for the English major serve as a foundation for the study of literature. Students are eligible to pursue the emphasis in literature after they complete each of these courses with a grade of C or higher. During the fall quarter of the junior year, English majors wishing to emphasize literature will submit a portfolio to the chair that includes two academic essays and a statement of intent (guidelines for the portfolio are to be obtained from the chair). The department will respond to these portfolios during winter quarter of the students' junior year. Together, English majors and the department will consider the students' progress in the major, their professional goals, and the ways the English major and emphasis in literature can help them achieve their goals.

This emphasis culminates in the Seminar in Literature, which requires the production of a major scholarly essay and an oral presentation during the last quarter.

Required Courses:

ENGL 344-347	British Literature before 1830	4*
ENGL 355-366	British or American Literature after 1830	4*
FILM 318	Film Studies	4
WRIT 324-337	Writing	3-4
ENGL 496, 497, 498	Seminar in Literature	6
	Electives (from ENGL and WRIT)	<u>8-9</u>
		30

\*These are in addition to the literature courses required in the core.

ENGLISH MAJOR WITH EMPHASIS IN CREATIVE WRITING

The emphasis in creative writing focuses on writing in various genres and on the close study of literary texts as models for the students' creative work. During the winter quarter of the junior year, English majors wishing to emphasize creative writing will submit a portfolio to the chair that includes examples of their creative and academic work and a statement of intent (guidelines for the portfolio are to be obtained from the chair). Eligibility for the emphasis in creative writing will be determined by the English faculty. The department will respond to these

portfolios during the winter quarter of the students' junior year. Together, English majors and the department will consider the students' progress in the major, their professional goals, and the ways the English major and emphasis in creative writing can help them achieve their goals.

This emphasis culminates in the Seminar in Creative Writing, which guides students in the preparation of their senior portfolio, a collection of fiction, poetry, and/or essays. Students will give a public reading of their creative work during the last quarter.

Take two of the following writing theory courses (6 credits):

WRIT 333	Poetics	3
WRIT 337	Stylistics	3
WRIT 389	Writing Theory	3

Take two of the following creative writing courses (8 credits):

WRIT 324	Creative Nonfiction Writing	4
WRIT 334	Poetry Writing	4
WRIT 335	Narrative Writing	4
ENGL 313	Image and Text or	4
ENGL 368	Contemporary Literature	
FILM 318	Film Studies	4
WRIT 424-435	Directed Writing	2
WRIT 496, 497, 498	Seminar in Creative Writing	<u>6</u>
		30

## ENGLISH MAJOR WITH EMPHASIS IN SECONDARY TEACHING

The emphasis in secondary teaching is designed to be taken with the B.Ed. in Secondary Education and prepares students to teach English and language arts in middle school and high school. Together, the courses in this emphasis, the English major core, and the B.Ed. teach the content and skills required for certification by the State of Washington. Students will declare to their English advisor their intent to pursue the emphasis in secondary teaching when they apply to Phase 2 of the Teacher Certification Program, typically by the end of spring quarter of the freshman year.

This emphasis culminates in the Seminar in Literature or the Seminar in Creative Writing, courses that, respectively, require students to write a major scholarly paper or prepare a portfolio of their own creative work. Students will give an oral presentation of their work during the last quarter.

Required Courses:

ENGL 359	World Literature	4
ENGL 374	Literature for Children and Young Adults	4
ENGL 395	Methods of Teaching Secondary English	3
FILM 416	Teaching With Film Literature	4
WRIT 389	Writing Theory	3

## ENGLISH

Take one of the following writing courses (4 credits):

WRIT 324	Poetry Writing	4
WRIT 334	Narrative Writing	4
WRIT 335	Creative Nonfiction Writing	4

WRIT 424-435	Directed Writing	2
	or	

ENGL 360 Shakespeare at Ashland

ENGL 496, 497, 498	Seminar in Literature	6
	or	

WRIT 496, 497, 498	Seminar in Creative Writing	30
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Cognate:

DRMA 211	Oral Interpretation	4
	or	

DRMA 242 Acting

## ENGLISH MINOR

Required Courses:

ENGL 210, 211, 212	Survey of British and American Literature	12
ENGL 234	Literary Analysis	4
ENGL 344-356, 364-366	British or American Literature	4
WRIT 324-337	Writing	3-4

\*Electives (3 must be upper-division;  
4 may be ENGL 374) 6-7  
30

\*Electives shall be chosen in consultation with the English advisor.

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the English department: ENGL, FILM, and WRIT.

# HEALTH AND PHYSICAL EDUCATION

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Rodd Strobel, Chair; Michael Hellie, Curtis Kuhlman, Shirley Wilson-Anderson.

Walla Walla University is one of the church's pioneers in the field of health and physical education. In 1949, this department was the first to graduate a physical education major from an Adventist institution. Since then its graduates have made significant contributions as teachers, researchers, youth leaders, health educators, physicians, dentists and other health professionals.

The department offers majors in Health Promotion, Health Science and Physical Education. Minors are available in Athletic Coaching, Health, and Physical Education. These programs seek to develop the leadership and professional skills which will enable graduates to promote a healthy Christian lifestyle for others.

The majors in Health Promotion and Health Science will help prepare students to meet the increasing demands for health professionals trained in promoting wellness. The major in Health Promotion is designed for students desiring to pursue graduate work and careers in the areas of health education, community health, school health, health promotion, employee wellness, and other areas of public health. The major in Health Science provides a program for students wishing to pursue graduate studies and careers in research, medicine, dentistry, environmental health, nutrition, and other disciplines in the health sciences.

The programs in physical education help prepare professionals who will promote activities that stimulate habits of regular exercise and develop skills and interests for participation throughout life. The curriculum includes two concentrations: Preparation for Teaching and Fitness Management.

The Associate of Science majors offered in the Health and Physical Education Department include Pre-Dental Hygiene, Pre-Nutrition and Dietetics, and Pre-Physical Therapy. Each of these majors reflects the admission requirements for Loma Linda University. Requirements for admission to professional programs vary among schools and are subject to change. Students should request information about current admission requirements for the professional school they plan to attend. All programs should be planned in consultation with and approved by the academic advisor. Completion of the Associate of Science degree does not assure acceptance into the professional school of your choice.

## HEALTH SCIENCE MAJOR (BACHELOR OF SCIENCE)

A student majoring in health science must complete 54 quarter hours of interdisciplinary courses as listed below, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

### Core Requirements:

HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2
HLTH 208	Drugs and Society	3
HLTH 220	Human Nutrition	4
HLTH 315	Etiology of Selected Diseases	3
HLTH 370	Health Psychology (or PSYC 370)	3
HLTH 472	Stress Management	3

## HEALTH AND PHYSICAL EDUCATION

HLTH 496	Seminar	1
PETH 426	Physiology of Exercise	4
PETH 427	Fitness Evaluation Techniques	3
	Electives*	<u>25</u>
		54

\*Electives: A total of 25 credits must be chosen between Science Electives and Health Science Electives.

### Science Electives

Select 12-16 hours from the following courses: 12-16  
One class must be upper division

BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 222	Microbiology	5
BIOL 305	General Ecology	4
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 383	Cell Biology III: Genomics and Regulation	4
BIOL 464	Animal Physiology	4
BIOL 465	Ecological Physiology	3
BIOL 466	Immunology	4
CHEM 431, 432, 433	Foundations of Biochemistry	4, 3, 4
PETH 325	Kinesiology	4

### Health Science Electives

Select 9-13 hours from the following courses or any HLTH course. Three or more credits must be upper division. Approval of health advisor required.

ANTH 225	Cultural Anthropology	4
FINA 351	Managerial Finance	4
FINA 451	Investments	4
MGMT 275	Entrepreneurship and Small Business Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
PEAC 122	Strength Training	
	or	1
PEAC 123	Circuit Weight Training	
PEAC 128	Jogging	1
PEAC 133	Aerobic Rhythm	1
PETH 225	Prevention of Injuries	2
PETH 324	Adapted Physical Education and Recreation	3
PETH 425	Motor Learning	4
PSYC 215	Developmental Psychology	4
PSYC 217	Psychology of Learning and Development	4
PSYC 344	Social Psychology	4

PSYC 366	Theories of Personalities	4
PSYC 373	Organizational Behavior (or MGMT 373)	4
PSYC 464	Introduction to Counseling	4
PSYC 466	Biological Psychology	4
PSYC 492	Abnormal Psychology	4
SOCI 236	Privilege and Oppression	4
SOCI 437	Death and Dying	3
SOWK 327	Introduction to Alcoholism and Addiction Treatment	3
SOWK 383	Topics in Geriatric Mental Health	2; 4
Cognates:		
BIOL 141, 142, 143	General Biology	12
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
PSYC 130	General Psychology	4
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3
	or	
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
Select one of the following: (4)		
BIOL 250	Biostatistics	4
MATH 106	Introduction to Statistics	4
Select one of the following: (4-8)		
MATH 121, 122	Precalculus I, II	8
MATH 131, 132	Calculus for the Life Sciences I, II	8
MATH 181	Calculus I	4

## HEALTH PROMOTION MAJOR (BACHELOR OF SCIENCE)

A student majoring in health promotion must complete 69 quarter hours of interdisciplinary courses as listed below, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

### Core Requirements:

HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2
HLTH 208	Drugs and Society	3
HLTH 217	First Aid	2
HLTH 220	Human Nutrition	4
HLTH 308	Community Health	3
HLTH 315	Etiology of Selected Diseases	3
HLTH 331	Consumer Health	3
HLTH 350	Internship Placement Orientation	0
HLTH 370	Health Psychology (or PSYC 370)	3

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HLTH 421	Health Promotion Planning and Evaluation	3
HLTH 422	Programs in Health Promotion	3
HLTH 437	Community Nutrition	3
HLTH 471	Human Sexuality	3
HLTH 472	Stress Management	3
HLTH 490	Internship in Health	12
HLTH 496	Seminar	1
PETH 426	Physiology of Exercise	4
PETH 427	Fitness Evaluation Techniques	3
	Electives	<u>8</u>
		69

### Electives for Health Promotion Majors

Electives must be chosen from the following courses or any HLTH course. Three or more credits must be upper division. Approval of health advisor required.

ANTH 225	Cultural Anthropology	4
FINA 351	Managerial Finance	4
FINA 451	Investments	4
HLTH 328	Basic Therapy	2
MGMT 275	Entrepreneurship and Small Business Management	4
MGMT 380	Principles of Project Management (or MKTG 380)	4
PEAC 122	Strength Training	
	or	1
PEAC 123	Circuit Weight Training	
PEAC 128	Jogging	1
PEAC 133	Aerobic Rhythm	1
PETH 225	Prevention of Injuries	2
PETH 324	Adapted Physical Education and Recreation	3
PETH 325	Kinesiology	4
PSYC 215	Developmental Psychology	4
PSYC 217	Psychology of Learning and Development	4
PSYC 344	Social Psychology	4
PSYC 366	Theories of Personalities	4
PSYC 373	Organizational Behavior (or MGMT 373)	4
PSYC 464	Introduction to Counseling	4
PSYC 466	Biological Psychology	4
PSYC 492	Abnormal Psychology	4
SOCI 236	Privilege and Oppression	4
SOCI 437	Death and Dying (or PSYC 437, SOWK 437)	3
SOWK 327	Introduction to Alcoholism and Addiction Treatment	3
SOWK 383	Topics in Geriatric Mental Health	2; 4

### Cognates:

BIOL 141, 142, 143    General Biology

	or	12
BIOL 121, 122, 123	Anatomy and Physiology	
GBUS 370	Business Communication	4
MATH 106	Introduction to Statistics	4
MKTG 381	Principles of Marketing	4
PSYC 130	General Psychology	4
SOCI 204	General Sociology	4
SPCH 101	Fundamentals of Speech Communication	4

## PHYSICAL EDUCATION MAJOR (BACHELOR OF SCIENCE)

A student majoring in physical education must complete the major core requirements, one concentration and its required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Washington State certification is available in Physical Education. See School of Education and Psychology for certification requirements.

### Core Requirements:

PETH 214	Introduction to Physical Education and Recreation	2
PETH 225	Prevention of Injuries	2
PETH 324	Adapted Physical Education and Recreation	3
PETH 325	Kinesiology	4
PETH 425	Motor Learning	4
PETH 426	Physiology of Exercise	4
PETH 484	Administration of Health, Physical Education, and Recreation	3
PETH 493	History and Philosophy of Physical Education	3
PETH 496	Seminar	<u>1</u>
		26

## PREPARATION FOR TEACHING CONCENTRATION

### Required Courses:

HLTH 110	Wellness for Living	3
HLTH 208	Drugs and Society	3
HLTH 217	First Aid	2
HLTH 370	Health Psychology (or PSYC 370)	3
PEAC 120-190	*Physical Activity Courses	4
PETH 150	Coaching Sports Activities: Strength Conditioning	2
PETH 151	Coaching Sports Activities: Basketball	2
PETH 152	Coaching Sports Activities: Volleyball	2
PETH 250	Coaching Sports Activities: Soccer	2
PETH 251	Coaching Sports Activities: Gymnastics	2
PETH 252	Coaching Sports Activities: Golf/Tennis	2
PETH 261	Officiating of Sports Activities	2
PETH 262	Officiating of Sports Activities	2
PETH 278	Programming Intramural and Recreational Activities	2



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PETH 360	Advanced Principles of Coaching	2
PETH 366	Coaching Practicum	1
PETH 395	Teaching Secondary Health and Physical Education	3
PETH 473	Teaching Elementary Health and Physical Education	<u>3</u>
		42

\*Physical Activity Courses: Select 4 activities classes. One from each of the following areas: Flag Football; Racquet Sports; Aquatics; and Aerobics.

Cognates:

BIOL 121, 122, 123	Anatomy and Physiology	12
MATH 106	Introduction to Statistics	4

## FITNESS MANAGEMENT CONCENTRATION

Required Courses:

HLTH 370	Health Psychology (or PSYC 370)	3
PEAC 107-177	Physical Activity Courses*	2
PEAC 128	Jogging	1
PEAC 133	Aerobic Rhythm	1
PEAC 151	Racquetball	1
PETH 150	Coaching Sports Activities: Strength Conditioning	2
PETH 205	Water Safety Instructor's Course	2
PETH 252	Coaching Sports Activities: Tennis/Golf	2
PETH 278	Programming Intramural and Recreational Activities	2
PETH 350	Internship Placement Orientation	0
PETH 427	Fitness Evaluation Techniques	3
PETH 490	Internship in Fitness Management	12
	Electives†	<u>3</u>
		34

\*Physical Activity Courses: Physical activity courses must be chosen in consultation with and approved by the academic advisor assigned by the department chair.

†Electives must be chosen in consultation with and approved by the academic advisor.

Cognates:

ACCT 201	Principles of Accounting	4
BIOL 121, 122, 123	Anatomy and Physiology	12
CIS 140	Computer Business Applications	4
HLTH 110	Wellness for Living	3
HLTH 220	Human Nutrition	4
MGMT 371	Principles of Management	4
MKTG 381	Principles of Marketing	4

## PRE-DENTAL HYGIENE (ASSOCIATE OF SCIENCE)

Students completing the following core curriculum and the AS general studies requirements as listed in this bulletin will be awarded an AS degree in Pre-Dental Hygiene. This degree will prepare the student for admission to the Bachelor of Science degree program in Dental Hygiene at Loma Linda University and may apply to other dental hygiene programs. A cumulative grade point average of 3.00 or more is required before entering BS professional training.

### Core Requirements:

#### Natural Science (26 hours)

BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 222	Microbiology	5
CHEM 105	Survey of Chemistry	5
	College Mathematics Course (100 level or above)	4

#### Communication Skills (13 hours)

ENGL 121	College Writing I	3
ENGL 122	College Writing II	3
ENGL 223	Research Writing	3
SPCH 101	Fundamentals of Speech Communication	4

#### Humanities (16 hours)

	Courses selected from the following (Must be in a minimum of three areas): history, fine arts (theory), literature, philosophy, foreign language.	16
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#### Social Sciences (12 hours)

PSYC 130	General Psychology	4
SOCI 204	General Sociology	4
ANTH 225	Cultural Anthropology	4

#### Physical Education (5-6 hours)

PEAC 107-190	Physical Activity Courses	2
HLTH 110	Wellness for Living	
	or	3-4
HLTH 220	Human Nutrition	

Religion		8
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Electives		<u>15-16</u>
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## PRE-NUTRITION AND DIETETICS (ASSOCIATE OF SCIENCE)

Students completing the following core curriculum and the AS general studies requirements will be awarded an AS degree in Pre-Nutrition and Dietetics. This degree will prepare the student for admission to Nutrition and Dietetics at Loma Linda University and may apply to other professional programs. A cumulative

HEALTH AND PHYSICAL EDUCATION

grade point average of 3.0 or more is required before entering BS professional training.

Core Requirements:

ANTH 225	Cultural Anthropology	
	or	4
SOCI 236	Privilege and Oppression	
BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 222	Microbiology	5
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
HLTH 220	Human Nutrition	4
PEAC	Physical Education Activity Courses	2
PSYC 130	General Psychology	4
SOCI 204	General Sociology	4
SPCH 101	Fundamentals of Speech Communication	4
	Electives	12

Recommended Courses:

HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2
HLTH 208	Drugs and Society	3
HLTH 308	Community Health	
	or	3
HLTH 437	Community Nutrition	

General Studies Requirements

Humanities (Must be from 3 areas, may include foreign language)	12
Mathematics (MATH 121 or higher recommended)	4
Religion (4 credits per year)	<u>8</u>
	96

PRE-PHYSICAL THERAPY (ASSOCIATE OF SCIENCE)

Students completing the following core curriculum and the AS general studies requirements as listed in this bulletin will be awarded an AS degree in Pre-Physical Therapy. This degree will prepare the student for admission to the Doctor of Physical Therapy degree program at Andrews or Loma Linda Universities and may apply to other professional programs. For students entering the Loma Linda DPT Physical Therapy program in June 2018 and beyond, an earned Bachelor degree in any area will be required.

## Core Requirements:

BIOL 121, 122, 123	Anatomy and Physiology	12
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3
HLTH 110	Wellness for Living	
	or	3-4
HLTH 220	Human Nutrition	
MATH 106	Introduction to Statistics	4
NRSG 234	Medical Terminology	2
PETH 325	Kinesiology	
	or	4
PETH 426	Physiology of Exercise	
PSYC 130	General Psychology	4
PSYC 215	Developmental Psychology	4

## Select one of the following: (3-4)

ANTH 225	Cultural Anthropology	4
PLSC 224	American Government	4
PSYC 370	Health Psychology	3
SOCI 204	General Sociology	4
		<hr/> 61-62

## Cognates:

ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
PEAC	Physical Education Activity Courses	2
REL	Religion General Studies Courses	12
SPCH 101	Fundamentals of Speech Communication	4
	Humanities	12
	(Select from at least three subject areas: fine arts, foreign language, literature, philosophy, or history. One course must be upper division.)	—
	Total	39
	Electives bring the total to	138

A documented minimum of 80 hours of volunteer or employee work experience with a physical therapist is required before acceptance.

18 quarter hours of upper division credit is required for application.

## ATHLETIC COACHING MINOR

A student minoring in athletic coaching must complete 30 quarter hours.

## HEALTH AND PHYSICAL EDUCATION

### Required Courses:

HLTH 217	First Aid	2
	Select three of the following coaching sports activities:	6
	PETH 150, 151, 152, 250, 251, 252	
PETH 225	Prevention of Injuries	2
PETH 325	Kinesiology	4
PETH 360	Advanced Principles of Coaching	2
PETH 366	Coaching Practicum	1
PETH 425	Motor Learning	4
PETH 493	History and Philosophy of Physical Education	3
	*Electives	<u>6</u>
		30

\*Electives must be chosen from PEAC and PETH courses and approved by the Physical Education advisor.

## HEALTH MINOR

A student minoring in health must complete 30 quarter hours.

### Required Courses:

HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2
HLTH 208	Drugs and Society	3
HLTH 220	Human Nutrition	4
HLTH 315	Etiology of Selected Diseases	3
HLTH 370	Health Psychology	3
	*Electives (3 must be upper division)	<u>12</u>
		30

\*Electives may be selected from non-HLTH courses in the major requirements or electives listed for the Health Science major with no more than six hours being selected from any one discipline. Electives may also be selected from any other HLTH courses.

Approval of health advisor required.

## PHYSICAL EDUCATION MINOR

A student minoring in physical education must complete 30 quarter hours:

### Required Courses:

HLTH 110	Wellness for Living	3
HLTH 208	Drugs and Society	3
PETH 214	Introduction to Physical Education and Recreation	2
PETH 225	Prevention of Injuries	2
PETH 261	Officiating of Sports Activities	2

PETH 278	Programming Intramural and Recreational Activities	2
PETH 324	Adapted Physical Education and Recreation	3
PETH 325	Kinesiology	4
PETH 395	Teaching Secondary Health and Physical Education	3
PETH 473	Teaching Elementary Health and Physical Education	3
PETH 484	Administration of Health, Physical Education, and Recreation	3
		<hr/> 30

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the Health and Physical Education Department: HLTH, PEAC, and PETH.



# HISTORY AND PHILOSOPHY

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Gregory Dodds, Chair; Terrie Aamodt, Hilary Dickerson, Timothy Golden, Monique Vincent.

The department offers a major and minor in history as well as minors in philosophy and legal studies. The history program prepares students for a wide range of career opportunities, including teaching, graduate school, law school, civil service, and business, among many others. Students who study history not only acquire historical knowledge, but also develop critical reading, thinking, and writing abilities. The department also places a strong emphasis on teaching research and presentation skills. More broadly, and in support of the university’s mission, the study of history is vital to both understanding the present world and to learning to actively participate in civil society.

The philosophy minor encourages students to evaluate their personal philosophies within a Christian context. Students studying philosophy hone their critical thinking skills, study major figures and schools in the history of philosophy, draw connections between philosophy and other disciplines, and analyze moral, spiritual, metaphysical, epistemological, and logical questions and issues.

The legal studies minor is designed for students with an interest in a career in the legal professions and related fields, such as criminal justice. It is a particularly useful minor for any student planning to attend law school. As part of their preparation, students will study constitutional law, philosophy of law, the American government, and critical thinking, along with other legal, historical, and philosophical topics.

## HISTORY MAJOR (BACHELOR OF ARTS)

A student majoring in history must complete 58 quarter hours in the major, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students must complete and present a senior history thesis.

### Core Requirements:

HIST 221, 222	History of the United States	8
HIST 121	The West and the World	
	or	4
HIST 254	History of Christianity	

### Select one of the following (4 credits):

HIST 122	The West and the World	4
HIST 242	Modern East Asian History	4
HIST 283	Latin America	4
HIST 306	Classical Greece and Rome	4
HIST 495	Colloquium (Six quarters required; or number of quarters in residence at WWU, whichever is fewer)	0
	*Electives	28

48

\*Twenty credits must be upper-division, including eight in European history and eight in American history.

## Research Requirements:

HIST 391	The Craft of History	2
HIST 392	Historiography	3
HIST 496, 497, 498	Seminar	<u>5</u>
		10

## Cognate:

PHIL 204	Essentials of Critical Reasoning	
	or	4
PHIL 205	Introduction to Philosophy	

## EMPHASIS: PREPARATION FOR SECONDARY TEACHING IN HISTORY

Students wishing Washington State teacher certification in history must:

- fulfill certification requirements listed by the School of Education & Psychology (B.Ed.)
- complete a History major
- complete courses in this emphasis

GEOG 252	World Geography	4
HIST 122	The West and the World	4
HIST 254	History of Christianity	4
HIST 446	Pacific Northwest History	4
PLSC 224	American Government	<u>4</u>
		20

Please refer to the certification check sheet available from the School of Education & Psychology for additional information.

## HISTORY MINOR

A student minoring in history must complete 28 quarter hours.

## Required Courses:

HIST 121	The West and the World*	
	or	4
HIST 254	History of Christianity	
HIST 221, 222	History of the United States	8
Select 4 credits from the following:		4
HIST 122	The West and the World	
HIST 242	Modern East Asian History	
HIST 283	Latin America	
	Electives (8 must be upper division)†	<u>12</u>
		28

\*The HONR 131-133 sequence will fulfill The West and the World requirement, but only 8 credits will apply to history.

†Approval of history advisor required.



HISTORY AND PHILOSOPHY

LEGAL STUDIES MINOR

A student minoring in legal studies must complete 30 credit hours.

Required Courses:

PHIL 204	Essentials of Critical Reasoning	4
PHIL 305	Moral Philosophy	4
PHIL 411	Philosophy of Law	4
PHIL 440	History of Social and Political Philosophy	4
PLSC 224	American Government	4
	Electives*	<u>10</u>
		30

\*Electives must be chosen from:

COMM 357	Media Law	4
CORR 285	Introduction to Criminal Justice	4
CORR 385	Criminology	4
CORR 387	Juvenile Delinquency	3
GBUS 361	Business Law I	4
GBUS 362	Business Law II	4
LAW 420	Constitutional Law and Criminal Procedure	4
LAW 490	Internship	0-6
SPCH 341	Argumentation	4

PHILOSOPHY MINOR

A student minoring in philosophy must complete 28 credit hours:

PHIL 204	Essentials of Critical Reasoning	4
PHIL 205	Introduction to Philosophy	4
	Electives (12 must be upper division)*	<u>20</u>
		28

\*Approval of history advisor required.

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the History and Philosophy Department: HIST, PHIL, and PLSC.

# INTERDISCIPLINARY PROGRAMS

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## AUTOMOTIVE MANAGEMENT

Patience Taruwinga (Business), Rob Holm (Technology), Academic Advisors.  
The automotive management major is offered cooperatively by the School of Business and the Department of Technology.

## AUTOMOTIVE MANAGEMENT MAJOR (BACHELOR OF SCIENCE)

A student majoring in Automotive Management must complete a minimum of 115 hours in the major, which consists of the core courses and the technical requirements. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students are required to pass the A1-A8 exams prior to graduation as their exit exam.

### Technology Core Requirements:

AUTO 134	Internal Combustion Engine Theory	2
AUTO 135	Internal Combustion Engine Laboratory	2
AUTO 145	Manual Drive Trains and Axles	2
AUTO 146	Manual Drive Trains and Axles Laboratory	2
AUTO 156	Electrical Systems	2
AUTO 157	Electrical Systems Laboratory	2
AUTO 280	Practicum (automotive)	2
AUTO 314	Engine Performance	2
AUTO 315	Engine Performance Laboratory	2
AUTO 335	Suspension and Steering Systems	2
AUTO 336	Suspension and Steering Systems Laboratory	2
AUTO 337	Brake Systems and Traction Control	2
AUTO 338	Brake Systems and Traction Control Laboratory	2
AUTO 355	Climate Control Systems	2
AUTO 356	Climate Control Systems Laboratory	2
AUTO 357	Automatic Transmissions and Transaxles	2
AUTO 358	Automatic Transmissions and Transaxles Laboratory	2
AUTO 365	Diesel Engines	3
AUTO 414	Advanced Engine Performance	3
AUTO 434	High Performance Engine Tuning	3
AUTO 466	Body Electronics and Computer Systems	3
AUTO 473	Alternative Fuels	3
AUTO 480	Advanced Practicum (automotive)	2
AUTO 495	Colloquium*	0
TECH 204	Fundamentals of Electronics	4
TECH 321	Technology and Society	4
TECH 499	Senior Project	1
	Electives†	<u>4</u>

\*Open only to students of junior standing or higher. Automotive degree candidates must satisfactorily complete two quarters, at least one of which must be during the senior year.

†Electives must be chosen from TECH, GRPH, PHTO, and/or AVIA in consultation with advisor.

Business Core Requirements:

ACCT 201, 203	Principles of Accounting	7
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 204	Fundamentals of Economics	4
FINA 351	Managerial Finance	4
GBUS 263	Business Statistics	4
GBUS 361	Business Law I	4
GBUS 366	Operations Management	4
GBUS 370	Business Communication	4
MGMT 371	Principles of Management	4
MGMT 376	Human Resources Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	4
Total Business Core Requirements:		<u>51</u>
Total Automotive and Business Core Requirements:		115

Cognates:

MATH 121	Precalculus I	4
PHYS 201, 202	Conceptual Physics	6
PHYS 204, 205	Conceptual Physics Laboratory	2
SPCH 101	Fundamentals of Speech Communication	4

AVIATION MANAGEMENT

Patience Taruwinga (Business), Matthew Toelke (Technology), Philip Glendrange (Technology), Academic Advisors.

The aviation management major is offered cooperatively by the School of Business and the Department of Technology.

AVIATION MANAGEMENT MAJOR  
(BACHELOR OF SCIENCE)

A student majoring in Aviation Management must complete a minimum of 110 quarter hours in the major consisting of the core courses and the technical requirements. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

The aviation program trains students using a Part 61 Federal Aviation Administration (FAA) training course outline. A specified level of mastery and progress is required to complete the academic courses, earn flight certificates and ratings, and continue in the program. To be successful in training and in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. Students will be allowed to register for flight classes based on performance in prerequisite classes. Due to the

demanding and unforgiving nature of aviation operations, the Chair of the Technology department in consultation with the aviation faculty may dismiss students from aviation classes at any time. Reasons for such action may include, but are not limited to, the following: reckless operations, safety concerns or violations, security concerns raised by foreign and domestic background information, excessive cancellations, or documented progress delays in training due to student's teach-ability, skill, or retention of knowledge.

## WWU AVIATION STANDARD OPERATING PROCEDURES

Walla Walla University Aviation Standard Operating Procedures are given to all aviation students. Students have the responsibility to acquaint themselves with the contents and are held accountable for all policies therein. Students found to be in violation of the WWU Aviation Standard Operating or judged to be unsafe will be removed from the flight schedule and will be subject to dismissal as aviation majors.

All flight courses require progress and a level of mastery for course completion, earning flight certificates and ratings, and continuation in the program. Students will be allowed to register for flight classes based on performance in prerequisite classes. To be successful in training an in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. In the aviation industry character is evaluated based on an applicant's driving and/or criminal record. Excessive movement infractions, driving while under the influence, suspension or revocation of a driver's license, or a pattern of criminal activity are all viewed as terms of "moral character." The aviation program recognizes that people can change and these items are not immediately disqualifying, but future employers will consider them, and an applicant with a background must be prepared to work hard to show change.

Students are solely responsible for their own transportation to agencies used for educational experience. The use of ground transportation is essential for each student to reach the Walla Walla Regional Airport where the WWU flight center is located. Transportation costs, including auto insurance and liability, are the student's responsibility.

Once a student is enrolled at WWU in the Aviation Management Major program all subsequent flight training required as part of the student's course of study must be completed in residence at WWU in WWU aircraft unless otherwise approved by the Aviation Faculty. Flight training completed away from WWU will not be given credit for the corresponding WWU course.

Students that complete a Private Pilot Certificate or higher prior to enrollment at WWU will be required to take AVIA 225, Pilot Orientation, their first quarter.

All flight courses have additional expenses. Please see the current WWU financial bulletin for details.

### Technology Core Requirements:

AVIA 125	Air Traffic Control & Airspace	2
AVIA 140	Survey of Aviation	1
AVIA 141	Private Pilot Lectures	4
AVIA 142	Private Pilot Flight Training I	2
AVIA 143	Private Pilot Flight Training II	2
AVIA 144	Private Pilot Flight Training III	2

## INTERDISCIPLINARY PROGRAMS

AVIA 234	Aviation Weather	2
AVIA 256	Aircraft Systems and Basic Maintenance	4
AVIA 261	Instrument Pilot Lectures	4
AVIA 262	Instrument Flight Training	3
AVIA 263	Advanced Instrument Flight Training	3
AVIA 264	Cross Country Flight	2
AVIA 270	Aviation Human Factors	2
AVIA 325	Advanced Cross Country Flight	2
AVIA 334	Commercial Pilot Lectures	4
AVIA 335	Commercial Flight Training	3
AVIA 336	Advanced Commercial Flight Training	3
AVIA 340	Multi-Engine Flight Training	3
AVIA 355	Aviation Safety	2
AVIA 496	Senior Seminar	2
TECH 380	Space Planning and Design	3
TECH 499	Senior Project	1

Choose 6 credits from the following:

AVIA 280	Practicum	1-6; 6
AVIA 337	Mission/Humanitarian Flight Training	2
AVIA 356	Principles of Flight Instruction	2
AVIA 357	Flight Instructor Flight Training	2
AVIA 358	Advanced Flight Instructor Training	3
AVIA 450	Aviation Law and Regulations	2
AVIA 455	Crew Resource Management	2
AVIA 458	Instrument Instructor Flight Training	2
AVIA 460	Multi-Engine Instructor Flight Training	2
AVIA 480	Advanced Practicum	<u>1-6; 6</u>
		62

Business Core Requirements:

ACCT 201, 202, 203	Principles of Accounting	10
CIS 140	Business Analytics with Microsoft Excel and Access	4
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
FINA 351	Managerial Finance	4
GBUS 161	Business Basics	2
GBUS 361	Business Law I	4
GBUS 463	Business Ethics	4
MGMT 371	Principles of Management	4
MGMT 489	Strategic Management	4
MKTG 381	Principles of Marketing	<u>4</u>
Total Business Core Requirements:		<u>48</u>
Total Technology and Business Core Requirements:		110

Cognates:

PHYS 201, 202	Conceptual Physics	6
PHYS 204, 205	Conceptual Physics Laboratory	2
SPCH 101	Fundamentals of Speech Communication	4

## BIOCHEMISTRY

Kyle Craig (Chemistry), David Lindsey (Biology), Academic Advisors.

The biochemistry major is offered cooperatively by the departments of biology and chemistry.

## BIOCHEMISTRY MAJOR (BACHELOR OF SCIENCE)

A student majoring in biochemistry must complete a minimum of 85 quarter credit hours of biology and chemistry courses, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Credits applied towards the biochemistry major will not apply towards a biology or chemistry major or minor. Senior students are required to take the MFT (Major Field Test) in Chemistry, as well as the American Chemical Society Biochemistry standardized exam (given during CHEM 431, 432, 433 sequence). Transfer credit accepted towards the biochemistry major must be from the major's courses at the institution originating the credit.

### Major Requirements:

BIOL 141, 142, 143	General Biology	12
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 383	Cell Biology III: Genomics and Regulation	4

### Select 4 credits from the following:

BIOL 445	Advanced Microbiology	4
BIOL 464	Animal Physiology	4
BIOL 466	Immunology	4
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 301	Chemical Equilibrium and Analysis	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 350 and 352	Physical Chemistry	6
	or	
CHEM 352 and 353	Physical Chemistry	
CHEM 383	Intermediate Organic Chemistry and	5
CHEM 386	Microscale Organic Laboratory or	
CHEM 429	Organic Structural Problems	4
CHEM 405	Integrated Chemistry Lab	4
CHEM 431, 432, 433	Foundations of Biochemistry	10
CHEM 496, 497, 498	Chemistry Seminar	3

## INTERDISCIPLINARY PROGRAMS

BIOL 416	Research in Biology	
	or	2
CHEM 479	Directed Research/Project Electives*	<u>3</u>
		85

\*Electives must be chosen from the following:

BIOL 430	Molecular Biology Techniques	4
BIOL 435	Developmental Biology	4
BIOL 445	Advanced Microbiology	4
BIOL 464	Animal Physiology	4
BIOL 466	Immunology	4
BIOL 470	Biophysics (or PHYS 470)	4
CHEM 302	Analytical Instrumental Methods	4
CHEM 350	Physical Chemistry	
	or	3
CHEM 353	Physical Chemistry	
CHEM 427	Organic Structure and Mechanisms	3
CHEM 429	Organic Structural Problems	4
CHEM 442	Inorganic Chemistry	4
BIOL 416	Research in Biology	
	or	1-2; 2
CHEM 479	Directed Research/Project	

CHEM 302, 350, 353, 427, 442: These CHEM courses have a corequisite of CHEM 405. As a result, up to two additional quarters of CHEM 405 may be applied as elective credit.

Cognates:

BIOL 250	Biostatistics	
	or	4
MATH 106	Introduction to Statistics	
MATH 181, 281	Calculus I, II	8
PHYS 211, 212, 213	General Physics	
PHYS 214, 215, 216	General Physics Laboratory	
	or	12
PHYS 251, 252, 253	Principles of Physics	
PHYS 254, 255, 256	Principles of Physics Laboratory	

## BIOENGINEERING SCIENCE

Larry Aamodt, Director; Janice McKenzie, Joan Redd.

Students majoring in bioengineering will take courses designed to insure a broad preparation in engineering and biological fundamentals, mathematics, and the physical sciences. Majors will concentrate their studies in an area consistent with their career goals. Electives will be chosen by each student in conference with an

assigned advisor from among the members of the bioengineering committee. Each student must receive approval of his/her program from the committee at the beginning of the junior and senior years. Since the bioengineering curriculum is designed to provide a foundation for graduate studies, students whose grade-point averages fall below 3.00 will be encouraged to reconsider their career objectives.

Requirements for bioengineering science include a minimum of 73 quarter hours in the major with at least 60 quarter hours specifically in engineering or biology, plus the required cognates, and the general studies program for the baccalaureate degree as outlined in this bulletin. A course in speech communication is highly recommended. All majors must take the Graduate Record Examination general section.

## BIOENGINEERING SCIENCE MAJOR (BACHELOR OF SCIENCE)

Core Requirements (41 credits):

BIOL 141, 142, 143	General Biology	12
BIOL 216, 316	Introduction to Biological Research I, II	6
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 416	Research in Biology	1-4;4
BIOL 495	*Colloquium (2-4 Quarters)	0
CPTR 141	Fundamentals of Programming I	4
ENGR 120	Introduction to Bioengineering	2
ENGR 221, 222, 223	Engineering Mechanics	9
ENGR 228	Circuit Analysis	4
ENGR 495	*Colloquium (2-4 Quarters)	0

\*2-4 quarters each. Six quarters of Colloquium are required.

Electives: A total of 32 credits must be chosen between Core Elective, Bioengineering Electives, and Electives.

Core Electives (Choose one of the following courses) (4 credits):

ENGR 321	Mechanics of Materials	4
ENGR 331	Fluid Mechanics	4
ENGR 350	Linear Systems Analysis	4

Bioengineering Electives (8 credits):

BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 470	Biophysics (or PHYS 470)	4
CHEM 301	Chemical Equilibrium and Analysis	3
CHEM 350	Physical Chemistry	4
	or	
PHYS 310	Modern Physics I	3
	and	
PHYS 314	Modern Physics I Laboratory	1
CHEM 431	Foundations of Biochemistry	4
CPTR 142	Fundamentals of Programming II	4
PHYS 312	Physical Electronics	3



INTERDISCIPLINARY PROGRAMS

	and	
PHYS 315	Physical Electronics Laboratory	1
PHYS 313	Thermodynamics	4
Electives (20 credits, 17 must be upper-division):		
BIOL	Selected Courses	8-12
ENGR	Selected Courses	8-12
	Technical Electives	0-4
	Selected courses from MATH, PHYS, CHEM, CPTR	—
Electives must be approved by the Bioengineering Committee after consideration of the total student program.		73

Cognates:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry*	8
CHEM 324, 325	Organic Chemistry Laboratory	2
MATH 181, 281-283	Calculus I-IV	16
MATH 312	Ordinary Differential Equations	4
MATH 315	Probability and Statistics	4
PHYS 251, 252, 253	Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Laboratory	3

\*While the first two quarters are required as cognates for the major, a complete, year-long sequence may be necessary to fulfill course prerequisites or requirements for advanced studies.

BIOPHYSICS

Roy Campbell (Physics), David Lindsey (Biology), Academic Advisors.

The biophysics major is offered cooperatively by the departments of biology and physics. For entrance, 30 semester periods of secondary mathematics chosen from algebra, plane and solid geometry, and trigonometry are required.

BIOPHYSICS MAJOR (BACHELOR OF SCIENCE)

A student majoring in biophysics must complete a minimum of 68 quarter hours of biology and physics courses, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Tests in Biology or Physics. A summer term at the Rosario Beach Marine Laboratory is highly recommended.

Required Courses:

BIOL 141, 142, 143	General Biology	12
BIOL 216	Introduction to Biological Research I	3
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 430	Molecular Biology Techniques	
	or	4

BIOL 445	Advanced Microbiology	
BIOL 495	Colloquium*	0
BIOL	Upper Division Electives in Biology	4
PHYS 251, 252, 253	Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Laboratory	3
PHYS 310, 311	Modern Physics I, II	6
PHYS 313	Thermodynamics	4
PHYS 314, 316	Modern Physics Laboratory I, II	2
PHYS 331	Introduction to Nanotechnology	3
PHYS 332	Introduction to Nanotechnology Laboratory	1
PHYS 340	Introduction to Matlab and Mathematica	2
PHYS 414	Experimental Physics I	1
PHYS 470	Biophysics	4
PHYS	Upper Division Electives in Physics	<u>3</u>
		68

\*Required each quarter of juniors and seniors while in residence.

Cognates:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 431, 432	Foundations of Biochemistry	8
CPTR 141	Fundamentals of Programming I	4
MATH 181, 281-283	Calculus I-IV	16
MATH 312	Ordinary Differential Equations	4
MATH 315	Probability and Statistics	
	or	4
BIOL 250	Biostatistics	<u></u>
		58

## HUMANITIES AND MULTI-DISCIPLINARY STUDIES

Gregory Dodds, chair

The major in humanities and multi-disciplinary studies is founded on the following three principles: multidisciplinary study, customization, and academic rigor. The major is specifically designed for students who are seeking to combine professional or technical training in another discipline with strong training in writing and the humanities.

Most majors focus on a specific discipline and type of academic study. This major fills a unique niche by providing a customizable course of study to meet the needs of students with a broad range of interests. A student majoring in humanities and multi-disciplinary studies might be pursuing a career in medicine, dentistry, science, law, business, or a variety of pre-professional programs. The curriculum

INTERDISCIPLINARY PROGRAMS

allows credits from courses in both the humanities and a variety of other programs to count towards the completion of the major.

Students who wish to major in humanities and multi-disciplinary studies will need to develop, in consultation with the major advisor, a proposed curriculum that meets both their own educational objectives and the requirements as stated below. This proposed curriculum needs to have a coherent academic focus and will be approved by the Humanities and Multi-Disciplinary Studies Faculty Committee. Students will also be required to complete a senior research thesis under the direction of a faculty mentor.

HUMANITIES AND MULTI-DISCIPLINARY STUDIES  
(BACHELOR OF ARTS)

A student majoring in humanities and multi-disciplinary studies must complete 83 quarter hours made up of the core requirements, the required number of electives in the humanities and sciences, and the required number of additional electives pertaining to the student’s chosen focus of study and senior thesis project.

Core Requirements (59)

12 Credits of History and Literature from the following courses  
(at least 4 credits from HIST and 4 credits from ENGL):

ENGL 210, 211, 212	Survey of British and American Literature	4, 4, 4
HIST 121, 122	The West and the World	4, 4
HIST 221, 222	History of the U.S.	4, 4
HIST 242	Modern East Asian History	4
HIST 254	History of Christianity	4
HIST 283	Latin America	4
	OR	
HONR 131, 132, 133	Western Thought	12
4 Credits of Writing from:		
WRIT 324	Creative Nonfiction Writing	4
WRIT 334	Poetry Writing	4
4 Credits of Philosophy from:		
PHIL 305	Moral Philosophy	4
PHIL 310	Philosophy of the Bible	4
PHIL 440	History of Social and Political Philosophy	4
4 Credits of Literature from		
any Upper-Division General Studies Literature Course		
4 Credits of Sociology:		
SOCI 236	Privilege and Oppression	4
4 Multi-Disciplinary Credits:		
HMNT 360	Science and Human Investigation	4
12 Credits of Science from One of the Following Sequences:		
BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 141, 142, 143	General Biology	12

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3
PHYS 251, 252, 253	Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Laboratory	3
4 Credits of Quantitative Reasoning from:		
BIOL 250	Biostatistics	4
GBUS 263	Business Statistics	4
MATH 106	Introduction to Statistics	4
MATH 131	Calculus for the Life Sciences I	4
MATH 181	Calculus I	4
9 Credits of Research:		
HMNT 391	Introduction to Scholarship I	2
HMNT 392	Introduction to Scholarship II	2
HMNT 496, 497, 498	Seminar	5
2 Credits of Experiential Learning:		
HMNT 490	Experiential Learning	2
Elective Requirements (24)		
Humanities Electives*		8
Science, Social Science, Technology, Engineering, Math, and the Professions†		8
Additional Electives Pertaining to Chosen Focus and Project‡		8
		83

\*Humanities electives must be chosen in consultation with both the director of Humanities and Multidisciplinary Studies and the supervising professor(s) whose expertise relates to the student's chosen focus of study. 4 credits must be upper-division. May be chosen from art, English, history, languages, music, religion, philosophy, theology.

†Choose from biology, business, chemistry, communication, computer science, education, engineering, psychology, health, mathematics, nursing, physical education, physics, social work, sociology, technology. 4 credits must be upper-division.

Students are allowed broad choice in this category of electives in order to shape their focus of study. These electives, however, must be chosen in consultation with both the director of Humanities and Multi-Disciplinary Studies and the supervising professor(s) whose expertise relates to the student's chosen focus.

‡Students may propose other courses that help them meet their educational/career goals. These electives must be chosen in consultation with both the director of Humanities and Multi-Disciplinary Studies and the supervising professor(s) whose expertise relates to the student's chosen focus of study and thesis project. 4 credits must be upper-division.

INTERDISCIPLINARY PROGRAMS

INFORMATION SYSTEMS

Jonathan Duncan (Computer Science), Patience Taruwinga (Business), Academic Advisors.

The information systems major is offered cooperatively by the School of Business and the Computer Science Department.

INFORMATION SYSTEMS MAJOR (BACHELOR OF SCIENCE)

The information systems major serves those students who want a career that focuses on the integrating information technology solutions and business processes to meet the information needs of businesses and other enterprises, enabling them to achieve their objectives in an effective, efficient way. The program prepares graduates for a variety of IS careers in business, government, and non-profit organizations.

A student majoring in information systems must complete the core requirements and cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students will take an internal Concentration Exam.

Computer Science Core Requirements:

CPTR 141, 142	Fundamentals of Programming I, II	8
CPTR 210	Data Communication and Networks	3
CPTR 211	Linux and Windows System Administration	3
CPTR 320	Web Services and Cloud Computing	4
CPTR 420	Introduction to Database Systems	4
CPTR 440	Computer Security	4
	Computer Science Electives*	<u>4</u>
	Total Computer Science Core Credits:	30

\*Computer Science electives must be chosen from courses with prefix CPTR.

Business Core Requirements:

ACCT 201	Principles of Accounting	4
ACCT 341	Accounting Information Systems	4
CIS 140	Business Analytics with Microsoft Excel and Access	4
CIS 220	Web Application Development (or CPTR 220)	4
CIS 301	Information Systems and Business Intelligence	4
GBUS 263	Business Statistics	4
GBUS 366	Operations Management	4
GBUS 370	Business Communication	4
GBUS 463	Business Ethics	4
CIS 490*	Internship	0-4
MGMT 371	Principles of Management	4

# INTERDISCIPLINARY PROGRAMS

MGMT 380	Principles of Project Management (or MKTG 380)	4
	Business Electives†	<u>0-4</u>
	Total Business Core Credits:	48
GBUS/ENGR 495	Colloquium‡	<u>0</u>
	Total Credit Hours:	78

\*Or any of the following: ACCT 490, FINA 490, GBUS 490, MGMT 490, LAW 490, and MKTG 490.

†Business electives may be chosen from courses with prefixes ACCT, CIS, ECON, FINA, GBUS, MGMT, or MKTG.

‡Three quarters required or number of quarters in residence as a declared information systems major at WWU, whichever is less.

## Cognates:

MATH 181	Calculus I*	4
MATH 250	Discrete Mathematics	4
SPCH 101	Fundamentals of Speech Communication	4
TECH 321	Technology and Society	4

\*Prerequisites Required

# MATHEMATICS

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Jonathan Duncan, Chair; John Foster, Benjamin Jackson, Ross Magi, Timothy Tiffin.

The Department of Mathematics offers programs leading to the Bachelor of Arts and Bachelor of Science degrees. It is highly recommended that mathematics majors have four years of high school mathematics.

## MATHEMATICS MAJOR (BACHELOR OF ARTS)

A student majoring in mathematics must complete 48 quarter hours in the major. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Major Field Test (MFT) in mathematics.

### Major Requirements:

MATH 131	Calculus for the Life Sciences I	
	or	4
MATH 181	Calculus I	
MATH 281-283	Calculus II-IV	12
MATH 250	Discrete Mathematics	4
MATH 289	Introduction to Linear Algebra	3
MATH 312	Ordinary Differential Equations	4
MATH 396, 397	Junior Mathematics Seminar	0
MATH 451	Real Analysis	4
MATH 461	Abstract Algebra	4
MATH 496, 497	Senior Mathematics Seminar	2
	*Electives (must include either MATH 452	11
	or MATH 462; 8 must be upper division)	
		<hr/>
		48

\*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair. Credit will not be given toward the major for mathematics courses with numbers below 131 or for MATH 132. Students seeking a teaching endorsement should consult with the certification officer in the School of Education and Psychology.

### Cognate:

CPTR 141	Fundamentals of Programming I	4
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## MATHEMATICS MAJOR (BACHELOR OF SCIENCE)

A student majoring in mathematics must complete 60 quarter hours in the major, consisting of the core requirements and one of four concentrations. In addition, the student must complete the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. A student contemplating graduate work is encouraged to take a foreign language sequence. Senior students are required to take the Major Field Test (MFT) in mathematics.

### Core Requirements:

MATH 131	Calculus for the Life Sciences I
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	or	4
MATH 181	Calculus I	
MATH 281-283	Calculus II-IV	12
MATH 250	Discrete Mathematics	4
MATH 289	Introduction to Linear Algebra	3
MATH 312	Ordinary Differential Equations	4
MATH 396, 397	Junior Mathematics Seminar	0
MATH 496, 497	Senior Mathematics Seminar	<u>2</u>
		29

Cognates:

(For all concentrations except Actuarial Studies)

CPTR 141	Fundamentals of Programming I	4
PHYS 251, 252, 253	Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Laboratory	3

Select one of the following sequences:

BIOL 141, 142, 143	General Biology	12
	or	
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
	or	
CPTR 142	Fundamentals of Programming II	4
CPTR 242	Sequential and Parallel Data Structures and Algorithms	4
CPTR	One Additional CPTR Course	3-4

CONCENTRATION: ACTUARIAL STUDIES

This option prepares the student to take the first actuarial examination. Students preparing for the second examination should consult with their advisors.

Required Courses:

MATH 215	Data Analysis	4
MATH 315	Probability and Statistics	4
MATH 316	Mathematical Statistics	4
MATH 451, 452	Real Analysis	7
MATH	*Electives	<u>12</u>
		31

Actuarial Studies Cognates:

CPTR 141	Fundamentals of Programming I	4
ACCT 201, 202	Principles of Accounting	7
ECON 210	Principles of Microeconomics	4
ECON 211	Principles of Macroeconomics	4
FINA 351	Managerial Finance	4
FINA 365	Risk and Insurance	4
FINA 441	Financial Markets and Institutions	4



MATHEMATICS

CONCENTRATION: APPLIED MATHEMATICS

Required Courses:

MATH 215	Data Analysis	4
MATH 315	Probability and Statistics	4
MATH 341	Numerical Analysis	4
MATH 413	Partial Differential Equations	4
MATH	*Electives (must include at least two of MATH 451, MATH 452, MATH 461, or MATH 462; 9 must be upper division)	<u>15</u>
		31

CONCENTRATION: PREPARATION FOR GRADUATE STUDY IN MATHEMATICS

Required Courses:

MATH 389	Linear Algebra	4
MATH 451, 452, 453	Real Analysis	10
MATH 461, 462, 463	Abstract Algebra	10
MATH	*Electives	<u>7</u>
		31

CONCENTRATION: PREPARATION FOR SECONDARY TEACHING IN MATHEMATICS

Required Courses:

MATH 215	Data Analysis	4
MATH 315	Probability and Statistics	4
MATH 321	Survey of Geometries in their Historical Contexts	4
MATH 451	Real Analysis I	4
MATH 461	Abstract Algebra	4
MEDU 395	Methods of Teaching Mathematics	3
MATH	*Electives (2 must be upper division)	<u>11</u>
		34

\*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair. Credit will not be given for mathematics courses with numbers below 131 or for MATH 132. Students seeking a teaching endorsement should consult with the certification officer in the School of Education and Psychology.

## MATHEMATICS MINOR

A student minoring in mathematics must complete 28 quarter hours:

Required Courses:

\*Electives (6 must be upper division) 28

\*Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair. Credit will not be given towards the minor for mathematics courses with numbers below 131.

Because of the unique nature of the professional curriculum of the engineering degree, any mathematics course taken to meet any requirement for the BSE degree is considered a cognate and therefore can be simultaneously counted toward the credit requirements for a mathematics minor.

## MINOR IN MATHEMATICS FOR MIDDLE SCHOOL TEACHERS

Required Courses:

MATH 112, 113	Mathematics for Elementary Teachers	6
MATH 131	Calculus for the Life Sciences I	
	or	4
MATH 181	Calculus I	
MATH 281, 282	Calculus II, III	8
MATH 215	Data Analysis	4
MATH 250	Discrete Mathematics	4
MATH 289	Introduction to Linear Algebra	3
MATH 321	Survey of Geometries in their Historical Contexts	<u>4</u>
		33

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the Mathematics Department: MATH, MDEV, and MEDU.

# MUSIC

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Cristian Neacsu, Chair; Brandon Beck, Jinhyang Park, Kraig Scott.

Instruction and experiences in music are provided to prepare students for careers in music, guide in the development of performance skills, heighten aesthetic sensitivity, and enhance the cultural setting of both campus and community.

The department offers the Bachelor of Arts and Bachelor of Music degrees. In each the main purpose is to develop in the student a conceptual understanding of historical and theoretical perspectives in music and their interrelationships as they affect listening, composing, and performing.

The Bachelor of Music degree is a professional program with a choice of two majors: Music Education or Music Performance. The Bachelor of Arts is a liberal arts degree. Formal acceptance as a music major or minor is accomplished by passing a performance audition before the music faculty and completing the Theory I and Ear Training 1 sequence of classes.

Requirements for minimum piano proficiency must be completed before students can be advanced to upper-division performance standing in their major applied area. Students whose major performance emphasis is in a keyboard instrument are exempt from this requirement. Standing as a music major or minor is a prerequisite for enrollment in upper-division music courses.

All students pursuing music degree programs will participate in a primary departmental music organization (ensemble) during each quarter in residence. Music minors must participate in a primary music organization during each quarter that they take lessons from departmental faculty. All students will enroll for either credit or zero credit. University Singers (MUPF 215) serves as the primary ensemble for students whose performance area is voice; Wind Symphony (MUPF 255) for brass, wind, and percussion students; Symphony Orchestra (MUPF 266) for string students.

The department lists a number of requirements for its majors which must be met without credit. These include concert and recital attendance, and performance classes. Detailed information regarding these and other requirements is included in the Handbook for Music Students and Teachers, available online at [music.wallawalla.edu](http://music.wallawalla.edu).

Transfer students majoring in music must take a minimum of six quarter hours in applied music at Walla Walla University. All majors must continue study in their primary applied area until completion of the Senior Recital.

Senior students are required to take the Music MFT (as a departmental exit exam), and an exit survey.

## MUSIC EDUCATION (BACHELOR OF MUSIC)

A student majoring in music education must complete a total of 192 quarter hours, including all baccalaureate degree requirements as outlined in this bulletin, the major core requirements and one emphasis, as well as the bachelor of music general studies requirements and certification requirements as outlined below. This curriculum provides for K-12 state teaching certification. Students who are considering graduate studies are strongly encouraged to take the general GRE.

**Bachelor of Music General Studies Requirements:**

ENGL 121, 122	College Writing I, II	
	or	6
ENGL 141, 142	Advanced College Writing I, II	
ENGL 223	Research Writing	3
SPCH 101	Fundamentals of Speech Communication	4
HIST 121, 122	The West and the World	8
HLTH	*Health	2
PEAC	Physical Education Activity Courses	2
	*Social Science Elective	4
	*Mathematics	4
	*Natural Science	8
RELB, RELH, RELT	*Religion and Theology	<u>18</u>
		59

\*As required by general studies. Adventist Education certification requires specific classes in Health, Religion, and Theology. See Education and Psychology section of this bulletin.

**Core Requirements:**

MUCT 121, 122, 123	Theory I	9
MUCT 124	Music Notation Lab	1
MUCT 131, 132, 133	Ear Training I	3
MUCT 221, 222, 223	Theory II	9
MUCT 231, 232, 233	Ear Training II	3
MUCT 424	Form and Analysis	3
MUCT 425	Orchestration	3
MUCT 426	Counterpoint	3
MUHL 134	World Music	4
MUHL 321, 322, 323	History of Music	12
MUPF 361	Basic Conducting	2
MUPF	Organizations	10
MUPF 487	Senior Recital: Music Major	<u>0</u>
	Total Credit Hours:	62

**MUSIC EDUCATION TEACHER CERTIFICATION**

Students wishing teacher certification must take the following courses and fulfill certification requirements as listed by the School of Education and Psychology.

**Required Courses:**

MUED 395	Elementary School Music Methods and Materials	3
MUED 396	Secondary Music Methods	3

MUSIC

MUSIC EDUCATION EMPHASES (INSTRUMENTAL, CHORAL)

State certification is available in choral or instrumental music. (Note that the choral emphasis includes additional keyboard studies.) Guidelines for both options are available from the School of Education and Psychology. Students choose one of the following two emphases, depending on their certification goals:

Instrumental Emphasis

MUED	Instrumental Techniques and Methods Classes	8
MUPF	*Applied Music	20
MUPF	Voice Performance Studies	1
MUPF	Conducting	<u>6</u>
		35

Choral Emphasis

MUED 251-253	Singer's Diction	3
MUED 354	Vocal Techniques and Methods	3
MUPF	*Applied Music	20
MUPF	Keyboard Performance Studies	6
MUPF	Conducting	<u>6</u>
		38

\*The student will choose these hours, eight of which must be upper-division, in one applied field. The upper-division hours must be distributed over at least three quarter hours. A maximum of three hours of MUPF 127 may apply to the major. Students who reach a high level of proficiency may, with music faculty approval and guidance, complete this requirement by electing courses which will strengthen their preparedness in other areas within the music field. In no case will the student take fewer than 15 quarter hours in one applied field.

MUSIC PERFORMANCE (BACHELOR OF MUSIC)

A student majoring in music performance must complete 107 quarter hours in the major, 9 quarter hours in a primary performance emphasis, 65 hours in bachelor of music general studies as listed below, and all baccalaureate degree requirements as outlined in this bulletin. (This curriculum does not result in state teaching certification.) Students who are considering graduate study are strongly encouraged to take the general GRE.

Bachelor of Music General Studies:

ENGL 121, 122	College Writing I, II	
	or	6
ENGL 141, 142	Advanced College Writing I, II	
ENGL 223	Research Writing	3
FREN 101, 102, 103	Elementary French	
	or	12
GRMN 101, 102, 103	Elementary German (German recommended)	
HIST 121, 122	The West and the World	8

	Humanities (non-fine arts)	4
	*Mathematics	4
	*Natural Science	8
PEAC	Physical Education Activity Courses	2
RELB, RELH, RELT	*Religion and Theology	<u>18</u>
		65

\*As required by general studies.

#### Music Performance Core Requirements:

MUCT 121, 122, 123	Theory I	9
MUCT 131, 132, 133	Ear Training I	3
MUCT 124	Music Notation Lab	1
MUCT 221, 222, 223	Theory II	9
MUCT 231, 232, 233	Ear Training IIs	3
MUCT 335	Composition	3
MUCT 424	Form and Analysis	3
MUCT 425	Orchestration	3
MUCT 426	Counterpoint	3
MUHL 134	World Music	4
MUHL 321, 322, 323	History of Music	12
MUPF 361	Basic Conducting	2
MUPF	Conducting (other)	2
MUPF	Organizations	11
MUPF	*Applied Music (one area)	36
MUPF 387	Junior Recital	0
MUPF 487	Senior Recital: Music Major	0
	Electives	<u>3</u>
		107

\*Twenty hours in the primary performance area must be upper division and must be distributed over at least five quarters. MUPF 127 may not apply to the core requirement.

Electives must be chosen in consultation with and approved by the academic advisor.

#### Piano Emphasis:

MUPF 127	Organ or Harpsichord	1-2; 3
MUPF 276	Accompanying Practicum	1; 3
MUPF 351	Advanced Keyboard Skills	1; 3
MUED 333	Piano Pedagogy & Literature: Piano	<u>3</u>
		9

#### Organ Emphasis:

MUPF 127	Piano or Harpsichord	1-2; 3
MUPF 276	Accompanying Practicum	1; 3

## MUSIC

MUPF 351	Advanced Keyboard Skills	1; 3
MUED 333	Piano Pedagogy & Literature: Piano	<u>3</u>
		9
Instrumental Emphasis:		
MUPF 285	Ensemble	1; 6
MUPF 127	Applied Lessons	<u>1-2; 3</u>
		9
Voice Emphasis:		
MUPF 127	Applied Lessons	1-2; 3
MUED 251, 252, 253	Singer's Diction	1, 1, 1
MUED 354	Vocal Techniques and Methods	<u>3</u>
		9

## MUSIC MAJOR (BACHELOR OF ARTS)

A student majoring in music must complete 66 quarter hours in the major, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students who are considering graduate study are strongly encouraged to take the general GRE.

### Major Requirements:

MUCT 121, 122, 123	Theory I	9
MUCT 131, 132, 133	Ear Training I	3
MUCT 221, 222, 223	Theory II	9
MUCT 231, 232, 233	Ear Training II	3
MUHL 321, 322, 323	History of Music	12
	*Electives (10 credits must be upper division)	15

\*Electives must be chosen in consultation with and approved by the academic advisor.

### Choose one of the following course groups:

MUPF	Applied Music (one area) <sup>1</sup>	15
MUPF 487	Senior Recital: Music Major	0
	or	
MUPF	Applied Music (one area) <sup>2</sup>	12
MUHL 479	Directed Research/Project	<u>3</u>
		66

<sup>1</sup> A maximum of 3 hours of MUPF 127 may apply to the major. Six hours in the primary performance area must be upper-division and must be distributed over at least three quarters.

<sup>2</sup> A maximum of 3 hours of MUPF 127 may apply to the major. With faculty permission, a conducting or research project may be substituted for the senior recital. In this case, 3 hours in the primary performance area must be upper division, and the project credits must be distributed over at least three quarters.

## MUSIC MINOR

A student minoring in music must complete 30 quarter hours:

### Required Courses:

MUCT 121, 122, 123	Theory I	9
MUCT 131, 132, 133	Ear Training I	3
MUHL 124	Introduction to Music	
	or	4
MUHL 134	World Music	
MUPF	*Applied Music (one area)	8
	Electives (2 must be upper-division)	<u>6</u>
		30

\*A maximum of 3 hours of MUPF 127 may apply to the minor. Three hours must be upper division. Participation in an ensemble appropriate to the applied area is required during each quarter of applied music studies.

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the Music Department: MUCT, MUED, MUHL, and MUPF.





# NONDEPARTMENTAL

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## INTERNSHIP PROGRAM

In selected programs, students may blend their academic study with career-related, paid or unpaid, productive employment in business, industry, government, or social agencies. Internships, full or part-time, are arranged by students and their academic department. Duration of appointments is typically one quarter but may be extended or repeated. One credit hour of internship is equal to 30 work hours. An accurate and complete file is coordinated and maintained by the Student Development Center. Supervision and evaluation are the responsibility of the internship advisor in the student's major field of study, the student's employer, and the Student Development Center.

**Participants in the Internship Program may gain valuable work experience while earning university credit. For more information, students may contact their academic departments and the Student Development Center.**

### Program Guidelines

The following are academic guidelines for the Internship Program: (1) a minimum of 30 hours of approved activity/experience must be completed to have an internship experience recorded on the academic transcript; (2) for each credit earned, a minimum of 30 hours of approved activity must be completed; (3) the internship experience/credit is restricted to the major or minor. A course fee will be charged for students who enroll for 0 credit.

## LIBERAL STUDIES (ASSOCIATE OF SCIENCE)

A student taking the liberal studies AS degree must complete 96 credits including all BS degree general studies requirements with the exception that only 8 credits of general studies religion is required for the AS degree. This degree cannot be awarded in conjunction with another degree.

### Admission requirements

- Have completed a minimum of 45 quarter credits from a regionally accredited college
- Have a cumulative GPA of 2.0 or above on all post-secondary coursework

**See page 234 for a list of course descriptions.** Look for the following prefixes to find Nondepartmental courses: CDEV, SMTF, GNRL, and RDNG.

# SCHOOL OF NURSING

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Lucille Krull, Dean; Kari Firestone, Associate Dean; Emilie Butler, Debbie Lampson, Deanna Ludwig-Bos, Michelle MacLachlan, Eunice Muriu, Michaelynn Paul, Karen Tetz, Lynn Wagner, Victoria Wilson.

The School of Nursing offers a four-year program leading to a baccalaureate degree with a major in nursing. The purpose of the program is to prepare professional nurses to function in a variety of settings and to provide foundation for graduate study.

The freshmen and sophomore years of the nursing curriculum are completed on the College Place campus and include a combination of general studies, nursing cognates, and sophomore-level nursing courses. The junior and senior years are completed on the Portland, Oregon campus. A limited number of students who have completed the required prerequisites and cognate courses may be eligible to apply to complete the sophomore nursing courses during the summer term on the Portland campus.

The Portland campus is located adjacent to Adventist Medical Center. The nursing education building houses faculty offices, classrooms, and the library. The Howard F. Hansen Hall is the residence for students on the Portland campus.

The School of Nursing has contractual agreements for student clinical experiences in a variety of settings, including regional hospitals, service agencies, home-care, extended care facilities, and schools.

Upon completion of the program, graduates are eligible to apply for the National Council Licensure Examination for Registered Nurses (NCLEX-RN) in the jurisdiction of choice. The Commission on Collegiate Nursing Education (CCNE)\* serves as an additional resource for information about the program.

## **Accreditation**

The School of Nursing is accredited by the Commission on Collegiate Nursing Education ([www.ccneaccreditation.org](http://www.ccneaccreditation.org)). The program is approved by the Washington State Nursing Care Quality Assurance Commission and the Oregon State Board of Nursing.

## **Admission**

Applicants must first apply for general admission online to the University through Marketing and Enrollment Services. See the admission requirements to the University. Additional admission requirements are listed below for each student category.

Once admitted to the University, prior to entering the first clinical nursing course, each student must apply and be accepted to the School of Nursing as a nursing major. This typically occurs prior to the beginning of the sophomore year. A separate online nursing application must be submitted and admissions testing completed.

## **The following requirements must be met for all categories of nursing applicants:**

1. Meet the minimal required GPA per nursing applicant category (see categories below). Credits in Anatomy and Physiology, Chemistry, and

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\* 655 K Street NW, Suite 750, Washington DC, 20001 or call (202) 887-6791

Microbiology that are more than five years old at the time of admission will not be accepted.

2. Submit a completed online School of Nursing application.
3. Submit two letters of recommendation in addition to the one required for general admission to the University (teacher, employer, or co-worker preferred). Requirement waived for currently enrolled WWU students.
4. Obtain a passing score on the required entrance tests: reading comprehension, critical thinking/reasoning, and math. Testing to be scheduled with an admissions advisor. Fees apply. (See the Financial Bulletin for required testing fee).

Additional admission requirements must be met for each of the following categories of nursing applicant.

**Category 1: Autumn Applicant (College Place, Washington campus).** In addition to the general admission requirements listed above, applicants must:

1. Complete prerequisite courses with a grade of C or above (see School of Nursing website for a list of specific prerequisite courses).
2. Have a minimum cumulative GPA of 2.9.
3. Complete at least 42 credits of required cognates, general studies and electives that apply to the nursing major.
4. The application deadline for the Autumn (College Place campus) applicant is April 15.

**Category 2: Summer Applicant (Portland, Oregon, campus).** In addition to the general admission requirements listed above, applicants must:

1. Complete prerequisite courses with a grade of C or above (see School of Nursing website for a list of specific prerequisite courses).
2. Have a minimum cumulative GPA of 3.25
3. Complete at least 85 credits of the required cognates, general studies, and electives that apply to the nursing major.
4. The application deadline for the summer (Portland campus) applicant is February 1.

**Category 3: Registered Nurse (RN) Applicant.** In addition to the general admission requirements listed above, applicants must:

1. Hold an associate degree in nursing from a regionally accredited college
2. Have a minimum cumulative GPA of 2.9.
3. Hold and provide proof of an unrestricted registered nurse license in the State of Oregon. License must remain active and unrestricted throughout the program.
4. Have clinical experience in direct patient care equivalent to the current beginning senior nursing students in the program.
5. Complete validation process. The School of Nursing uses a process of validation for previous nursing education in order to determine advanced placement for RNs. Placement in the program is determined by completed cognates and general studies courses. Additionally, RNs must pass a standardized examination to validate nursing knowledge and to confirm advanced placement as a senior level student (fee applies). After passing the

validation exam, the applicant will receive course credit; see course description for NRSG 291 and NRSG 391.

6. Applicants accepted on a space-available basis.

**Category 4: Licensed Practical Nurse (LPN) Applicant.** In addition to the general admission requirements listed above, the LPN applicant must:

1. Hold and provide proof of an unrestricted LPN license in any state. License must remain unrestricted throughout the program.
2. Complete 85 transferrable credits of prerequisites that apply to the nursing major with a grade of C or above.
3. Have a minimum cumulative GPA of 2.9.
4. A grade of C or above is required in all prior nursing courses.
5. Have clinical experience in direct patient care equivalent to the current beginning junior nursing students in the program.
6. Complete validation process. The School of Nursing uses a process of validation for previous nursing education in order to determine advanced placement for LPNs. Placement in the program is determined by completed cognates and general studies courses. Additionally, LPNs must pass a standardized examination to validate nursing knowledge and to confirm advanced placement as a junior level student. (Fee applies.) After passing the validation exam, the applicant will receive course credit; see course description NRSG 290.
7. Applicants accepted on a space-available basis.

**After acceptance into the School of Nursing, the following are required:**

1. A deposit is required to hold a place in the program. Upon program enrollment, the deposit will be applied to tuition. If the applicant does not enroll in the program, the deposit is nonrefundable (See Financial Bulletin for deposit amounts).
2. Each nursing student is subject to a criminal background check and drug screen. The School of Nursing reserves the right to deny admission or remove students from the nursing program who have record of criminal activity and/or a positive drug screen. State licensure boards reserve the right to deny licensure in their states if applicants have a criminal history.
3. Provide immunization and TB testing records that meet the School of Nursing immunization requirements.
4. Provide proof of current health insurance.
5. Prior to beginning clinical coursework, each student must obtain and provide proof of current American Heart Association cardiopulmonary resuscitation (BLS-CPR) certification for health care providers. Current CPR certification must be maintained while enrolled in the nursing program.
6. Purchase the standard School of Nursing uniform, available at the School of Nursing office.

### **Progression and Graduation Requirements**

Students must earn a grade of C or better in every required nursing course within a level of course work before progressing to a higher level.

A passing grade in a course cannot be achieved without the successful completion of the clinical portion of the course. An unsatisfactory clinical grade or a grade below C in the theory portion of any clinical course requires that the total course be repeated, both theory and clinical, prior to further progression in the program. Students with an incomplete in a clinical nursing course, NRSG 211, NRSG 212, NRSG 213, NRSG 321, NRSG 331, NRSG 344, NRSG 421, NRSG 437, NRSG 441, cannot begin the next clinical course until the incomplete is removed.

Students who are determined to be unsafe practitioners will be removed from the clinical area and are subject to dismissal as nursing majors.

Students who receive a grade lower than a C or withdraw failing in a required nursing course cannot enroll in further nursing courses until approved to register by the School of Nursing Dean. A written request for approval to register that includes a written plan for improvement must be submitted. Approval to register is granted or denied on a case-by-case basis by the nursing faculty committee. If a request is denied, the student is dismissed from the nursing program.

Readmission is not guaranteed and space for reentering students may be limited.

Any student with a WWU GPA average less than 2.75 will be placed on conditional progression status and be limited to 12 credits for the following quarter. If after one quarter, the student has not achieved a 2.75 GPA, he or she may not enroll in another clinical nursing course until the GPA is above 2.75. Clinical nursing courses may be repeated to improve the GPA on a space available basis.

Nursing majors on the College Place campus must complete all 200 level nursing courses and the following cognate courses (with a grade of C or above) to progress to the Portland campus: BIOL 121, 122, 123, 222, CHEM 105, HLTH 220, MATH 106, PSYC 130, PSYC 215, SOCI 204, ENGL 121, 122, 223. In addition, sufficient general studies and electives courses applying to the major must also be completed to hold Junior class standing.

Standardized examinations are given after completion of sophomore and junior clinical nursing courses. Students who fail to achieve a satisfactory score, for the first failure, can elect to study independently and attempt the exam prior to the start of the subsequent quarter. Students that incur a second exam failure must enroll in a 1-credit remedial course and may be limited to 13 credits for the following quarter. Students who do not pass a standardized examination in three attempts must stop progression in the nursing program. Exam material must be reviewed by auditing the theory component of the course connected with the failed exam. After auditing the class, students have one more chance to pass the exam. If students still do not pass the exam on the fourth attempt, they may not continue as nursing majors. All sophomore and junior level standardized tests must be passed prior to entrance into any senior nursing classes.

During the last quarter of the senior year, two standardized comprehensive nursing examinations are given. A passing score must be achieved on one exam to graduate. Graduation will be delayed and the student will not be eligible to take the NCLEX-RN until a satisfactory score is achieved.

Students must graduate within two years of completion of nursing courses to be recommended to take the NCLEX-RN exam.

### **Student Responsibilities**

The School of Nursing Student Handbook is given to all nursing students. Students have the responsibility to acquaint themselves with its contents and are held accountable for all policies therein.

Students are responsible for their own transportation to agencies used for educational experience. The use of a car is essential for each student to reach clinical sites. Transportation costs, including auto insurance, are the student's responsibility.

Some clinical agencies require additional background security checks and drug screenings. Students are responsible for any associated fees.

Any student missing class or lab time during the first week of a quarter (for any reason) is required to make up that time with the instructor. The student will be charged a fee for each instructor hour of this make-up time (see Financial Bulletin). Students electing not to make up the time missed must withdraw from the course.

### **Transferring from another Nursing Program**

Transfer students will be evaluated individually to determine program placement and accepted on a space-available basis. Placement in the nursing program will be determined by review of syllabi from completed nursing courses. The previous nursing school may be consulted concerning their curriculum content and sequence. General studies and cognate courses will be transferred according to WWU policy. Students wishing to transfer from another nursing program must:

1. Meet all general admission requirements and be a current student or a student within the past two years of an accredited school of nursing.
2. The applicant must be in good standing with the previous institution with a cumulative GPA of at least 2.9.
3. Submit a letter of recommendation from the dean of the school of nursing from which the applicant is transferring.
4. Submit nursing class syllabi for evaluation.

## **NURSING MAJOR (BACHELOR OF SCIENCE)**

A student majoring in nursing must complete 84 quarter hours in nursing courses, the required cognates, the general studies program, and all baccalaureate degree requirements for a total of 192 quarter hours as outlined in this bulletin. In compliance with the regulations of the state, the School of Nursing reserves the right to revise, add or withdraw courses as necessary to ensure a quality nursing program. No grade lower than C will apply.

### **Required Courses:**

NRSG 210	Introduction to Nursing	3
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The following 200-level clinical courses can be taken in one of two tracks, College Place or Portland Campus. A student must complete the three clinical courses in one of the following blocks.

### **College Place Campus students:**

NRSG 211	Fundamentals of Nursing	5
NRSG 212	Health Assessment and the Nursing Process	4
NRSG 213	Pharmacology in Nursing	4

Portland Campus students, Accelerated Summer Format:

## NURSING

NRSG 211P	Fundamentals of Nursing	5
NRSG 212P	Health Assessment and the Nursing Process	4
NRSG 213P	Pharmacology in Nursing	4
NRSG 321	Nursing of the Acutely Ill Adult	8
NRSG 325	Research in Nursing	4
NRSG 331	Mental Health Nursing	8
NRSG 344	Nursing of the Family	8
NRSG 354	Pathophysiology	5
NRSG 421	Nursing of the Chronically Ill	8
NRSG 431	Nursing Management	3
NRSG 437	Advanced Acute Nursing	8
NRSG 441	Community Health Nursing	8
NRSG 445	Issues and Trends in Nursing	3
NRSG 475	Interpreting Lab Values	
	or	2
NRSG 490	Nursing Practicum	
NRSG 450	NCLEX Review	<u>3</u>
		84
Cognates: No grade lower than C will apply.		
BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 222	Microbiology	5
CHEM 105	Survey of Chemistry	5
HLTH 220	Human Nutrition	4
MATH 106	Introduction to Statistics	4
PSYC 130	General Psychology	4
PSYC 215	Developmental Psychology	4
SOCI 204	General Sociology	4
SOCI 236	Privilege and Oppression	4
SPCH 101	Fundamentals of Speech Communication	4
Select one of the following courses (2-3 credits):		
HLTH 110	Wellness for Living	3
HLTH 205	Survey of Health	2
HLTH 208	Drugs and Society	3
HLTH 217	First Aid	2
HLTH 308	Community Health	3
HLTH 328	Basic Therapy	2
HLTH 331	Consumer Health	3
NRSG 234	Medical Terminology	2
SOCI 225	Marriage and Family (or PSYC 225)	<u>2</u>
		52-53
General Studies: See the General Studies section of this Bulletin.		
PEAC	Physical Education Activity Courses	2

HIST	History	8
	Humanities (fine arts, literature, philosophy)	12
ENGL 121	College Writing I	3
ENGL 122	College Writing II	3
ENGL 223	Research Writing	3
	Religion and Theology (minimum of 6 quarter hours in Biblical Studies)	18
	General Studies Electives (varies)	6-7

See page 234 for a list of course descriptions. Look for courses with the following prefix for the School of Nursing: NRSG.





# PHYSICS

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Thomas Ekkens, Chair; Roy Campbell, Frederic Liebrand.

The department offers a Bachelor of Science degree with a major in physics. It also offers a major in biophysics in cooperation with the department of biology. A degree in physics prepares a student for a career in industry, for graduate study, and/or for careers in research and teaching. The Bachelor of Science degree is designed to provide extensive preparation for each of these, with the opportunity to gain practical experience in a research or industrial setting.

The interdisciplinary biophysics major fills the needs of the student who plans a career in medicine or who plans on research and advanced study into the physics of living systems.

For entrance, 30 semester credits of secondary mathematics chosen from algebra, plane and solid geometry, and trigonometry are required. (See the Interdisciplinary section of this bulletin.)

## PHYSICS MAJOR (BACHELOR OF SCIENCE)

A student majoring in physics must complete 61 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Graduate Record Examination, general and subject (Physics) sections and report the results to the Physics Department.

Each Bachelor of Science major is required to perform either: 1) a summer Research Experience for Undergraduates (REU) program or equivalent; 2) an industrial co-op experience; or 3) an on-campus project undertaken with departmental faculty under the course listing PHYS 479, Directed Research/Project.

### Required Courses:

PHYS 251, 252, 253	*Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Laboratory	3
PHYS 310, 311	Modern Physics I, II	6
PHYS 313	Thermodynamics	4
PHYS 314	Modern Physics Laboratory I	1
PHYS 316	Modern Physics Laboratory II	1
PHYS 340	Introduction to Matlab and Mathematica	2
PHYS 401, 402	Electricity and Magnetism	8
PHYS 414, 415	Experimental Physics I, II	2
PHYS 419	Graduate Review	1
PHYS 420, 421	Classical Mechanics	6
PHYS 422, 423	Quantum Mechanics	6
PHYS	Electives	<u>12</u>
		61

\*Students completing PHYS 211, PHYS 212, PHYS 213 may meet the PHYS 251, PHYS 252, PHYS 253 requirement upon departmental validation.

## Electives:

Physics electives may be chosen from the following courses or chosen in consultation with advisor:

PHYS 307	Astrophysics	4
PHYS 312	Physical Electronics	3
PHYS 315	Physical Electronics Laboratory	1
PHYS 323	Modern Optics	3
PHYS 324	Modern Optics Laboratory	1
PHYS 331	Introduction to Nanotechnology	3
PHYS 332	Introduction to Nanotechnology Laboratory	1
PHYS 435	Mathematical Physics	4
PHYS 470	Biophysics	4
PHYS 479	Directed Research/Project	1-3

## Required Cognates:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CPTR 141	Fundamentals of Programming I	4
ENGR 228	Circuit Analysis	4
MATH 181, 281-283	Calculus I-IV	16
MATH 289	Linear Algebra and its Applications	3
MATH 312	Ordinary Differential Equations	4

## Recommended Courses:

ENGR 325	Instrumentation	3
ENGR 354	Digital Logic	3
MATH 315	Probability and Statistics	4
MATH 341	Numerical Analysis	4
MATH 413	Partial Differential Equations	4

## BIOPHYSICS MAJOR (BACHELOR OF SCIENCE)

The biophysics major is a joint program offered by the Department of Biological Sciences and the Department of Physics. See the Interdisciplinary Programs section (p. 175) of this bulletin.

## PHYSICS MINOR

A student minoring in physics must complete 27 quarter hours in physics. Either the Principles of Physics sequence or the General Physics sequence, but not both, are required of all minors. PHYS 310 Modern Physics I and PHYS 314 Modern Physics Laboratory I are required of all minors.

For students also completing the BSE, these requirements are modified as below:

1. For BSE students with a concentration in Electrical Engineering or a concentration in Computer Engineering the following modifications apply:

## PHYSICS

- If the student has satisfactorily completed ENGR 332 Thermodynamics and PHYS 259: Independent Study: Thermodynamics for one credit, it will be considered the equivalent of PHYS 313 Thermodynamics, and the total required quarter hours for a minor are reduced by 4 credits
  - If the student has received departmental certification of satisfactory knowledge of PHYS 401 after satisfactory completion of ENGR 451 the total required quarter hours for a minor are reduced by 4 quarter credit hours.
  - If the student has received departmental certification of satisfactory knowledge of PHYS 312 and PHYS 315, respectively by satisfactory completion of ENGR 312 and ENGR 315, respectively, the total required quarter hours for a minor are reduced by 3 and 1 quarter credit hours, respectively.
2. For BSE students with a concentration in Mechanical Engineering the following modifications apply:
- If the student has satisfactorily completed ENGR 332 Thermodynamics and PHYS 259: Independent Study: Thermodynamics for one credit, it will be considered the equivalent of PHYS 313 Thermodynamics, and the total required quarter hours for a minor are reduced by 4 credits.

Because of the unique nature of the professional curriculum of the engineering degree, any physics course taken to meet any requirement for the BSE degree is considered a cognate and therefore can be simultaneously counted toward the credit requirements for a physics minor.

As a result of overlap in course content of ENGR 312, ENGR 315, and ENGR 332 with physics courses, these courses may be simultaneously counted toward both a BSE degree and a physics minor.

**See page 234 for a list of course descriptions.** Look for courses with the following prefix for the Physics Department: PHYS

## PREPROFESSIONAL PROGRAMS

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The University offers courses required for admission to professional or technical schools. Most preprofessional curricula require two units of high school mathematics (algebra and geometry). All programs should be planned in consultation with and approved by the assigned academic advisor.

The requirements for Loma Linda University are listed in this bulletin for some programs. Requirements for admission to preprofessional programs vary among different professional schools and are subject to change. Students should request information about current admission requirements from the professional school they plan to attend.

Completion of courses listed in the Preprofessional Programs does not assure acceptance into the professional school of your choice. For up-to-date requirements for Loma Linda School of Allied Health Professions, see the <http://www.llu.edu/allied-health/sahp/transfer/index.page>.

Please note that C- grades are not transferable for credit.

### DENTISTRY

Kyle Craig, Joan Redd, Academic Advisors.

The minimum requirement for admission to dentistry is 144 quarter hours. However, most dental schools expect candidates to have completed a bachelor's degree. The following courses are basic requirements for Loma Linda University School of Dentistry. Other dental schools may also have similar requirements:

BIOL 141, 142, 143	General Biology	12
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 431, 432	Foundations of Biochemistry	4, 3
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3

Loma Linda University also recommends additional courses selected from the following areas:

Accounting	Immunology
Anatomy	Microbiology
Business Management	Neuroscience
Cellular and Molecular Biology	Psychology
Ceramics	Religion
Communication	Sculpture
Genetics	Statistics
Histology	Systems Physiology

The Pre-Dental student should choose a major and plan for a degree even though she/he may be accepted to dentistry prior to completion of degree requirements.

PREPROFESSIONAL PROGRAMS

LAW

Timothy Golden, Academic Advisor.

Most law schools require a bachelor’s degree and a satisfactory grade-point average and score on the Law School Admission Test (LSAT) for admission. Law schools vary in the levels of achievement required for admission. Students planning to study law are encouraged to consult with the prelaw advisor.

Courses designed to develop skills in oral and written communication and the ability to reason and think analytically are strongly recommended. The Legal Studies minor offered by the department of history and philosophy provides this focus.

MEDICAL RADIOGRAPHY

Curtis Kuhlman, Academic Advisor

Loma Linda University offers a number of programs that prepare personnel to assist the specialized physician in obtaining anatomical and physiological images of the body or in treating diseases by the use of various types of radiation. The graduate can find employment in hospitals, medical & physician’s offices/clinics, public health agencies, industry, and Armed Forces. This program is recommended for the student wishing to become a radiologic technologist in a diagnostic radiography department, assisting in fluoroscopic examinations, diagnostic tests, and specialized operating room procedures.

Programs exist in the following areas: medical radiography (AS degree), radiation technology (BS degree), and certificates in medical sonography, nuclear medicine technology, radiation therapy technology, and special imaging technology.

Required Courses:

BIOL 121, 122, 123	Anatomy and Physiology	12
CHEM 141, 144	General Chemistry (and lab)	
	or	4
PHYS 201, 204	Conceptual Physics (and lab)	
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
MATH 121	Precalculus I	4
NRSB 234	Medical Terminology	2
PSYC 130	General Psychology	
	or	4
SOCI 204	General Sociology	
SPCH 101	Fundamentals of Speech Communication	4
	Electives (to meet minimum 42 quarter units)	3

*Work experience: 12 hours minimum work/observation experience (volunteer/employee) in a radiology department.*

## MEDICINE

Shirley Anderson, David Lindsey, Janice McKenzie, Academic Advisors.

The basic entrance requirements are not exactly the same for all medical schools. Most medical schools require completion of a bachelor's degree with a grade-point average of 3.50 or above, computed separately for science and nonscience courses. AP, CLEP, and online credits do not meet Loma Linda University requirements for required science courses. The following courses are normally required by Loma Linda University:

BIOL 141, 142, 143	General Biology	12
CHEM 141, 142, 143	General Chemistry*	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 431	Foundations of Biochemistry	4
PHYS 211, 212, 213	General Physics*	
PHYS 214, 215, 216	General Physics Laboratory	

\*Prerequisite: MATH 121, 122.

Also recommended are:

BIOL 381, 382, 383	Cell Biology	12
BIOL 464	Animal Physiology	4
MATH 106	Introduction to Statistics	4
PSYC 140	Introduction to Psychology: Social Foundations	4
PSYC 141	Introduction to Psychology: Biological Foundations	4
SOCI 204	General Sociology	4

If applying to a medical school other than Loma Linda University, the student should refer to the bulletin of that institution for specific entrance requirements.

## NURSING

See Nursing section of this Bulletin (p. 192).

## OCCUPATIONAL THERAPY

Curtis Kuhlman, Academic Advisor.

Students preparing for the Master of Occupational Therapy degree should plan to complete a Baccalaureate degree and complete the following requirements:

BIOL 121, 122, 123	Anatomy and Physiology	12
MATH 106	Introduction to Statistics	4
NRSNG 234	Medical Terminology	2

PREPROFESSIONAL PROGRAMS

PSYC 215	Developmental Psychology	4
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*Work experience: 40 hours minimum work/observation experience (volunteer/employee) in an occupational therapy department.*

OPTOMETRY

Fred Liebrand, Academic Advisor.

While two years of college work is the minimum requirement for admission to most optometry schools, the majority of students being admitted have finished at least four years of college or received a bachelor's degree. Students interested in optometry should choose a major even though they may later gain admission to professional school before finishing it. At some optometry schools a student admitted before graduation must then finish a bachelor's degree while pursuing professional studies. This is not advisable since the requirements of the school awarding the degree must then be met.

The preprofessional curriculum should include as a minimum the following courses:

CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
MATH 121, 122	*Precalculus I, II	8
	(may be satisfied by a good secondary mathematics background)	
MATH 181	Calculus I	4
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3
PSYC 130	General Psychology	4

\*Precalculus should be taken the first year since it is a corequisite for General Chemistry and a prerequisite for General Physics.

Additional Requirements:

Since the requirements for other pre-optometry courses differ among the optometry schools, students should obtain catalogs from each school of interest in order that all prerequisites may be fulfilled. Other required courses will include some or all of the following:

BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 141, 142, 143	General Biology	12
BIOL 222	Microbiology	5
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 431	Foundations of Biochemistry	4
	A course in statistics	
	An additional psychology course	

Students should visit [www.optometrystudents.com](http://www.optometrystudents.com) for a list of optometry schools and additional information.

## ORTHOTICS AND PROSTHETICS

Tom Ekkens, Academic Advisor.

Entry requirements vary according to the professional school. Summarized below are the requirements for entry into the program at Loma Linda University. For admission into the Orthotics and Prosthetics program, students are required to complete a minimum 96 credits and required courses.

*BIOL 121, 122, 123	Anatomy and Physiology	12
*CHEM 105	Survey of Chemistry	
	or	4-5
*CHEM 141, 144	General Chemistry +General Chemistry Lab	
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
*MATH 106	Introduction to Statistics	4
PEAC	Any PEAC activity courses	2
*PHYS 201, 204	Conceptual Physics +Conceptual Physics Lab	
	or	4
*PHYS 211, 214	General Physics +General Physics Lab	
SPCH 101	Fundamentals of Speech Communication	4
Social Sciences - Select from at least two subject areas (12)		
PSYC 130	General Psychology	4
*PSYC 215	Developmental Psychology	
	or	4
*PSYC 492	Abnormal Psychology	
Select additional credits from PSYC, SOCI, ANTH, PLSC		
HIST 121, or 122	The West and the World	
	or	4
HIST 221	History of the United States	
Select eight credits from the following courses:		
ART 251	Introduction to Art	4
ENGL 210	Survey of British and American Literature	4
MUHL 124	Introduction to Music	4
PHIL 205	Introduction to Philosophy	4
	Any Foreign Language	4
Religion	4 credits per year; 8 credits max	8

\*Individuals who have received a Bachelor's degree from a regionally accredited college or university need only to complete these prerequisite courses.

*In addition to the above, Loma Linda requires a documented minimum of 80 work/observation hours under the supervision of a CPO practitioner.*



PHARMACY

Nerissa Lewis, Academic Advisor.

At least three years of college work are required. Additional requirements are often needed if a bachelor’s degree is not completed. Students should consult with the college of pharmacy of their choice about course requirements. In general, the course requirements will include:

BIOL 141, 142, 143	General Biology	12
BIOL 381	Cell Biology I: Structure & Bioenergetics	4
	or	
BIOL 382	Cell Biology II: Genetics & Molecular Biology	4
	or	
CHEM 431	Foundations of Biochemistry	5
CHEM 141, 142, 143	General Chemistry*	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 383	Intermediate Organic Chemistry	3
CHEM 386	Microscale Organic Laboratory	2
PHYS 211	General Physics*	3
PHYS 214	General Physics Laboratory	1

Prerequisite: MATH 121, 122.

Additional recommended sciences:

BIOL 382	Cell Biology II: Genetics & Molecular Biology	4
BIOL 383	Cell Biology III: Genomics & Regulation	4
BIOL 449	Vertebrate Histology	4
BIOL 466	Immunology	4
BIOL 222	Microbiology	
	or	4
BIOL 445	Advanced Microbiology	
BIOL 122, 123	Anatomy and Physiology	8
	or	
BIOL 464	Animal Physiology	4
CHEM 432, 433	Biochemistry	3, 4

All pharmaceutical colleges require three years in residency beyond the three years of pre-pharmacy; most require four years.

PHYSICAL THERAPY

See Health and Physical Education section of this bulletin.

## PHYSICAL THERAPY ASSISTANT

Michael Hellie, Academic Advisor.

These are usually two-year programs and students receive an Associate Degree upon completion. Loma Linda University (LLU) offers this program with one year of college prerequisite courses and one year of training at LLU. Courses with grades below C do not count on the program. Courses at Walla Walla University which meet these prerequisites are:

BIOL 121, 122, 123	Anatomy and Physiology	12
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
NRSNG 234	Medical Terminology	2
PHYS 201	Conceptual Physics	3
PHYS 204	Conceptual Physics Laboratory	1
PSYC 130	General Psychology	4
PSYC 215	Developmental Psychology	
	or	4
PSYC 492	Abnormal Psychology	
SPCH 101	Fundamentals of Speech Communication	4

Select four credits from the following courses:

ART 251	Introduction to Art	4
ENGL 210, 211, or 212	Survey of British and American literature	4
HIST 121 or 122	The West and the World	4
HIST 221 or 222	History of the United States	4
MUHL 124	Introduction to Music	4
PHIL 205	Introduction to Philosophy	4

Any foreign language course may be used as well.

Select two to four credits from the courses:

HLTH 110	Wellness for Living	3
HLTH 220	Human Nutrition	4
	Any PEAC	2

Religion	4 credits a year/8 credits max	8
Electives	To meet minimum total of 48 quarter hours.	

*A minimum of 80 hours of work/observation are required in a physical therapy department, 20 hours of which must be in an in-patient setting and 20 hours in an outpatient setting.*

## PHYSICIAN ASSISTANT

Kyle Craig, Academic Advisor.

There is a wide variation in the prerequisites for entrance into a Physician Assistant program. A bachelor's degree is required for admittance, typically with a minimum science GPA of 3.0. Clinical experience involving direct patient care is required. The number of hours of clinical experience also varies widely. Loma

## PREPROFESSIONAL PROGRAMS

Linda requires at least 2,000 hours. Physician Assistant programs are a master's level program.

Requirements may include the following courses; however, students should request information about current admission requirements from the professional school they plan to attend.

BIOL 121, 122, 123	Anatomy and Physiology	12
BIOL 222	Microbiology	5
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
MATH 121, 122	Precalculus I, II	8
ANTH 225	Cultural Anthropology	
	or	4
SOCI 204	General Sociology	
PSYC 130	General Psychology	4
Religion	4 credits a year	

### Recommended Courses:

MATH 106	Introduction to Statistics	4
NRSG 234	Medical Terminology	2
SPAN 101-103	Elementary Spanish	12

## VETERINARY SCIENCE

Jim Nestler, Academic Advisor.

The requirements below apply to the Washington-Idaho-Montana-Utah (WIMU) Regional Program in veterinary medical education. Since the basic requirements for entrance into other veterinary schools may be different, students should confer with the schools of their choice.

BIOL 141, 142, 143	General Biology	12
BIOL 250	Biostatistics	4
CHEM 141, 142, 143	General Chemistry	9
CHEM 144, 145, 146	General Chemistry Laboratory	3
CHEM 321, 322	Organic Chemistry	8
CHEM 324, 325	Organic Chemistry Laboratory	2
CHEM 431, 432	Foundations of Biochemistry	7
ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
MATH 121	Precalculus I	4
PHYS 211, 212, 213	General Physics	9
PHYS 214, 215, 216	General Physics Laboratory	3
SPCH 101	Fundamentals of Speech Communication	4
	General Studies:	27
	Arts, humanities, social science, history	

Electives highly recommended by the WIMU Regional Program include:

BIOL 222	Microbiology	5
BIOL 381	Cell Biology I: Structure and Bioenergetics	4
BIOL 382	Cell Biology II: Genetics and Molecular Biology	4
BIOL 383	Cell Biology III: Genomics and Regulation	4
BIOL 464	Animal Physiology	4
BIOL 466	Immunology	<u>4</u>
Total hours required (electives additional)		96

Nonacademic Requirements:

Graduate Record Examination (General Test)

Veterinary Medical Exposure and Animal Experience

Applicants must have a significant number of hours of veterinary medical exposure (may include biomedical research, academic medicine, or private practice) and experience with animals by November 1 of the year of application.



# SCHOOL OF SOCIAL WORK AND SOCIOLOGY

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TBA, Dean; Emily Tillotson, B.S.W. Director; Cindee Bailey, Jim Boyd, Cheris Current, Robert Gardner, Deisy Haid, Heather Rodriguez, Susan Smith, and Heather Vonderfecht.

The School of Social Work and Sociology offers a Bachelor of Social Work degree and a Bachelor of Arts degree with a major in sociology. Minors are available in social welfare and sociology.

The degree in social work is designed to prepare students for generalist social work practice in a variety of practice settings and graduate study. Supervised field education experience in selected social work agencies is an integral part of the program. The Bachelor of Social Work is accredited by the Council on Social Work Education.

Candidates for social work are selected on the basis of scholarship, ethical conduct, awareness of diverse issues, and a commitment to social and economic justice. In addition to completing the requirements for the Bachelor of Social Work, students must be accepted into candidacy in the junior year to continue in the program. BSW Candidates will submit a résumé, personal statement, and references. Criteria for acceptance include a minimum overall grade point average of 2.75.

Sociology broadens the student's perspective of the overall organization and function of society. A sociologist is concerned with the scientific study of social phenomena arising out of group relationships. A major in sociology is useful as pre-professional preparation for advanced research and teaching in sociology, community planning, public administration, law and medical professions, and other fields concerned with social relationships.

## SOCIAL WORK MAJOR (BACHELOR OF SOCIAL WORK)

Students enrolled in the professional curriculum must complete a total of 192 quarter hours, including the general studies requirements for a Bachelor of Science degree, the core requirements (66 quarter hours) in the areas of social work, sociology, and psychology, and cognates (34 quarter hours) in economics, human biology, and political science. The core requirements include 12 hours of field education the senior year, which involves 400 clock hours in a supervised professional social work practice setting. Grades in core requirements and cognates must be no lower than C-.

### Core Requirements:

SOWK 260	Human Behavior and The Social Environment I	3
SOWK 261	Human Behavior and The Social Environment II	3
SOWK 264	Introduction to Social Work	4
SOWK 266	Historical Development of Social Welfare	4
SOWK 371	Social Work Practice With Individuals	4
SOWK 372	Social Work Practice With Small Groups	4
SOWK 373	Social Work Practice With Couples and Families	4
SOWK 375	Policy and Advocacy Practice for Social Justice	3
SOWK 465	Social Work Practice With Organizations and Communities	4
SOWK 466	Comparative Theories of Social Work Practice	3
SOWK 490	Field Education	12
SOWK 491	Social Work Capstone	2
	*Electives	<u>16</u>

\*Electives may be chosen from classes with the following prefixes: SOWK (minimum of 6 credits), SOCI, CORR, ANTH. A maximum of 8 credits of electives may also be chosen from PSYC 215, 247, 344, 370, 373, 447, 466, 492.

Cognates:

PSYC 130	General Psychology	4
SOCI 204	General Sociology	4
SOCI 234	Current Social Problems	4
SOCI 236	Privilege and Oppression	4
SOCI 451	Research Methods I	3
SOCI 452	Research Methods II	3
PLSC 224	American Government	4

Choose one of the following (4 credits):

ECON 204	Fundamentals of Economics	4
ECON 211	Principles of Macroeconomics	4
HIST 359	The American Economy	4

Choose one of the following (4 credits):

BIOL 105	Contemporary Biology	4
BIOL 121	Anatomy and Physiology	4
BIOL 141	General Biology	4

8 credits from one laboratory science sequence are required for general studies.

## SOCIOLOGY MAJOR (BACHELOR OF ARTS)

A student majoring in sociology must complete 51 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the senior comprehensive exam.

Major Requirements:

SOCI 204	General Sociology	4
SOCI 234	Current Social Problems	4
SOCI 236	Privilege and Oppression	4
SOCI 451	Research Methods I	3
SOCI 452	Research Methods II	3
SOCI 455	Social Theory	4
SOCI 490	Capstone Internship	
	or	6
SOCI 491	Capstone Research Internship	
SOCI 496	Sociology Seminar	3
	SOCI or CORR Electives	6
	*Interdisciplinary Electives	14
		51

\*Interdisciplinary Electives may be chosen from the following courses: All SOCI and CORR prefixes, or the list below.

ANTH 225	Cultural Anthropology	4
ART 312	Aesthetics and Photography	4
ART 324, 325, 326	History of World Art	9
ECON 204	Fundamentals of Economics	4
ECON 210	Principles of Microeconomics	4

## SCHOOL OF SOCIAL WORK AND SOCIOLOGY

ECON 211	Principles of Macroeconomics	4
FREN 407	Survey of French and Francophone Literature	4
FREN 408	Contemporary French and Francophone Literature	4
GEOG 252	World Geography	4
HIST 283	Latin America	4
HIST 337	Baseball and American Culture	4
HIST 357	The African-American Experience	4
HIST 359	The American Economy	4
HIST 449	Recent American History	4
HIST 450	America Overseas	4
HIST 460	Science and The Enlightenment	4
HONR 349	Religion in a Social Context	4
HONR 131	Western Thought	4
HONR 132	Western Thought	4
HONR 133	Western Thought	4
LANG 406	Language and Culture	4
PHIL 205	Introduction to Philosophy	4
PHIL 305	Moral Philosophy	4
PLSC 224	American Government	4
PSYC 344	Social Psychology	4
SOWK 266	Historical Development of Social Welfare	4
SOWK 375	Policy and Advocacy Practice for Social Justice	3
SOWK 471	Human Sexuality	3
SPAN 407	Survey of Spanish Literature	4
SPAN 408	Contemporary Latino Literature	4
TECH 321	Technology and Society	4
Cognate:		
MATH 106	Introduction to Statistics	4

## SOCIAL WELFARE MINOR

A student minoring in social welfare must complete 30 quarter hours.

### Required Courses:

SOWK 260	Human Behavior and the Social Environment I	3
SOWK 261	Human Behavior and the Social Environment II	3
SOWK 264	Introduction to Social Work	4
SOWK 266	Historical Development of Social Welfare	4
SOWK 375	Policy and Advocacy Practice for Social Justice	3
	*Electives	<u>13</u>
		30

\*Electives must be chosen from the following prefixes in consultation with the academic advisor: SOWK, SOCI, ANTH, CORR.

## SOCIOLOGY MINOR

A student minoring in sociology must complete 30 quarter hours:

## Required Courses:

SOCI 204	General Sociology	4
SOCI 234	Current Social Problems	4
SOCI 236	Privilege and Oppression	4
SOCI 496	Sociology Seminar	3
	Electives	<u>15</u>
		30

Electives must be chosen in consultation with the academic advisor from the following prefixes: SOCI, SOWK, ANTH, CORR.

**See page 234 for a list of course descriptions.** Look for courses with the following prefixes for the School of Social Work and Sociology: ANTH, CORR, SOCI, and SOWK.



## TECHNOLOGY

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Linda Felipez, Chair; Brent Bergherm, Philip Glendrange, Robert Holm, Jeffre Humbert, Matthew Toelke.

The Department of Technology provides quality technological instruction in a Christian environment, preparing students to work in a variety of service industries. Each program provides a balance between technical theory and practical laboratory experiences. Students may choose from an array of four-year Bachelor of Science or Associate of Science degree programs.

The Bachelor of Science majors offered in the Department of Technology include Automotive Service, Aviation Technology, Graphic Design, Industrial Design, and Web Design. Each of these majors include a number of core courses which provide broad technical experience. Along with the technical expertise, these majors provide communication, writing, and social skills through the University general studies program. Combining the specific major requirements, the technical core courses, and the general studies program provides the student with exemplary skills for today's workplace.

Bachelor of Science (BS) degrees in Automotive Management and Aviation Management are also jointly offered by the Technology Department and the School of Business. These degrees combine technology and business to prepare students for managing automotive or aviation businesses.

The Associate of Science majors offered in the Department of Technology include Automotive Technology, Aviation Technology and Graphic Design. Each major prepares graduates for employment in that field. In each case, a broad technical background balances theory with laboratory experience. These programs serve students who wish to complete their technical training in a Christian environment with minimal general studies and time requirements. The programs also allow continuance in the baccalaureate programs with minimal loss of credit.

Courses in the Department of Technology provide non-majors with the opportunity of developing technical skills to complement their major, provide a minor, or to strengthen their background in the applied arts.

Students must obtain a C- or above in cognates.

### AUTOMOTIVE SERVICE MAJOR (BACHELOR OF SCIENCE)

A student majoring in Automotive Service must complete a minimum of 82 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students will be required to take A1-A8 ASE exams prior to graduation as their exit exam.

## Core Requirements:

AUTO 134	Internal Combustion Engine Theory	2
AUTO 135	Internal Combustion Engine Laboratory	2
AUTO 145	Manual Drive Trains and Axles	2
AUTO 146	Manual Drive Trains and Axles Laboratory	2
AUTO 156	Electrical Systems	2
AUTO 157	Electrical Systems Laboratory	2
AUTO 280	Practicum	2
AUTO 314	Engine Performance	2
AUTO 315	Engine Performance Laboratory	2
AUTO 335	Suspension and Steering Systems	2
AUTO 336	Suspension and Steering Systems Laboratory	2
AUTO 337	Brake Systems and Traction Control	2
AUTO 338	Brake Systems and Traction Control Laboratory	2
AUTO 355	Climate Control Systems	2
AUTO 356	Climate Control Systems Laboratory	2
AUTO 357	Automatic Transmissions and Transaxles	2
AUTO 358	Automatic Transmissions and Transaxles Laboratory	2
AUTO 365	Diesel Engines	3
AUTO 414	Advanced Engine Performance	3
AUTO 434	High Performance Engine Tuning	3
AUTO 466	Body Electronics and Computer Systems	3
AUTO 473	Alternative Fuels	3
AUTO 480	Advanced Practicum	2
AUTO 495	Colloquium*	0
DSGN 121	Fundamentals of CAD	2
TECH 137	Oxyacetylene Welding and Cutting	2
TECH 138	Shielded Metal Arc Welding	2
TECH 204	Fundamentals of Electronics	4
TECH 235	Materials and Processes	4
TECH 241	Fabrication and Machining of Metals I	2
TECH 321	Technology and Society	4
TECH 335	Computer Controlled Prototyping in Technology	3
TECH 380	Space Planning and Design	3
TECH 499	Senior Project	1
	†Electives (4 credits must be within the Technology Department)	4
		<u>82</u>

\*Open only to students of junior standing or higher. Automotive degree candidates must satisfactorily complete two quarters, at least one of which must be during the senior year.

†Electives must be chosen from AVIA, TECH, CPTR, FINA, GBUS, ECON, ACCT, MKTG, MGMT, GRPH, and/or PHTO in consultation with and approved by the academic advisor assigned by the department chair.

## Cognates:

ACCT 201	Principles of Accounting	4
CIS 140	Computer Business Applications	4

TECHNOLOGY

MGMT 275	Entrepreneurship and Small Business Management	
	or	4
MGMT 371	Principles of Management	
PHYS 201, 202	Conceptual Physics	6
PHYS 204, 205	Conceptual Physics Laboratory	2

AVIATION TECHNOLOGY MAJOR  
(BACHELOR OF SCIENCE)

A student majoring in Aviation Technology must complete a minimum of 75 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Aviation Technology students can work with their academic advisor to focus their elective choices towards a career as a professional pilot. Specialty areas include commercial aviation or mission/humanitarian aviation.

The aviation program trains students using a Part 61 Federal Aviation Administration (FAA) training course outline. A specific level of mastery and progress is required to complete the academic courses, earn flight certificates and ratings, and continue in the program. To be successful in training and in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. Students will be allowed to register for flight classes based on performance in prerequisite classes. Due to the demanding and unforgiving nature of aviation operations, the Chair of the Technology department in consultation with the aviation faculty may dismiss students from aviation classes at any time. Reasons for such action may include, but are not limited to, the following: reckless operations, safety concerns or violations, security concerns raised by foreign and domestic background information, excessive cancellations, or documented progress delays in training due to students' teach-ability, skill, or retention of knowledge.

WWU AVIATION STANDARD OPERATING PROCEDURES

Walla Walla University Aviation Standard Operating Procedures are given to all aviation students. Students have the responsibility to acquaint themselves with the contents and are held accountable for all policies therein. Students found to be in violation of the WWU Aviation Standard Operating Procedures or judged to be unsafe will be removed from the flight schedule and will be subject to dismissal as aviation majors.

All flight courses require progress and a level of mastery for course completion, earning flight certificates and ratings, and continuation in the program. Students will be allowed to register for flight classes based on performance in prerequisite classes. To be successful in training an in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. In the aviation industry character is evaluated based on an applicant's driving and/or criminal record. Excessive movement infractions, driving while under the influence, suspension or revocation of a driver's license, or a pattern of criminal activity are all viewed as terms of "moral character." The aviation program recognizes that people can change and these items are not immediately disqualifying, but future employers will consider them, and an applicant with a background must be prepared to work hard to show change.

Students are solely responsible for their own transportation to agencies used for educational experience. The use of ground transportation is essential for each student to reach the Walla Walla Regional Airport where the WWU flight center is located. Transportation costs, including auto insurance and liability, are the student's responsibility.

Once a student is enrolled at WWU in the Aviation Technology (Bachelor of Science) program all subsequent flight training required as part of the student's course of study must be completed in residence at WWU in WWU aircraft unless otherwise approved by the Aviation Faculty. Flight training completed away from WWU will not be guaranteed credit for the corresponding WWU course.

All flight courses have additional expenses. Please see the current Financial Bulletin for details.

#### Core Requirements:

AVIA 125	Air Traffic Control & Airspace	2
AVIA 140	Survey of Aviation	1
AVIA 141	Private Pilot Lectures	4
AVIA 142	Private Pilot Flight Training I	2
AVIA 143	Private Pilot Flight Training II	2
AVIA 144	Private Pilot Flight Training III	2
AVIA 234	Aviation Weather	2
AVIA 256	Aircraft Systems and Basic Maintenance	4
AVIA 261	Instrument Pilot Lectures	4
AVIA 262	Instrument Flight Training	3
AVIA 263	Advanced Instrument Flight Training	3
AVIA 264	Cross Country Flight	2
AVIA 270	Aviation Human Factors	2
AVIA 325	Advanced Cross Country Flight	2
AVIA 334	Commercial Pilot Lectures	4
AVIA 335	Commercial Flight Training	3
AVIA 336	Advanced Commercial Flight Training	3
AVIA 337	Mission/Humanitarian Flight Training	2
AVIA 340	Multi-Engine Flight Training	3
AVIA 355	Aviation Safety	2
AVIA 356	Principles of Flight Instruction	2
AVIA 455	Crew Resource Management	2
AVIA 496	Senior Seminar	2
TECH 137	Oxyacetylene Welding and Cutting	2
TECH 138	Shielded Metal Arc Welding	2
TECH 380	Space Planning and Design	3
TECH 499	Senior Project	1

Choose 4 credits from the following:

## TECHNOLOGY

AVIA 280	Practicum	1-6;6
AVIA 357	Flight Instructor Flight Training	2
AVIA 358	Advanced Flight Instructor Training	3
AVIA 450	Aviation Law and Regulations	2
AVIA 458	Instrument Instructor Flight Training	2
AVIA 460	Multi-Engine Instructor Flight Training	2
AVIA 480	Advanced Practicum	<u>1-6;6</u>
		70

Aviation students planning a career in mission/humanitarian flight are encouraged to take RELH 303 World Religions and RELM 233 Introduction to Cross Cultural Ministry as part of their general studies religion requirements.

### Cognates:

ACCT 201	Principles of Accounting	4
CIS 140	Computer Business Applications	4
GBUS 361	Business Law I	4
MATH 121	Precalculus I	4
MGMT 275	Entrepreneurship and Small Business Management	
	or	4
MGMT 371	Principles of Management	
PHYS 201, 202	Conceptual Physics	6
PHYS 204, 205	Conceptual Physics Laboratory	2

## GRAPHIC DESIGN MAJOR (BACHELOR OF SCIENCE)

A student majoring in Graphic Design must complete a minimum of 80 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

### Core Requirements:

DSGN 110	Design Principles I	4
GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 255	Graphic Design and Layout	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design Studio	4
GRPH 265	Graphic Design History and Theory Studio	4
GRPH 272	Typography	3
GRPH 336	Digital Imaging II	4
GRPH 345	Environment Design	4
GRPH 370	Fundamentals of Packaging	4
GRPH 371	Graphic Design Studio	2
GRPH 445	Graphics Services	3
GRPH 463	Web Publishing	4

GRPH 466	UI/UX Design Fundamentals	2
GRPH 490	Internship	2
GRPH 491	Portfolio: Brand Identity	1
GRPH 492	Portfolio Design	2
PHTO 156	Principles of Photography	3
PHTO 256	Intermediate Digital Photography	3
PHTO 356	Advanced Digital Photography	4
TECH 321	Technology and Society	4
TECH 499	Senior Project	1
	Electives*	<u>7</u>
		81

\*Electives must be chosen from ART, COMM, CPTR, DSGN, GRPH, JOUR, MKTG, PHTO, and PRDN in consultation with and approved by the academic advisor assigned by the department chair.

Cognates:

ART 160	Materials and Methods	4
COMM 357	Media Law	
	or	4
GBUS 361	Business Law I	
FLTV 135	Introduction to Filmmaking	4
SPCH 101	Fundamentals of Speech Communication	4

Complete one of the following: (4 credits)

ART 181	Analysis of Form	4
ILL 244	Introduction to Illustration	4

Complete one of the following: (3 credits)

ART 324, 325, or 326	History of World Art	3, 3, 3
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Complete one of the following (3-4 credits):

JOUR 245	Media Writing	4
JOUR 341	Feature Writing	4
JOUR 349	Social Media Strategies	3

Complete one of the following (4 credits):

MKTG 381	Principles of Marketing	4
MKTG 383	Principles of Advertising	4
MKTG 384	Consumer Behavior	4

## PRODUCT DESIGN MAJOR (BACHELOR OF SCIENCE)

A student majoring in Product Design must complete a minimum of 96 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, the general studies program, and all baccalaureate degree requirements for a total of 192 quarter

hours, as outlined in this bulletin. A minimum grade-point average of 2.25 is required. No grade lower than a C will apply to core and cognate requirements. Product Design is the professional service of creating and developing concepts and specifications optimizing the function, value and appearance of products and systems for the mutual benefit of user and manufacturer. Students learn to analyze and solve diverse design problems from technical, aesthetic, social, and ecological viewpoints. Work progresses from developmental drawings, mock ups and models, to working drawings and prototype construction with manufacturing considerations. The B.S. in Product Design offers the knowledge and experiences that prepare students to become competitive product and industrial designers.

PRODUCT DESIGN PROGRAM ADMISSION

Applicants must first apply for admission online to the University through the Office of Enrollment Services and submit all post-secondary transcripts. See the admission requirements to the University. Additional requirements are listed below.

Once admitted to the University and prior to entering the junior design studio courses, each student must be accepted to the Department of Technology as a Product Design Major. A separate online application must be submitted. Priority will be given to qualified applicants with 24 or more credits from WWU including past and current enrollment. Applicants must have been enrolled at WWU within the past two quarters at the time of application to be given this priority.

The following requirements must be met for all Product Design applicants:

- 1. Submit the completed online Product Design program application.
- 2. Have a cumulative grade point average of 2.25 or above.
- 3. Submit a current résumé and an essay, details to be delivered in studio class.
- 4. Participate in, and successfully pass, the Product Design portfolio critique.
- 5. Credits in design and technology that are more than six years old will not apply to meet core or cognate requirements.

Core Requirements:

DSGN 110	Design Principles I	4
DSGN 111	Design Principles II	4
DSGN 121	Fundamentals of CAD	2
DSGN 215	Design Theory, History, and Criticism	4
DSGN 312	Design Strategies and Methodologies	4
GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 255	Graphic Design and Layout	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design Studies	3
GRPH 370	Fundamentals of Packaging	4
GRPH 492	Portfolio Design	2
PRDN 120	Models and Prototypes	3
PRDN 130, 230, 330	3-D Design I, II, III	9

PRDN 345	Environment Design	4
PRDN 210, 310, 410	Product Design Studio I, II, III	12
PRDN 411	Senior Project Studio	4
TECH 137	Oxyacetylene Welding and Cutting	
	or	2
TECH 138	Shielded Metal Arc Welding	
TECH 220	Introduction to Basic Woodworking	2
TECH 223	Introduction to Fine Woodworking	2
TECH 235	Materials and Processes	4
TECH 244	Lathe and Milling Operations	3
TECH 321	Technology and Society	4
TECH 335	Computer Controlled Prototyping in Technology	3
TECH 499	Senior Project	<u>2</u>
		96
Cognates:		
ART 181	Analysis of Form	4
SPCH 101	Fundamentals of Speech Communication	4
Complete one of the following: (3 credits)		
ART 324, 325, or 326	History of World Art	3, 3, 3
Choose one of the following: (4 credits)		
MKTG 381	Principles of Marketing	4
MKTG 383	Principles of Advertising	4
MKTG 384	Consumer Behavior	4
Choose one of the following sequences: (8 credits)		
PHYS 201, 202	Conceptual Physics	6
PHYS 204, 205	Conceptual Physics Laboratory	2
	or	
CHEM 141, 142	General Chemistry	6
CHEM 144, 145	General Chemistry Laboratory	2

## AUTOMOTIVE MANAGEMENT MAJOR (BACHELOR OF SCIENCE)

The automotive management major is a joint program offered by the School of Business and the Department of Technology. See the Interdisciplinary Programs section (p. 168) of this bulletin.

## AVIATION MANAGEMENT MAJOR (BACHELOR OF SCIENCE)

The aviation management major is a joint program offered by the School of Business and the Department of Technology. See the Interdisciplinary Programs section (p. 169) of this bulletin.



**AUTOMOTIVE TECHNOLOGY (ASSOCIATE OF SCIENCE)**

A student majoring in Automotive Technology must complete a minimum of 59 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

The A.S. in Automotive Technology has been designed to be completed in three years. Due to the many alternating-year AUTO classes, it will generally take three years of study to complete the required classes for the degree. The A.S. in Automotive Technology is primarily intended for students who are already pursuing a Bachelor's degree.

**Core Requirements:**

AUTO 134	Internal Combustion Engine Theory	2
AUTO 135	Internal Combustion Engine Laboratory	2
AUTO 145	Manual Drive Trains and Axles	2
AUTO 146	Manual Drive Trains and Axles Laboratory	2
AUTO 156	Electrical Systems	2
AUTO 157	Electrical Systems Laboratory	2
AUTO 280	Practicum	2
AUTO 314	Engine Performance	2
AUTO 315	Engine Performance Laboratory	2
AUTO 335	Suspension and Steering Systems	2
AUTO 336	Suspension and Steering Systems Laboratory	2
AUTO 337	Brake Systems and Traction Control	2
AUTO 338	Brake Systems and Traction Control Laboratory	2
AUTO 355	Climate Control Systems	2
AUTO 356	Climate Control Systems Laboratory	2
AUTO 357	Automatic Transmissions and Transaxles	2
AUTO 358	Automatic Transmissions and Transaxles Laboratory	2
AUTO 414	Advanced Engine Performance	3
DSGN 121	Fundamentals of CAD	2
TECH 204	Fundamentals of Electronics	4
TECH 335	Computer Controlled Prototyping in Technology	3
	Electives*	<u>13</u>
		59

\*Electives must be chosen from AUTO, AVIA, TECH, or PHTO in consultation with and approved by the academic advisor.

**AVIATION TECHNOLOGY (ASSOCIATE OF SCIENCE)**

A student majoring in Aviation Technology must complete a minimum of 53 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, general

studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

The aviation program trains students using a Part 61 Federal Aviation Administration (FAA) training course outline. A specific level of mastery and progress is required to complete the academic courses, earn flight certificates and ratings, and continue in the program. To be successful in training and in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. Students will be allowed to register for flight classes based on performance in prerequisite classes. Due to the demanding and unforgiving nature of aviation operations, the Chair of the Technology department in consultation with the aviation faculty may dismiss students from aviation classes at any time. Reasons for such action may include, but are not limited to, the following: reckless operations, safety concerns or violations, security concerns raised by foreign and domestic background information, excessive cancellations, or documented progress delays in training due to students' teach-ability, skill, or retention of knowledge.

## WWU AVIATION STANDARD OPERATING PROCEDURES

Walla Walla University Aviation Standard Operating Procedures are given to all aviation students. Students have the responsibility to acquaint themselves with the contents and are held accountable for all policies therein. Students found to be in violation of the WWU Aviation Standard Operating Procedures or judged to be unsafe will be removed from the flight schedule and will be subject to dismissal as aviation majors.

All flight courses require progress and a level of mastery for course completion, earning flight certificates and ratings, and continuation in the program. Students will be allowed to register for flight classes based on performance in prerequisite classes. To be successful in training and in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. In the aviation industry character is evaluated based on an applicant's driving and/or criminal record. Excessive movement infractions, driving while under the influence, suspension or revocation of a driver's license, or a pattern of criminal activity are all viewed as terms of "moral character."

The aviation program recognizes that people can change and these items are not immediately disqualifying, but future employers will consider them, and an applicant with a background must be prepared to work hard to show change.

Students are solely responsible for their own transportation to agencies used for educational experience. The use of ground transportation is essential for each student to reach the Walla Walla Regional Airport where the WWU flight center is located. Transportation costs, including auto insurance and liability, are the student's responsibility.

Once a student is enrolled at WWU in the Aviation Technology (Associate of Science) program, all subsequent flight training required as part of the student's course of study must be completed in residence at WWU in WWU aircraft unless otherwise approved by the Aviation Faculty. Flight training completed away from WWU will not be guaranteed credit for the corresponding WWU course.

All flight courses have additional expenses. Please see the current WWU financial bulletin for details.

## TECHNOLOGY

### Core Requirements:

AVIA 125	Air Traffic Control & Airspace	2
AVIA 140	Survey of Aviation	1
AVIA 141	Private Pilot Lectures	4
AVIA 142	Private Pilot Flight Training I	2
AVIA 143	Private Pilot Flight Training II	2
AVIA 144	Private Pilot Flight Training III	2
AVIA 234	Aviation Weather	2
AVIA 256	Aircraft Systems and Basic Maintenance	4
AVIA 261	Instrument Pilot Lectures	4
AVIA 262	Instrument Flight Training	3
AVIA 263	Advanced Instrument Flight Training	3
AVIA 264	Cross Country Flight	2
AVIA 270	Aviation Human Factors	2
AVIA 325	Advanced Cross Country Flight	2
AVIA 334	Commercial Pilot Lectures	4
AVIA 335	Commercial Flight Training	3
AVIA 336	Advanced Commercial Flight Training	3
AVIA 337	Mission/Humanitarian Flight Training	2
	Electives*	<u>6</u>
		53

\*Electives must be chosen in consultation with and approved by the academic advisor.

## GRAPHIC DESIGN (ASSOCIATE OF SCIENCE)

A student majoring in Graphic Design must complete a minimum of 48 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

### Core Requirements:

DSGN 110	Design Principles I	4
GRPH 124	Introduction to Graphics	4
GRPH 136	Digital Imaging I	4
GRPH 255	Graphic Design and Layout	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design Studio	4
GRPH 272	Typography	3
GRPH 370	Fundamentals of Packaging	4
GRPH 463	Web Publishing	
	or	4
GRPH 366	Multimedia Publishing	

PHTO 156	Principles of Photography	3
	Electives*	<u>10</u>
		48

\*Electives must be chosen from ART, COMM, CPTR, DSGN, GRPH, JOUR, MKTG, PHTO, and PRDN in consultation with and approved by the academic advisor assigned by the department chair.

Cognates:

ART 181	Analysis of Form	4
FLTV 135	Introduction to Filmmaking	4

## PRODUCT DESIGN (ASSOCIATE OF SCIENCE)

A student majoring in Product Design must complete a minimum of 48 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

Core requirements:

DSGN 110	Design Principles I	4
DSGN 111	Design Principles II	4
DSGN 121	Fundamentals of CAD	2
DSGN 215	Design Theory, History, & Criticism	4
GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 255	Graphic Design and Layout	4
PRDN 120	Models & Prototypes	3
PRDN 130	3D Design I	3
PRDN 210	Product Design Studio	4
PRDN 230	3D Design II	3
PRDN 330	3D Design III	3
TECH 220	Intro to Basic Woodworking	2
TECH 235	Materials & Processes	<u>4</u>
		48

Cognate:

ART 181	Analysis of Form	4
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## AVIATION MINOR

A student minoring in Aviation must complete 30 quarter hours.

The aviation program trains students using a Part 61 Federal Aviation Administration (FAA) training course outline. A specific level of mastery and progress is required to complete the academic courses, earn flight certificates and ratings, and continue in the program. To be successful in training and in the aviation industry students must demonstrate proficiency in learning, sound judgment, safety awareness, and good moral character. Students will be allowed to register for flight classes based on performance in prerequisite classes. Due to the demanding and unforgiving nature of aviation operations, the Chair of the Technology department in consultation with the aviation faculty may dismiss students from aviation classes at any time. Reasons for such action may include,

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but are not limited to, the following: reckless operations, safety concerns or violations, security concerns raised by foreign and domestic background information, excessive cancellations, or documented progress delays in training due to students’ teach-ability, skill, or retention of knowledge.

Once a student is enrolled at WWU, regardless of academic major, all subsequent flight training required as part of the student’s course of study must be completed in residence at WWU in WWU aircraft unless otherwise approved by the Aviation Faculty. Flight training completed away from WWU will not be guaranteed credit for the corresponding WWU course.

Required Courses:

AVIA 125	Air Traffic Control & Airspace	2
AVIA 140	Survey of Aviation	1
AVIA 141	Private Pilot Lectures	4
AVIA 142	Private Pilot Flight Training I	2
AVIA 143	Private Pilot Flight Training II	2
AVIA 144	Private Pilot Flight Training III	2
AVIA 234	Aviation Weather	2
AVIA 270	Aviation Human Factors	2
	Electives *	<u>12</u>
		30

\*3 must be upper-division. Approval of aviation advisor required. Electives must be chosen in consultation with and approved by the academic advisor.

GRAPHIC DESIGN MINOR

A student minoring in Graphic Design must complete 29 quarter hours:

Required Courses:

GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 255	Graphic Design and Layout	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design Studio	3
GRPH 272	Typography	3
PHTO 156	Principles of Photography	3
	Electives (must be upper division)*	<u>4</u>
		29

\*Electives must be chosen from GRPH, and PHTO prefix or TECH 321. Approval of graphic design advisor required.

PHOTOGRAPHY MINOR

A student minoring in Photography must complete 34 quarter hours:

Required Courses:

ART 312	Aesthetics and Photography	4
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FLTV 135	Introduction to Filmmaking	4
GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 263	Web Design Studio	4
PHTO 156	Principles of Photography	3
PHTO 256	Intermediate Digital Photography	3
PHTO 356	Advanced Digital Photography	4
	Electives*	<u>4</u>
		34

\*Electives must be chosen from GRPH and PHTO prefix. Approval of graphic design advisor required. In addition to any course offered within the Department of Technology, the following specific courses will be accepted for electives:

ART 160	Materials and Methods	3
ART 181	Analysis of Form	4
COMM 145	Communication and Languages in a Global Society	4
COMM 245	Directed Media Production	1-2;2
FLTV 201	Preproduction	1

## TECHNOLOGY MINOR

A student minoring in Technology must complete 30 quarter hours:

Required Courses:

DSGN 110	Design Principles I	4
DSGN 121	Fundamentals of CAD	2
TECH 235	Materials and Processes	4
	Electives (3 must be upper-division)*	<u>22</u>
		30

\*Approval of technology advisor required.

## WEB DESIGN MINOR

A student minoring in Web Design and Development must complete 31 quarter hours:

Required Courses:

GRPH 124	Introduction to Design	4
GRPH 136	Digital Imaging I	4
GRPH 262	Computer Illustration	4
GRPH 263	Web Design Studio	4
GRPH 272	Typography	3
GRPH 463	Web Publishing	4
	Electives*	<u>8</u>
		31

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\*In addition to any course offered within the Department of Technology, electives may be chosen from CPTR and COMM, and from the following courses in ART and JOUR, in consultation with and approved by the academic advisor.

ART 160	Materials and Methods	3
ART 181	Analysis of Form	4
ART 194	Introduction to Painting I	2
ART 264	Introduction to Sculpture I	2
ART 284	Introduction to Pottery I	2
ART 294	Introduction to Printmaking I	2
ILL 244	Introduction to Illustration	4
JOUR 148	Creativity and Communication	3
JOUR 245	Media Writing	4
JOUR 247	Copy Editing	3
JOUR 257	Introduction to Photojournalism	3
JOUR 341	Feature Writing	4
JOUR 346	Reporting Methods	3

See page 234 for a list of course descriptions. Look for courses with the following prefixes for the Technology Department: AUTO, AVIA, DSGN, GRPH, PHTO, PRDN, and TECH.



# SCHOOL OF THEOLOGY

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Carl Cosaert, Dean; Brant Berglin, Susan Bungard, Paul Dybdahl, Mathilde Frey, Pedrito Maynard-Reid, David Thomas, Alden Thompson, Jody Washburn.

The principal purposes of the School of Theology are to provide undergraduate education for students seeking to pursue religious callings such as pastoral ministry, chaplaincy, religious scholarship, and to teach religion and offer courses in religion for the general student body in harmony with the mission of the University.

Students interested in becoming pastors, chaplains, evangelists, Bible workers, or teachers of religion are best advised to pursue the Theology Major. This degree is the preferred degree for entering the various religious professions because it includes elements of religious practice, the necessary academic components, as well as the development of proficiency in two major Biblical Languages, Greek and Hebrew. The Theology Major is also designed to meet Seminary entrance requirements.

A Religion Major is also offered for those who wish to have an emphasis in religion at the undergraduate level, but who do not want or need to have the practical elements of ministry or biblical languages as part of their education. The School of Theology offers a third major, one in Biblical Languages. This major is intended for those who wish to gain facility in the basic tools for biblical study, especially those anticipating graduate work in this and related areas.

Candidates for the Theology degree who want to receive a recommendation from the faculty to Church employing agencies, in addition to completing the listed requirements for the degree, must go through the process of endorsement. The process of endorsement is more fully described in a separate handbook obtainable from the School of Theology. Those who achieve endorsement should expect to go on into some kind of internship before going to seminary, typically the Theological Seminary at Andrews University, where they will complete an additional two years of study in order to earn the basic ministerial degree, a Master of Divinity. Those planning to attend the Seminary should complete the undergraduate subjects required for entrance and maintain a minimum grade-point average of 2.50.

All majors must successfully complete a Senior Comprehensive Examination in order to graduate. In addition, Theology and Biblical Language majors are required to take Greek and Hebrew qualification exams prior to graduation which, if they pass at appropriate levels, may be recognized by the Seventh-day Adventist Theological Seminary according to their policies thus obviating the need for students to take the language entrance exams at the Seminary.

Students who plan to teach religion in Seventh-day Adventist academies are advised to obtain teacher certification as outlined in the Education section of this bulletin. Students should consult the Dean of the School of Theology about courses required as early as possible in their university career.

## RELIGION MAJOR (BACHELOR OF ARTS)

A student majoring in religion must complete 55 hours in the major (30 hours must be upper-division), the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin.



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Required Courses:

RELB 104	The Ministry of Jesus	4
RELB 111	Messages of the Old Testament	4
RELB 231	Exploring the New Testament	4
RELB 421	Interpreting the Bible	4
RELB	Biblical Studies Electives*	10
RELH 303	World Religions	4
RELH 457	History of Adventism	3
RELP 131	Introduction to Faith and Ministry	4
RELT 202	Christian Beliefs	4
RELT 326	Spirituality and Discipleship	4
RELT 348	Christian Ethics	4
RELT 417	Inspiration and Revelation	3
RELT 495	Colloquium (12 quarters or equivalent required)	0

\*All electives must be upper division. One class must be from the Old Testament and one from the New Testament.

Choose one from the following RELT courses (3 credits):

RELT 342	Issues of God and Faith	3
RELT 456	Systematic Theology I	3
RELT 457	Systematic Theology II	<u>3</u>
		55

Cognate:

HIST 254	History of Christianity	4
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*The School of Theology recommends that students take a philosophy class as one of their general studies humanities electives.*

Whenever possible, Religion majors are advised to take RELP 131 as their first course, followed by RELB 111 and RELB 231, in that order.

THEOLOGY MAJOR (BACHELOR OF ARTS)

A student majoring in theology must complete 76 quarter hours in the major, the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin.

Required Courses:

RELB 111	Messages of the Old Testament	4
RELB 231	Exploring the New Testament	4
RELB 302	Pentateuch	4
RELB 304	Hebrew Prophets	4
RELB 337	Jesus and the Gospels	4
RELB 340	Acts and New Testament Letters	4
RELB 412	Daniel and Revelation	4

RELB 496	Seminar in Biblical Hermeneutics	4
RELH 303	World Religions	4
RELH 455	Early Church History	3
RELH 457	History of Adventism	3
RELP 131	Introduction to Faith and Ministry	4
RELP 236	Church Worship	2
RELP 336	Church and Personal Ministry	4
RELP 482	Pastoral Care	2
RELP 484, 485	Church Leadership Seminar I, II	4
RELP 492	Public Evangelism I	1
RELP 493	Public Evangelism II	1
RELT 342	Issues of God and Faith	3
RELT 348	Christian Ethics	4
RELT 417	Inspiration and Revelation	3
RELT 456, 457	Systematic Theology I, II	6
RELT 495	Colloquium (12 required)	<u>0</u>
		76

## Cognates:

GREK 231, 232, 233	Greek I	9
GREK 331	Greek II	3
GREK 334	Greek Exegesis: Romans	4
HEBR 331, 332, 333	Hebrew I, II, III	12
HIST 254	History of Christianity	4
PSYC 130	General Psychology	4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 381	Biblical Preaching: Foundations	2
SPCH 382	Biblical Preaching: Exposition	2

*The School of Theology recommends that students take a philosophy class as one of their general studies humanities electives.*

Pastoral Mentoring Experience: Theology majors must participate in the program operated jointly between the School of Theology and the Upper Columbia Conference. Details of this program are available in the School of Theology Handbook.

## Note on Endorsement for Theology majors:

Students desiring a recommendation for denominational hiring will need to gain Endorsement by a two-step process described in the School of Theology Handbook.

## BIBLICAL LANGUAGES MAJOR (BACHELOR OF ARTS)

A student majoring in Biblical Languages must complete 52 quarter hours in the major, the required cognates, the general studies programs, and all baccalaureate degree requirements as outlined in this bulletin.

## Required Courses:

GREK 231, 232, 233	Greek I	9
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SCHOOL OF THEOLOGY

GREK 331	Greek II	3
GREK 334	Greek Exegesis: Romans	4
GREK 341	The Text of The New Testament	3
HEBR 331, 332, 333	Hebrew I, II, III	12
RELB 111	Messages of the Old Testament	4
RELB 231	Exploring the New Testament	4
RELB 496	Seminar in Biblical Hermeneutics	4
	*Electives	<u>9</u>
		52

\*Electives: 1 upper-division RELB and 1 Readings class.

Cognates:

HIST 254	History of Christianity	4
HIST 305	The Ancient Near East	
	or	4
HIST 306	Classical Greece and Rome	

BIBLICAL LANGUAGES MINOR

A student minoring in Biblical Languages must complete 30 quarter hours of biblical language courses:

Required Courses:

	Electives (9 must be upper division)*	30
*Approval of biblical languages advisor required. Recommended electives outside the minor are RELH 205, 455.		

RELIGION MINOR

A student minoring in religion must complete 30 quarter hours of religion courses:

Required Courses:

	*Electives (12 must be upper division)	30
*Approval of religion advisor recommended.		

All religion classes (courses with REL[x] prefixes), except RELP, may count toward a Religion Minor.

At least one lower-division religion course is required before students may take upper-division religion courses listed in the bulletin.

**See page 234 for a list of course descriptions.** Look for courses with the following prefixes for the School of Theology: RELB, RELH, RELM, RELP, RELT, GREK, HEBR, and SPCH.

# COURSES

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## ACCT - ACCOUNTING

### ACCT 201, 202, 203 - PRINCIPLES OF ACCOUNTING (4, 3, 3)

Study of accounting concepts and procedures required in the accumulation and presentation of data needed for decision-making. ACCT 203 may be taken before ACCT 202.

### ACCT 235 - FUNDAMENTALS OF INCOME TAX (2)

Fundamentals of United States federal income taxation and preparation of personal income tax returns.

### ACCT 321, 322, 323 - INTERMEDIATE ACCOUNTING (3, 4, 4)

Study of financial accounting concepts and content, construction, and analysis of financial statements within the framework of generally accepted accounting principles. Prerequisite: ACCT 202.

### ACCT 331 - MANAGERIAL COST ACCOUNTING (4)

Study of standards and budgets for control, cost-volume-profit relationships, discretionary and committed costs, application of overhead and analysis of variances, accounting systems for accumulating cost data, responsibility centers and controllable costs, long-range planning, and capital budgeting; quantitative techniques and computer problems applied to cost accounting. Prerequisite: ACCT 203.

### ACCT 335 - PERSONAL INCOME TAX (4)

Study of United States income taxation laws and regulations relating to tax planning and preparation of individual income tax returns.

### ACCT 341 - ACCOUNTING INFORMATION SYSTEMS (4)

Study of computerized accounting information systems and programs, including internal controls, systems documentation and analysis, and accounting software packages. Prerequisite: ACCT 201, CIS 140.

### ACCT 350 - NOT-FOR-PROFIT AND GOVERNMENT ACCOUNTING (4)

Study of the application of accounting principles, procedures, and presentations for not-for-profit and government institutions. Prerequisite: ACCT 202. Offered odd years.

### ACCT 421 - ADVANCED ACCOUNTING (4)

Preparation of consolidated financial statements, partnership accounting, foreign currency transactions, and translation of foreign currency financial statements. Prerequisite: ACCT 322. Offered even years.

### ACCT 430 - AUDITING (5)

Study of the auditing standards and concepts observed by certified public accountants in the examination of financial statements of business and other organizations. Prerequisite: ACCT 323, or permission of instructor.

### ACCT 435 - BUSINESS TAXATION (4)

Study of United States federal income taxation of corporations, partnerships, and fiduciaries. Prerequisite: ACCT 335. Offered odd years.

## COURSES

### ACCT 490 - INTERNSHIP (0-4; 4)

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the Bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## ANTH - ANTHROPOLOGY

### ANTH 225 - CULTURAL ANTHROPOLOGY (4)

Study of the origin and nature of culture, cultural universals, the uniformities and variations in human cultural development in a cross-cultural context. Field research methods are emphasized and fieldwork is embedded in the course.

## ART - ART

### ART 160 - MATERIALS AND METHODS (3)

Introduction to the characteristics and potential uses of a wide variety of wet, dry, and sculptural mediums in order to explore their applications within visual art. (Course fees apply.)

### ART 181 - ANALYSIS OF FORM (4)

An in-depth study of light and shadow utilizing the 5-value system. Concepts addressed include form, core, and cast shadows, edge distinction, value patterns, direct and reflected light, and composition. This course is taught using a variety of dry mediums. (Course fees apply.)

### ART 182 - LINEAR PERSPECTIVE (4)

Introduction to linear perspective systems and their use in the representation of three-dimensional forms. Content will include 1, 2, and 3-point perspective systems, plotting shadows and reflections, as well as issues of composition within the boundaries of a plane. Prerequisite or Corequisite: ART 181. (Course fees apply.)

### ART 183 - SKETCHING (4)

Focus on developing a student's ability to clearly, efficiently, and aesthetically represent complex concepts through drawing. Prerequisites: ART 181 and ART 182, or by permission of instructor. (Course fees apply.)

### ART 194 - STILL LIFE PAINTING (2)

Introduction to still life painting using oil paint. Emphasis is placed on developing a familiarity with classical techniques. Course content includes monochromatic, limited, and full palette paintings of a variety of still life groupings. Also includes instruction in basic visual organization and drawing. Prerequisite: ART 181. (Course fees apply.)

### ART 195 - DIGITAL PAINTING (2)

Introduction to the basic concepts and practices of painting in a digital format. Prerequisites: ART 181, GRPH 136.

### ART 196 - MIXED MEDIA PAINTING (2)

Introduction to the many combinations of mediums available and their potential use for artists in the creative process. The historical context of mixed media art

will be explored through a series of projects. Prerequisites: ART 181. (Course fees apply.)

#### ART 251 - INTRODUCTION TO ART (4)

Introduction to art for liberal arts students who wish to better understand and appreciate the visual arts of painting, sculpture, architecture, printmaking, and the minor arts. Will not apply toward a major or minor in art.

#### ART 260 - PRINCIPLES OF VISUAL COMPOSITION (4)

Intensified study of the basic elements of design aimed to develop cognizance of visual organization. Prerequisite: ART 160. (Course fees apply.)

#### ART 264 - INTRODUCTION TO SCULPTURE (2)

The study and application of three-dimensional forms in space using varied media. (Course fees apply.)

#### ART 284, 285, 286 - INTRODUCTION TO POTTERY I, II, III (2, 2, 2)

Introduction to pottery and ceramic sculpture using wheel-thrown and hand-built forms. Stresses design as it relates to form, function, and glaze decoration. Includes an introduction to the different methods of kiln firing. (Course fees apply.)

#### ART 294 - INTRODUCTION TO PRINTMAKING (2)

Introduction to the art of printmaking. Exploration of linoleum relief, reduction, and multi-block printing. Monoprints, collagraphs, and an introduction to the intaglio method are also addressed. (Course fees apply.)

#### ART 307 - ANATOMY FOR ARTISTS (3)

Advanced study of the forms and systems of the human body as they pertain to visual artists. Emphasis is placed on skeletal and muscular structures both at rest and in tension. Course taught using diagrams, skeletal models, and plaster models. Prerequisites: ART 183. (Course fees apply.)

#### ART 312 - AESTHETICS AND PHOTOGRAPHY (4)

Explores a wide range of fine art photography of the 19th and 20th centuries. Considers the aesthetic choices that reflect the basic elements of art, and includes exploration of historical context and social goals. Guest presentations in lecture and textual studies will also be included. Students develop a black and white portfolio with emphasis on aesthetic and spiritual content. No darkroom experience necessary. Offered even years.

#### ART 317 - ADVANCED PRINTMAKING (2; 6)

Advanced study of the various processes of intaglio printmaking, drypoint, engraving, etching, and lithography. Open to majors and minors only. Prerequisites: ART 161, 162, 163; ART 184, 185, 186; ART 294, 295, 296. (Course fees apply.)

#### ART 324, 325, 326 - HISTORY OF WORLD ART (3, 3, 3)

Chronological study of the great periods in the history of art, their causes and developments; includes discussion of the relation between art and society and the implications of aesthetic understanding in each period.

## COURSES

### ART 334 - ADVANCED PORTRAIT PAINTING (2)

Advanced study of formal portrait painting through a classical context. Topics such as the pose, composition, lighting of the model, and paint management will be covered. Prerequisites: ART 194, 307. (Course fees apply.)

### ART 335 - ABSTRACT AND EXPRESSIVE PAINTING (4)

Advanced study of the visual abstract spectrum as it pertains to art making. Course explores the varying degrees of visual abstraction and the processes involved in both conceptualization and production. Prerequisites: ART 194. (Course fees apply.)

### ART 360 - ADVANCED VISUAL COMPOSITION (4)

Advanced study of the elements of visual organization as they pertain to three-dimensional form. Prerequisite: ART 260. (Course fees apply.)

### ART 364 - ADVANCED SCULPTURE (2; 6)

Advanced study of three-dimensional design principles, using metal, fiberglass, wood, and stone, emphasizing experimentation in direction, media, and techniques. Prerequisites: ART 264. (Course fees apply.)

### ART 374 - ADVANCED POTTERY AND CERAMIC SCULPTURE (2; 6)

Advanced study of the relationship of form, design, and decoration to tableware and hand-built, sculptural forms. Includes the understanding and making of clay, glaze formulation, construction methods, and kiln firing procedures. Prerequisites: ART 284, 285, 286. (Course fees apply.)

### ART 395 - METHODS OF TEACHING ART (2)

Study of the objectives for and methods of teaching art in grades K-12. Includes an introduction to the principles of design and an exploration of the materials and techniques appropriate for K-12 students. Will not apply toward a major or minor in art. (Course fees apply.)

### ART 491 - PROFESSIONAL PRACTICES FOR ARTISTS (1)

A discussion of private business basics, self-promotion, networking, gallery practices, workflow, studio layout, clientele communication, etc. Students will develop an individualized self-promotion package. Open to senior art majors only.

### ART 490 - INTERNSHIP (0-4; 4)

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in off-campus setting. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## AUTO - AUTOMOTIVE

### AUTO 114 - PERSONAL CAR CARE (3)

Study of the automobile with emphasis on general maintenance and service procedures. Specifically designed for the student without an automotive background. Two lectures and one laboratory per week.

**AUTO 134 - INTERNAL COMBUSTION ENGINE THEORY (2)**

Study of the internal combustion engine, including theory of operation, analysis of construction, working principles, and components as applicable to gasoline and diesel engines. Two lectures per week. Prerequisite: permission of instructor.

**AUTO 135 - INTERNAL COMBUSTION ENGINE LABORATORY (2)**

Laboratory study of engine components through disassembly, inspection, measurement, servicing, and reassembly of engines. Corequisite: AUTO 134.

**AUTO 145 - MANUAL DRIVE TRAINS AND AXLES (2)**

Study of manual transmissions and the automotive drive train and axle system with emphasis on proper procedures in diagnosis, servicing, and repair. Two lectures per week. This class will help prepare the student for the ASE A3 Test.

**AUTO 146 - MANUAL DRIVE TRAINS AND AXLES LABORATORY (2)**

Laboratory study and application of technical information and skills required to diagnose, service, adjust, and perform test procedures on clutch assemblies, manual transmissions, transfer cases, drive lines, universal joints, bearings, and final drive assemblies. Corequisite: AUTO 145. (Course fees apply.)

**AUTO 156 - ELECTRICAL SYSTEMS (2)**

Study of the principles and operation of automotive electrical systems and components, including charging, cranking, ignition, lighting, and accessory systems. This class will help prepare the student for the ASE A6 Test. Two lectures per week.

**AUTO 157 - ELECTRICAL SYSTEMS LABORATORY (2)**

Laboratory study and application of technical information and skills required to diagnose service, and repair automotive starting, charging, ignition, lighting, and accessory systems. Corequisite: AUTO 156. (Course fees apply.)

**AUTO 280 - PRACTICUM (1-6; 6)**

Laboratory work in Auto chosen in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit.

**AUTO 286 - ENGINE REBUILDING LABORATORY (2)**

Experience in engine rebuilding involving machining operations such as cylinder reconditioning, valve train servicing, lubrication, and cooling system servicing. Two laboratories per week. Prerequisites: AUTO 134, 135.

**AUTO 291 - ASE A1 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A1 Engine Repair test. Students with current National ASE certification A1 are granted four lower division automotive credits and are exempt from AUTO 134 and 135.

**AUTO 292 - ASE A3 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A3 Manual Drive Train and Axles test. Students with current National ASE certification A3 are granted four lower division automotive credits and are exempt from AUTO 145 and 146.

**AUTO 293 - ASE A6 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A6



## COURSES

Electrical/Electronic Specialist test. Students with current National ASE certification A6 are granted four lower division automotive credits and are exempt from AUTO 156 and 157.

### AUTO 314 - ENGINE PERFORMANCE (2)

Study of logical diagnosis and troubleshooting techniques as applied to engine repair and drivability. Theory and operation of fuel and emission control systems. Emphasizes use of electronic instrumentation as a diagnostic tool. Two lectures per week. This class will help prepare the student for the ASE A8 Test. Prerequisites: AUTO 134, 135, 156, 157. Corequisite: AUTO 315.

### AUTO 315 - ENGINE PERFORMANCE LABORATORY (2)

Laboratory study and application of diagnostic principles in troubleshooting drivability, emissions, and performance problems of automotive engines. Includes experience with a computerized dynamometer and electronic test equipment. Corequisite: AUTO 314. (Course fees apply.)

### AUTO 335 - SUSPENSION AND STEERING SYSTEMS (2)

Study of automotive suspension and steering system theory, designs, and applications, including the integration of tires and wheels, principles of wheel alignment, and methods of suspension component diagnosis and repair. This class will help prepare the student for the ASE A4 Test. Two lectures per week. Prerequisites: AUTO 145; AUTO 146. Corequisite: AUTO 336. Offered odd years.

### AUTO 336 - SUSPENSION AND STEERING SYSTEMS LABORATORY (2)

Laboratory study and application of suspension and steering systems diagnosis and service procedures, including tire service, repair, and balancing. Experience performing 4-wheel alignments on a variety of vehicles using state-of-the-art computerized alignment equipment. Corequisite: AUTO 335. Offered odd years. (Course fees apply.)

### AUTO 337 - BRAKE SYSTEMS AND TRACTION CONTROL (2)

Study of automotive brake and traction control systems with specific emphasis on system theory of operation. Includes study of ABS (anti-lock braking systems) systems and their integration with other vehicle systems. This class will help prepare the student for the ASE A5 Test. Two lectures per week. Corequisite: AUTO 338. Offered even years.

### AUTO 338 - BRAKE SYSTEMS AND TRACTION CONTROL LAB (2)

Laboratory study and application of brake and ABS system troubleshooting and repair, brake system service, traction control system troubleshooting and repair. Experience using computerized servicing tools. Corequisite: AUTO 337. Offered even years. (Course fees apply.)

### AUTO 355 - CLIMATE CONTROL SYSTEMS (2)

Study of climate control systems and service procedures as they relate to passenger vehicles and light trucks with emphasis on diagnosis and current control technologies. This class will help prepare the student for the ASE A7 Test. Corequisite: AUTO 356. Offered odd years.

### AUTO 356 - CLIMATE CONTROL SYSTEMS LABORATORY (2)

Laboratory study and application of automotive climate control system service techniques; includes a broad range of diagnostic, repair, and service experiences. Corequisite: AUTO 355. Offered odd years. (Course fees apply.)

**AUTO 357 - AUTOMATIC TRANSMISSIONS AND TRANSAXLES (2)**

Study of passenger car and light truck automatic transmission and transaxle theory and service procedures. Emphasis on diagnosis and repair procedures of the latest control systems. This class will help prepare the student for the ASE A2 Test. Corequisite: AUTO 358. Offered even years.

**AUTO 358 - AUTOMATIC TRANSMISSIONS AND TRANSAXLES LAB (2)**

Laboratory study and application of automatic transmission service procedures, repair procedures, and diagnosis of late-model control system problems using computerized test equipment. Corequisite: AUTO 357. Offered even years. (Course fees apply.)

**AUTO 365 - DIESEL ENGINES (3)**

Study of diesel engine theory; includes types of engines, fuel injection systems, air induction systems, exhaust systems, cooling systems, starting, and controls. Two lectures and one laboratory per week. Prerequisites: AUTO 156, 157. Recommended: AUTO 286. Offered even years. (Course fees apply.)

**AUTO 391 - ASE A4 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A4 Suspension and Steering test. Students with current National ASE certification A4 are granted four upper division credits and are exempt from AUTO 335 and 336.

**AUTO 392 - ASE A5 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A5 Brakes test. Students with current National ASE certification A5 are granted four upper division credits and are exempt from AUTO 337 and 338.

**AUTO 393 - ASE A7 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A7 Heating and Air Conditioning test. Students with current National ASE certification A7 are granted four upper division credits and are exempt from AUTO 355 and 356.

**AUTO 394 - ASE A2 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A2 Automatic Transmissions and Transaxles test. Students with current National ASE certification A2 are granted four upper division credits and are exempt from AUTO 357 and 358.

**AUTO 395 - ASE A8 VALIDATION (4)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the A8 Engine Performance test. Based on successful completion of a standardized examination, students with current National ASE certification A8 are granted four upper division automotive credits and are exempt from AUTO 314 and 315.

**AUTO 396 - ASE T2 VALIDATION (3)**

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the T2 Diesel

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Engines Test. Students with current National ASE certification T2 are granted three upper division automotive credits and are exempt from AUTO 365.

### AUTO 397 - ASE L1 VALIDATION (3)

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the L1 Advanced Engine Performance Specialist test. Students with current National ASE certification L1 are granted three upper division automotive credits and are exempt from AUTO 414.

### AUTO 414 - ADVANCED ENGINE PERFORMANCE (3)

Advanced study of automotive engine management systems theory and application. Specific emphasis on solving complicated drivability and emissions problems with use of sophisticated test equipment and logic. This class will help prepare the student for the ASE L1 Test. Two lectures and one laboratory per week. Prerequisites: AUTO 314, 315. Offered odd years. (Course fees apply.)

### AUTO 434 - HIGH PERFORMANCE ENGINE TUNING (3)

Advanced study of aftermarket high performance engine modifications and tuning. Includes specific instruction in dynamometer tuning on late model GM, Ford, and Chrysler engines using aftermarket tuning hardware and software such as HP Tuners, AEM and SCT. Prerequisite: AUTO 414. Offered even years. (Course fees apply.)

### AUTO 466 - BODY ELECTRONICS AND COMPUTER SYSTEMS (3)

Study of vehicle electronic and control systems that are not part of the power train. Includes theory of operation, diagnosis, and service of systems such as anti-theft, navigation, audio, video, remote vehicle controls, integrated lighting, communications, wipers, as well as others. Emphasizes heavy use of computerized test equipment, scanners, and wiring diagrams for diagnosis. Two lectures and one laboratory per week. Prerequisites: AUTO 156, AUTO 335, AUTO 337, AUTO 355. Offered odd years. (Course fees apply.)

### AUTO 473 - ALTERNATIVE FUELS (3)

Advanced study of theory and service of alternative vehicle fuel and propulsion systems such as LPG, natural gas, alcohol, electric, and hybrid systems. Two lectures and one laboratory per week. Prerequisites: AUTO 314, AUTO 466, or permission of instructor. Offered even years. (Course fees apply.)

### AUTO 480 - ADVANCED PRACTICUM (1-6; 6)

Advanced laboratory work in Auto in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit. Prerequisite: Lower division work in chosen area.

### AUTO 490 - INTERNSHIP (0-4; 4)

Individual contract arrangement involving students, faculty, cooperative businesses and organizations to gain experience in a work environment. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. A response paper will be done at the end of the internship experience. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit)

**AUTO 495 - COLLOQUIUM (0)**

Experiences and lectures relating to current automotive industry trends, technologies, environmental, and employment issues. Open only to students of junior standing or higher. Automotive degree candidates must satisfactorily complete two quarters, at least one of which must be during the senior year. Grades S or NC. Additional course fees apply.

**AVIA - AVIATION****AVIA 110 - INTRODUCTION TO FLIGHT (1)**

An introduction to the experience of flight. The student will learn basic aviation principles and develop an understanding of the parts of the airplane. Will not apply toward a major or minor in Technology. Cannot be taken simultaneously with or after AVIA 141.

**AVIA 125 - AIR TRAFFIC CONTROL & AIRSPACE (2)**

An introduction to the U.S. National Airspace System with emphasis on understanding and applying critical elements of ATC in flight operations. Along with learning fundamental knowledge of the ATC system in the US, topics will include: navigational aids; airspace; communications; the Code of Federal Aviation Regulations; ATC procedures; control tower operations; non-radar operations; radar operations; and differing types of environment concerns within a geographic area. Offered odd years.

**AVIA 135 - REMOTE PILOT GROUND SCHOOL (2)**

An overview of the knowledge necessary to complete the Remote Pilot Certificate, including applicable Federal Aviation Regulations (FARs), the National Airspace System, aviation weather, weight and loading, and aerodynamics. Prepares the student to pass the FAA Remote Pilot Knowledge Test. (Course fees apply.)

**AVIA 140 - SURVEY OF AVIATION (1)**

Introduction to the aviation program and industry with the intention of preparing the student to begin flight training. Topics covered: Careers and opportunities; academics and flying; financial arrangements for training; aviation medical certification; ethics; substance use and its effect on pilot careers; professionalism, flight scheduling; industry standards; and familiarization with the Federal Aviation Administration (FAA), Transportation Security Administration (TSA), and National Transportation Safety Board (NTSB).

**AVIA 141 - PRIVATE PILOT LECTURES (4)**

Instructor-led discussions concerning aeronautical decision-making (ADM), crew resource management (CRM), aerodynamics, airworthiness, aeromedical factors, night and high altitude operations, weather hazards and reports, airport operations, flight planning, weight and balance (W&B), aircraft performance limitations, aircraft systems and abnormal/emergency procedures, and scenario based training to simulate more closely the actual flight conditions known to cause most fatal General Aviation (GA) accidents. Will also include an introduction and overview to the Federal Aviation Regulations (FARs governing the applicable parts and subparts to the private pilot certificate. Prepares the student to pass the FAA Private Pilot Knowledge Test. (Course fees apply.)

**AVIA 142 - PRIVATE PILOT FLIGHT TRAINING I (2)**

Pre-solo aeronautical knowledge and flight training in preparation for solo flight. Topics of discussion will be reviewed from Private Pilot Lectures AVIA 141. Must

## COURSES

be taken after or concurrently with AVIA 140, and AVIA 141, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 143 - PRIVATE PILOT FLIGHT TRAINING II (2)

Flight instruction in advanced takeoffs and landings, night operations, and cross country flight operations in preparation for solo cross country flight. Includes a review of flight maneuvers and knowledge necessary to pass the Private Pilot Practical Test. Topics of discussion will be reviewed from Private Pilot Lectures AVIA 141.

Prerequisite: AVIA 142. (Course fees apply.)

### AVIA 144 - PRIVATE PILOT FLIGHT TRAINING III (2)

Flight instruction in solo cross country flight operations, advanced takeoffs and landings, night operations, and advanced maneuvers necessary to complete the Private Pilot Practical Test. Topics of discussion will be reviewed from Private Pilot Lectures AVIA 141. Prerequisite: AVIA 143. (Course fees apply.)

### AVIA 225 - PILOT ORIENTATION (0)

Flight and ground instruction to provide orientation for pilots who have completed flight training outside of Walla Walla University. Will include aircraft operations, checklist usage, and compliance with WWU Standard Operating Procedures.

(Course fees apply.)

### AVIA 234 - AVIATION WEATHER (2)

Study of weather, concepts of weather, weather hazards, meteorological flight planning, aviation weather equipment, and consideration of weather conditions as they relate to aircraft and flight performance. Offered odd years.

### AVIA 256 - AIRCRAFT SYSTEMS AND BASIC MAINTENANCE (4)

Study of aircraft systems and basis maintenance. Topics will include: Engines of different types; systems such as propeller, electrical, environmental, hydraulic, pneumatics, fuel, ignition, lubrication, and pressurization systems, hydraulic systems, air conditioning and heating systems, oxygen systems, landing gear systems, brake systems, ice and rain detection/protection systems, fire detection/extinguishing systems, fuel systems, and flight controls. Offered even years.

### AVIA 261 - INSTRUMENT PILOT LECTURES (4)

Study of aircraft flight instruments, instrument interpretation, instrument publications, regulations and procedures. Instructor-led discussions concerning aeronautical decision-making (ADM), crew resource management (CRM), aerodynamics, airworthiness, aeromedical factors, night and high altitude operations, weather hazards and reports, airport operations, flight planning, weight and balance (W&B), aircraft performance limitations, aircraft systems and abnormal/emergency procedures, and scenario based training to simulate more closely the actual flight conditions known to cause most fatal General Aviation (GA) accidents. Will also include an introduction and overview to the Federal Aviation Regulations (FARs) governing the applicable parts and subparts to the instrument pilot rating. Prepares student to pass the FAA Instrument Knowledge Test. Prerequisite: AVIA 143 and private pilot certificate, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 262 - INSTRUMENT FLIGHT TRAINING (3)

Flight instruction in instrument departures, attitude instrument flying, holding procedures, instrument navigation, and enroute navigation. Topics of discussion will be reviewed from Instrument Pilot Lectures AVIA 261. Prerequisite: AVIA 143 and private pilot certificate, or permission of the Aviation Faculty. (Course fees apply.)

**AVIA 263 - ADVANCED INSTRUMENT FLIGHT TRAINING (3)**

Flight instruction in instrument approaches and arrival procedures. Includes the long IFR cross-country flight required for the instrument rating. Topics of discussion will be reviewed from Instrument Pilot Lectures AVIA 261.

Prerequisite: AVIA 262. Must be taken after or concurrently with AVIA 261. (Course fees apply.)

**AVIA 264 - CROSS COUNTRY FLIGHT (2)**

Directed cross-country flight experience to meet the flight requirements for the instrument pilot flight training course outline. Prerequisite: AVIA 143 and private pilot certificate, or permission of the Aviation Faculty. (Course fees apply.)

**AVIA 270 - AVIATION HUMAN FACTORS (2)**

An overview of the role of psychology in the field of aviation. Explores the human factors' effect on such things as the design of aircraft systems, the selection and training of pilots, stress, fatigue, decision making, workload management, situational awareness, crew coordination, communication, human error, fitness, attitudes, and substance abuse. Prerequisite: AVIA 262 or permission of the Aviation Faculty.

**AVIA 280 - PRACTICUM (1-6; 6)**

Laboratory work in Aviation chosen in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit. (Course fees apply.)

**AVIA 325 - ADVANCED CROSS COUNTRY FLIGHT (2)**

Directed cross-country flight experience to meet the flight requirements for the commercial pilot flight training course outline. Prerequisite: AVIA 264, or permission of the Aviation Faculty. (Course fees apply.)

**AVIA 334 - COMMERCIAL PILOT LECTURES (4)**

Study of advanced aircraft systems, advanced aerodynamics, commercial operations, commercial pilot maneuvers, and the commercial environment. Instructor-led discussions concerning aeronautical decision making (ADM), crew resource management (CRM), aerodynamics, airworthiness, aeromedical factors, night and high altitude operations, weather hazards and reports, airport operations, flight planning, weight and balance (W&B), aircraft performance limitations, aircraft systems and abnormal/emergency procedures, and scenario-based training to simulate more closely the actual flight conditions known to cause most fatal General Aviation (GA) accidents. Will also include an introduction and overview to the Federal Aviation Regulations (FARs) governing the applicable parts and subparts to the commercial pilot certificate. Prepares student to pass the FAA Commercial Knowledge Test. Prerequisite: AVIA 143 and private pilot certificate. (Course fees apply.)

**AVIA 335 - COMMERCIAL FLIGHT TRAINING (3)**

Advanced and complex aircraft flight training, including systems training, takeoffs and landings, and complex aircraft emergency procedures. Topics of discussion will be reviewed from Commercial Pilot Lectures AVIA 334. Prerequisite: AVIA 143 and private pilot certificate. (Course fees apply.)

**AVIA 336 - ADVANCED COMMERCIAL FLIGHT TRAINING (3)**

Advanced aircraft maneuvers and skills in preparation for the commercial checkride. Includes training of flight maneuvers and knowledge necessary to pass the Commercial Pilot Practical Test. Topics of discussion will be

## COURSES

reviewed from Commercial Pilot Lectures AVIA 334. Prerequisite: AVIA 335. Must be taken after or concurrently with AVIA 334. (Course fees apply.)

### AVIA 337 - MISSION/HUMANITARIAN FLIGHT TRAINING (2)

High performance aircraft training, developing pilot skills related to mission/humanitarian flight operations. Training to include an introduction to unimproved runway flight operations and flying in mountainous terrain. Topics of discussion will be reviewed from Commercial Pilot Lectures AVIA 334.

Prerequisite: AVIA 336, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 340 - MULTI-ENGINE FLIGHT TRAINING (3)

Flight instruction in multi-engine aircraft including: takeoffs and landings, air work, single-engine operations, and emergency procedures. Topics of discussion will be reviewed from Commercial Pilot Lectures AVIA 334. Includes training of flight maneuvers and knowledge necessary to pass the Multi-Engine Rating Practical Test.

Prerequisite: AVIA 334 and AVIA 336 and commercial pilot single-engine certificate, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 355 - AVIATION SAFETY (2)

Focus on aircraft and airline safety with study and application of decision making, risk management, and handling of aircraft related emergencies. Topics of discussion: incidents; accidents; safety studies; and accident investigations with a focus on causal and contributing factors to those investigated events and any resulting changes to mitigate future risk. Prerequisites: AVIA 270 or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 356 - PRINCIPLES OF FLIGHT INSTRUCTION (2)

Study of the methods of flight instruction, course organization, lesson planning, student progression, and practical teaching experiences. Prepares the student for the Flight Instructor and Fundamentals of Instructing Knowledge Tests.

Prerequisite: AVIA 336, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 357 - FLIGHT INSTRUCTOR TRAINING (2)

Flight instruction introducing the methods of training for primary and advanced flight instruction, including upset/spin training. Prerequisite: AVIA 336 and commercial pilot certificate, or permission of the Aviation Faculty. (Course fees apply.)

### AVIA 358 - ADVANCED FLIGHT INSTRUCTOR TRAINING (3)

Flight instruction in preparation for the Certified Flight Instructor Practical Test. This includes training in primary and advanced flight instruction techniques.

Prerequisite: AVIA 357. Must be taken after or concurrently with AVIA 356. (Course fees apply.)

### AVIA 450 - AVIATION LAW AND REGULATIONS (2)

Study and application of the Code of Federal Regulations (CFR). Emphasis on 14 and 49 CFR parts. Discussion topics to include: constitutional law, administrative law, enforcement actions, and international law affecting aviation. Additionally, may include the consideration and analysis of aviation regulatory environments and processes, such as regulatory certifications, rulemaking, and legislation.

Prerequisite: GBUS 361, or permission of the Aviation Faculty. Offered odd years.

### AVIA 455 - CREW RESOURCE MANAGEMENT (2)

Study of the many facets of Crew Resource Management (CRM), situational awareness, information processing, communications, and decision making. Includes human factors and human error as it relates to today's modern aircraft.

Students will have the opportunity to apply CRM principles in both single and multi-pilot roles. Prerequisite: AVIA 355, or permission of the Aviation Faculty. (Course fees apply.)

#### AVIA 458 - INSTRUMENT INSTRUCTOR FLIGHT TRAINING (2)

Flight instruction in preparation for the Instrument Flight Instructor Practical Test. Prerequisite: AVIA 358 and certified flight instructor certificate, or permission of the Aviation Faculty. (Course fees apply.)

#### AVIA 460 - MULTI-ENGINE INSTRUCTOR FLIGHT TRAINING (2)

Flight instruction in preparation for the Multi-Engine Flight Instructor Practical Test. Prerequisite: AVIA 358 and certified flight instructor certificate, or permission of the Aviation Faculty. (Course fees apply.)

#### AVIA 480 - ADVANCED PRACTICUM (1-6; 6)

Advanced laboratory work in Aviation in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit. Prerequisite: Lower division work in chosen area. (Course fees apply.)

#### AVIA 490 - INTERNSHIP (0-4; 4)

Individual contract arrangement involving students, faculty, cooperative businesses and organizations to gain experience in a work environment. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. A response paper will be done at the end of the internship experience. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

#### AVIA 496 - SENIOR SEMINAR (2)

Preparation for the aviation industry and job market to include the following: aviation resume design, technical interview training, simulator evaluation, ethics, and professionalism. Open only to Aviation students with senior standing. (Course fees apply.)

### **BIOL - BIOLOGY**

#### BIOL 105, 106 - CONTEMPORARY BIOLOGY (4, 4)

Introduction to biological concepts and information for nonscience majors. Information is presented in the context of contemporary issues faced by society. First quarter emphasizes the biology of the human organism and the second quarter emphasizes the functioning of ecosystems and the challenges of human impacts upon the environment. Course is designed to meet the general studies science requirements. One laboratory per week. Will not apply to a biology major or minor. (Course fees apply.)

#### BIOL 121, 122, 123 - ANATOMY AND PHYSIOLOGY (4, 4, 4)

Study of human (organ-system) anatomy and physiology with reference to cellular, genetic, and developmental relationships. First quarter focuses on the integumentary, skeletal, and muscular systems. Second quarter focuses on nervous, endocrine, and circulatory systems. Third quarter focuses on digestive, urinary, lymphatic, respiratory, and reproductive systems. Must be taken in



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sequence. One laboratory per week. Will not apply to biology major electives. High school or college chemistry strongly recommended. (Course fees apply.)

### BIOL 141, 142, 143 - GENERAL BIOLOGY (4, 4, 4)

Study of the basic principles of biology of animals, plants, and microorganisms. Topics include the cell, physiology, genetics, development, taxonomy, and ecology. Must be taken in sequence. One laboratory per week. High school or college chemistry strongly recommended. (Course fees apply.)

### BIOL 216 - INTRODUCTION TO BIOLOGICAL RESEARCH I (3)

Study of the process of science throughout history, current principles of scientific research, and the function of the scientific method. Will include methods of literature research, scientific writing, and formal oral presentations.

Prerequisite: BIOL 143.

### BIOL 222 - MICROBIOLOGY (5)

Study of the nature and control of bacteria and other disease-producing organisms; consideration of their relationship to human disease and the basic concepts of immunology. One laboratory per week. Will not apply to biology major.

Prerequisites: BIOL 141, 142 or permission of instructor. (Course fees apply.)

### BIOL 250 - BIostatISTICS (4)

Practice and theory of statistical methods in quantitative biology.

Prerequisites: BIOL 143, MATH 121, 122, or permission of instructor.

## BIOLOGICAL SCIENCES UPPER DIVISION PREREQUISITES

BIOL 141, 142, and 143 are prerequisites for all upper-division courses.

### BIOL 305 - GENERAL ECOLOGY (4)

Study of the relationship of plants and animals, both as individuals and assemblages, to their physical and biological environment. Laboratory work includes field studies designed to examine ecological principles. One laboratory per week. (Course fees apply.)

### BIOL 316 - INTRODUCTION TO BIOLOGICAL RESEARCH II (1-2; 2)

The student will work with a departmental advisor on research activities such as a literature search, preliminary experiments, data collection, or data analysis.

May be repeated with a different research advisor, or continued with the same research advisor. Prerequisite: BIOL 250 and permission of research advisor.

Graded S or NC.

### BIOL 326 - JOURNAL CLUB: (1; 3)

Students will read primary science research articles on a selected topic and then meet weekly to informally discuss and critically analyze the article, understand the methods, data and figures, and identify the article's broader implications. May be repeated for credit when topics vary. Prerequisite: BIOL 250.

### BIOL 360 - PLANT BIOLOGY (4)

Fundamental principles of plant biology with emphasis on morphology, anatomy, taxonomy, physiology, ecology, and natural history of algae, non-vascular, and vascular plants. Three class hours and one three-hour laboratory per week.

(Course fees apply.)

**BIOL 381 - CELL BIOLOGY I: STRUCTURE AND BIOENERGETICS (4)**

The first quarter of a year-long sequence that covers the cell and molecular biology, and biochemistry of living cells. Topics include structure and function of biological membranes and subcellular organelles, metabolism and bioenergetics, cytoskeleton and motility, signal transduction, and cell-cell interactions. Priority will be given to biology, biochemistry, and bioengineering majors. One laboratory per week. Corequisite: CHEM 321 or permission of instructor. (Course fees apply.)

**BIOL 382 -CELL BIOLOGY II: GENETICS AND MOLECULAR BIOLOGY (4)**

The second quarter of a year-long sequence that covers the cell and molecular biology, and biochemistry of living cells. A study of DNA replication, mutation and repair, the transfer of information from DNA to protein, prokaryotic gene regulation, and the principles of heredity in individuals and populations. Laboratory will include an introduction to recombinant DNA technology. One laboratory per week. Prerequisites: BIOL 381 and CHEM 321. (Course fees apply.)

**BIOL 383 - CELL BIOLOGY III: GENOMICS AND REGULATION (4)**

The third quarter of a year-long sequence that covers the cell and molecular biology and biochemistry of living cells. Advances in genomics, epigenetics, and control of gene expression. Topics will be explored in the context of development; growth, differentiation, morphogenesis, and cancer. One laboratory per week. Prerequisites: BIOL 381, 382, and CHEM 322. (Course fees apply.)

**BIOL 403 - ORNITHOLOGY (4-5)**

Study of native birds of North America, with emphasis on physiology, identification, migration, and life histories. One laboratory per week. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours.) A weekend field trip is required. Offered even years. (Course fees apply.)

**BIOL 405 - NATURAL HISTORY OF VERTEBRATES (4)**

Study of vertebrates with emphasis on natural history, ecology, physiology, and taxonomy. One laboratory per week. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours.) A weekend field trip is required. Offered odd years. (Course fees apply.)

**BIOL 407 - ENTOMOLOGY (4-5)**

A study of the insects of the world. Topics include their diversity, behavior, ecology, anatomy, physiology, and relationships with humans. Field and laboratory activities emphasize sampling, specimen preparation, and identification of local species.

**BIOL 410 - LIMNOLOGY (4-5)**

An introduction to the history, structure, physical characteristics, and biota of lakes, river, and streams and to the physical, biological, and geochemical processes occurring there. One laboratory per week with some Sunday labs. Prerequisite: Junior standing in a science, mathematics, or engineering major or consent of instructor. Offered odd years only on College Place campus. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours.) (Course fees apply.)

**BIOL 416 - RESEARCH IN BIOLOGY (1-4; 4)**

The student will work with a departmental advisor on an independent basis. Research may include data collection and analysis and must include a written

## COURSES

manuscript. May be repeated with a different research advisor or continued with the same research advisor. Prerequisite: BIOL 316 and permission of research advisor.

### BIOL 419 - FIELD STUDIES (1-2; 6)

A short-term intensive study of flora and fauna in a region of special biological interest, along with their interrelations with one another. Orientation and follow-up required. May be repeated with professor's permission. Prerequisite: BIOL 143.

### BIOL 420 - SOCIOBIOLOGY (3)

A study of current concepts and ideas relating to the origin and structure of social behavior in animals. Special attention is focused on the adaptive significance of species-specific behavior in a wide variety of environments.

### BIOL 421 - CANCER BIOLOGY (3-5)

A study of the molecular, cellular, biochemical, and genetic basis of cancer. Topics will include the hallmarks of cancer, cell cycle, signal transduction, oncogenes, tumor suppressor genes, angiogenesis, genome integrity, programmed cell death, and metastasis. Primary research literature will be reviewed. (College Place campus - 3 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours.) Offered alternate years.

### BIOL 422 - CANCER BIOLOGY LABORATORY (1)

Laboratory integrated with BIOL 421. A study of tissue histology and methods used for immunoblotting, immunohistochemistry, and flow cytometry. Corequisite: BIOL 421. (Course fees apply.)

### BIOL 426 - SYSTEMATIC BOTANY (4-5)

Study of the principles of plant classification, together with a systematic survey of vascular plants, with emphasis on natural history and ecology. One laboratory per week. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours.) Offered as needed. (Course fees apply.)

### BIOL 430 - MOLECULAR BIOLOGY TECHNIQUES (4-5)

Introduction to the theory and practice of modern molecular techniques. The laboratory will include techniques such as the purification and analysis of DNA, RNA, and protein, recombination DNA procedures, mutagenesis, hybridization methods, PCR, and DNA sequencing technology. Two laboratories per week. Prerequisites: BIOL 382, CHEM 322, 325. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours). Offered even years. (Course fees apply.)

### BIOL 435 - DEVELOPMENTAL BIOLOGY (4)

Principles of development of plants and animals. Emphasizes problems of growth, differentiation, and morphogenesis. Laboratory work consists of both descriptive and experimental analysis of development. One laboratory per week. Prerequisites: BIOL 381, 382 and CHEM 322; or permission of department.

### BIOL 445 - ADVANCED MICROBIOLOGY (4)

Study of the principles of morphology, physiology, and function of bacteria and other microorganisms. One laboratory per week. Prerequisites: BIOL 143 and CHEM 143. Offered odd years. (Course fees apply.)

**BIOL 449 - VERTEBRATE HISTOLOGY (4)**

Study of the microscopic anatomy of vertebrate cells, tissues, and organs, including reference to their functions. Two laboratories per week.

**BIOL 450 - PALEOBIOLOGY (4-5)**

Study of the biology, diversity, and history of ancient life and of the principles and methods employed in interpreting life of the past. Special consideration will be given to the fossil record of western North America. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours). Offered even years.

**BIOL 464 - ANIMAL PHYSIOLOGY (4)**

Study of animal physiology with emphasis on integration of vertebrate organ systems. One laboratory per week. Prerequisite: BIOL 381. Strongly Recommended: PHYS 213, 216. Offered as needed. (Course fees apply.)

**BIOL 465 - ECOLOGICAL PHYSIOLOGY (3)**

The study of how an animal's physiology helps it survive in its unique environment. Special attention will be focused on internal physiological specializations and how these enable an animal to cope with a range of environments and habitats. Prerequisite: BIOL 143. Strongly recommended: BIOL 381.

**BIOL 466 - IMMUNOLOGY (4)**

Study of the molecular and cellular bases of the immune response including clinical applications. One laboratory per week. Prerequisites: BIOL 382. (Course fees apply.)

**BIOL 470 - BIOPHYSICS (OR PHYS 470) (4)**

Study of the structure and function of biological systems from the perspective of the physical sciences. Prerequisites: BIOL 143; PHYS 213 or PHYS 253; MATH 131 or MATH 181 or permission of instructor.

**BIOL 471 - COMPUTING FOR BIOLOGY AND BIOINFORMATICS (4)**

Introduction to computational tools commonly used in the biological sciences including image and video analysis, spatial data analysis, biological molecule modeling, genetic sequence handling, phylogenetics, transcriptomics, and genomics. Examples from recent published literature including selections in the medical and environmental sciences are used. Includes a project component when taken for graduate credit. Prerequisite: BIOL 250.

**BIOL 483 - PHILOSOPHY OF ORIGINS AND SPECIATION (3)**

Comparison of the various theories on the origin and history of living organisms in light of present scientific knowledge in biochemistry, paleontology, morphology, geology, genetics, and other related areas. For majors and minors only. Recommended for senior year.

**BIOL 486 - TISSUE ENGINEERING (OR ENGR 486) (4)**

Study of tissue functionality and biomaterial design including the basic concepts underlying physiological responses to wounds and foreign materials. Topics include biomaterial scaffolds, relevant cell types, soluble regulators or their genes, and mechanical loading and culture conditions. Prerequisite: BIOL 381 with C or better, or permission of instructor.

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### BIOL 495 - COLLOQUIUM (0)

Lecture series designed to expose students to modern scientific research and researchers. Each lecture is normally given by a visiting scientist. Six quarters required of all biology majors. Graded S or NC.

### BIOL 496 - SENIOR SEMINAR (2)

Presentation and discussion of current topics in biology. Students will read scientific articles and lead and participate in weekly discussions.

Prerequisite: BIOL 250, 296, and senior standing. Graded S or NC.

## ROSARIO BEACH MARINE LABORATORY COURSES

BIOL 141, BIOL 142, BIOL 143 or equivalent is prerequisite for all courses listed below. Rosario Beach Marine Laboratory courses of 5 credits include an additional credit for the requirement of a research problem (See BIOL 403, BIOL 405, BIOL 410, BIOL 426, BIOL 430, BIOL 450). Normally a maximum of two of the following courses are taught during a summer; see Summer Bulletin.

### BIOL 417 - BEHAVIOR OF MARINE ORGANISMS\* (5)

A study of inter- and intraspecific behaviors of marine animals and their behavioral responses to the physical environment. The course involves laboratory experience, field observations, and research project. Prerequisite: a course in animal behavior, organismal biology and/or psychology.

### BIOL 440 - HUMAN ANATOMY (5)

Comprehensive study of human anatomy covering all systems of the head, neck, trunk, and extremities. A solid morphological basis for a synthesis of anatomy, physiology, and clinical sciences. Dissection and identification of anatomical structures using cadavers, charts, and models.

### BIOL 458 - MARINE BIOLOGY\* (5)

An integrated approach to understanding the marine environment primarily from an ecological perspective. Included are principles of basic oceanography, plankton biology, deep-sea biology, and shallow-water marine communities.

### BIOL 460 - MARINE ECOLOGY\* (5)

Study of interspecific, intraspecific, and community relationships demonstrated by marine organisms.

### BIOL 462 - ICHTHYOLOGY\* (5)

Systematic study of the fishes found in Puget Sound, with a survey of the fishes of other waters.

### BIOL 463 - MARINE PHYCOLOGY\* (5)

A systematic survey of marine algae, covering the principles of their classification, natural history, ecology, physiology, and practical use.

### BIOL 468 - COMPARATIVE PHYSIOLOGY\* (5)

Comparative study of the physiology and life processes of animals with emphasis on invertebrates. Prerequisite: BIOL 381.

### BIOL 475 - MARINE INVERTEBRATES\* (5)

A study of the biology of selected groups of marine invertebrates.

\*Qualifies as a marine-oriented course.

## **CDEV - CAREER DEVELOPMENT**

### **CDEV 100 - EXPERIENTIAL PROGRAM (6; 18)**

May be taken only if supervision is in conjunction with an approved Cooperative Educational experience. Credit will not apply toward graduation. Graded S or NC.

### **CDEV 101 - EXPERIENTIAL LEARNING (0-3)**

Practical experience in an off-campus setting through a contractual agreement among student, faculty advisor, co-op coordinator and off-campus supervisor before work begins. The agreement will be supervised by the Career Center through the cooperative education program and meet the criteria for cooperative education as outlined in the bulletin. Students will work in a career area of interest with the goal of defining a career focus or major. Graded S or NC.

### **CDEV 210 - CAREER EXPLORATION AND PREPARATION (0-1)**

Development of career exploration and decision making skills, allowing students to implement appropriate job search strategies. This would include resume writing, interviewing techniques and development of positive work habits and attitudes. Graded S or NC for 0 credits. Graded A-F for 1 credit. (Course fees apply.)

## **CHEM - CHEMISTRY**

### **CHEM 105 - SURVEY OF CHEMISTRY (5)**

Survey of topics in inorganic, organic, and biochemistry relevant to nursing and allied health professions. Does not apply toward a chemistry major or minor. Four lectures and one laboratory per week. (Course fees apply.)

### **CHEM 141, 142, 143 - GENERAL CHEMISTRY (3, 3, 3)**

Study of the structure and states of matter; atomic and molecular theory, including valency, periodicity, and bonding; solutions and equilibria, stoichiometry, kinetics, and thermodynamics; and the descriptive chemistry of metals and nonmetals. Must be taken in sequence. Prerequisites or corequisites: MATH 121, 122 or equivalent; CHEM 144, 145, 146.

### **CHEM 144, 145, 146 - GENERAL CHEMISTRY LABORATORY (1, 1, 1)**

Laboratory integrated with CHEM 141, 142, 143. One laboratory per week. Corequisite: CHEM 141, 142, 143. (Course fees apply.)

### **CHEM 301 - CHEMICAL EQUILIBRIUM AND ANALYSIS (3)**

Study of chemical equilibrium through a perspective of applications in analytical chemistry. Consideration is given to solubility as affected by competing equilibria, to acid-base equilibria in aqueous solutions, and to complexation equilibria; includes an introduction to oxidation reduction equilibria. Prerequisite: CHEM 143. Corequisite: CHEM 405.

### **CHEM 302 - ANALYTICAL INSTRUMENTAL METHODS (4)**

Primary emphasis is on electrochemistry, optical spectroscopies, mass spectrometry, and separations techniques. Consideration is given to both the instrumentation and techniques of interest in chemical analysis. Prerequisite: CHEM 301. Corequisite: CHEM 405.

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### CHEM 321, 322 - ORGANIC CHEMISTRY (4, 4)

Study of the principles of organic chemistry including the properties, reactions, and spectroscopic analysis of organic compounds. Prerequisite: CHEM 143.

Corequisites: CHEM 324, 325.

### CHEM 324 - ORGANIC CHEMISTRY LABORATORY (1)

Introduction to microscale techniques of preparation, purification, and identification of organic compounds. Includes spectroscopic techniques. One laboratory per week. Corequisite: CHEM 321. (Course fees apply.)

### CHEM 325 - ORGANIC CHEMISTRY LABORATORY (1)

Introduction to microscale techniques of preparation, purification, and identification of organic compounds. Includes spectroscopic techniques. One laboratory per week. Corequisite: CHEM 322. (Course fees apply.)

### CHEM 350, 352, 353 - PHYSICAL CHEMISTRY (3, 3, 3)

Survey of important topics in physical chemistry. The first quarter emphasizes quantum theory with applications to atomic structure, molecular structure, and spectroscopy. Second quarter includes thermodynamics applied to phase and chemical equilibria. Third quarter deals with kinetics, transport properties, and molecular dynamics. Prerequisites: MATH 281; PHYS 213 or 253; CHEM 143. Corequisite: CHEM 405 or permission of instructor.

### CHEM 383 - INTERMEDIATE ORGANIC CHEMISTRY (3)

Further study of reaction mechanisms, spectroscopic techniques, and synthetic transformations, including retrosynthesis. Prerequisite: CHEM 322.

Corequisite: CHEM 386 or permission of the instructor.

### CHEM 386 - MICROSCALE ORGANIC LABORATORY (2)

The use of microscale techniques for the preparation, purification and identification of organic compounds. Includes spectroscopic techniques. Intended for majors and interested students. Two laboratories per week. Corequisite: CHEM 383. (Course fees apply.)

### CHEM 405 - INTEGRATED CHEMISTRY LABORATORY (1; 6)

A research laboratory integrating the major disciplines in chemistry: analytical, biochemical, inorganic, organic, and physical. Course will be synchronized with lecture courses for a given quarter, and will include experimental, analytical, and written components. Six quarters are required of BS Chemistry majors and 4 quarters for BS Biochemistry majors. Open to chemistry and biochemistry majors or by permission of the instructor. Prerequisite: CHEM 322 or Corequisite: CHEM 301.

### CHEM 427 - ORGANIC STRUCTURE AND MECHANISMS (3)

Examines transformation or organotransition-metal species with an emphasis on basic mechanisms, structure-reactivity relationship, and application in organic synthesis. Prerequisites: CHEM 383, 386. Corequisite: CHEM 405. Offered odd years.

### CHEM 429 - ORGANIC STRUCTURAL PROBLEMS (4)

Application of nuclear magnetic resonance and mass spectrometry to organic structural determination. Three lectures and one laboratory per week. Prerequisite: CHEM 322. Offered even years.

**CHEM 431, 432, 433 - FOUNDATIONS OF BIOCHEMISTRY (4, 3, 4)**

Application of chemical principles to the study of proteins, nucleic acids, enzyme catalysis, membrane transport, bioenergetics, and metabolic pathways. An introduction to cellular signaling is included. Prerequisite: CHEM 322. Recommended: BIOL 381, 382.

**CHEM 442 - INORGANIC CHEMISTRY (4)**

Study of the physical and chemical properties of inorganic and coordination compounds. Focus is on reaction mechanisms and the relationship between structure and reactivity. Places emphasis on the use of molecular orbital, ligand field, and crystal field theories as tools to understanding the structure and reactivity of inorganic compounds. Sections on coordination compounds will highlight synthesis, reactivity trends, and recent advances in coordination chemistry. Prerequisites: CHEM 143, 350, or permission of instructor. Corequisite: CHEM 405. Offered even years.

**CHEM 479 - DIRECTED RESEARCH/PROJECT (1-3; 6)**

Original investigation of a chemical research problem carried out under the direction of an assigned faculty member. Most projects involve one laboratory period per week per credit hour. Open only to chemistry and biochemistry majors.

**CHEM 496, 497, 498 - CHEMISTRY SEMINAR (1, 1, 1)**

Application of communication skills to the chemical profession. Course will include resume writing, interview skills, literature searching, discussion of chemical literature, poster sessions, writing a paper, and making an oral presentation. Must be taken in sequence. Open only to chemistry and biochemistry majors. Prerequisites: CHEM 301, CHEM 322, or permission of instructor.

**CIS - COMPUTER INFORMATION SYSTEMS****CIS 140 - BUSINESS ANALYTICS WITH MICROSOFT EXCEL AND ACCESS (4)**

Study of two key productivity packages used in businesses today to analyze and visualize data: Microsoft Excel and Access. Use of spreadsheets and databases to solve real-world problems, with special emphases on business intelligence and analytics. Prerequisite: working knowledge of personal computers and Microsoft Office.

**CIS 220 - WEB APPLICATION DEVELOPMENT (OR CPTR 220) (4)**

Overview of the tools and techniques required to develop database-driven web applications. Students will design user-friendly, accessible, websites using HTML and CSS, add interaction to those websites using JavaScript and AJAX, and connect the website to an SQL database using a server-side scripting language. Prerequisite: CPTR 142. Offered even years.

**CIS 301 - INFORMATION SYSTEMS AND BUSINESS INTELLIGENCE (4)**

An examination of the fundamentals of business intelligence and information systems as operational mechanisms of the management process and how to solve real-world business problems, with a special emphasis on business analytics. Prerequisite: CIS 140.



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### CIS 490 - INTERNSHIP (0-4)

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## **COMM - COMMUNICATION**

### COMM 145 - COMMUNICATION AND LANGUAGES IN A GLOBAL SOCIETY (4)

Introduction to the development and influence of communication, media, and languages in our globalized culture. Emphasis on the practices, perspective, and products of culture as they create and are created by communication.

### COMM 260/460 - PROFESSIONAL CONFERENCE PARTICIPATION (1; 2)

Preparation for, attending, participating in, and reflecting on a professional communication conference. Students research and plan schedule of workshops and events to attend. A journal and paper are required. (Course fees apply.)

### COMM 245 - DIRECTED MEDIA PRODUCTION (1-2; 2)

Practice of media production in areas where the student has demonstrated potential in production-related courses. Under the instructor's supervision, the student completes a project. Prerequisite: FLTV 135 or permission of the instructor.

### COMM 325 - MULTICULTURAL COMMUNICATION (3)

Study and practice in communicating cross culturally. In the intercultural context students explore practices, perspectives, and products. Requires students to actively engage in new cultures as they examine their interactions outside of their own culture.

### COMM 357 - MEDIA LAW (4)

Study of legal and ethical issues affecting mass communication media professionals, including libel, privacy, confidentiality, obscenity, access, advertising, and broadcast ethics and regulation.

### COMM 394 - DIRECTED READING: (1-2; 3)

Independent reading for students who wish to broaden their knowledge of history, biographies, classics, professional and/or trend literature in communication. Offered alternatively with JOUR 394 and SPCH 394.

### COMM 445 - DIRECTED MEDIA PRODUCTION (1-4)

Refinement of media production skills in areas where the student has demonstrated potential in production-related courses. Under the instructor's supervision, the student designs and completes a project. Prerequisite: Permission of the instructor.

### COMM 375 - COMMUNICATION THEORY (3)

Study of contemporary thought on the nature and process of communication from the perspective of interpersonal, group, public, organizational, mass, and intercultural communication. Emphasis on the critical analysis, application, and use of theory in research.

**COMM 487 - SENIOR PROJECT (1)**

A student-selected, department-approved project to demonstrate the student's ability to perform in his/her major field of instruction. Satisfactory completion of this course constitutes the department comprehensive requirement for the bachelor's degree. At the beginning of the third quarter prior to graduation students must submit a project proposal to the department. Graded A-F.

**COMM 490 - INTERNSHIP (0.4; 4)**

Practical experience in news reporting and editing, public relations, social media strategies, broadcasting, or media production. The student works under the co-direction of professionals in participating agencies and the department. Requirements include a minimum of 120 hours of documented work experience. Open only to majors in this field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Instructor's permission must be obtained one quarter before registration. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

**COMM 495 - COMMUNICATION AND LANGUAGES COLLOQUIUM (0)**

A series of lectures, programs, discussions, and other activities presented by communication and/or language professionals. Majors are required to attend six quarters, at least one must be during the senior year. Graded S or NC.

**COMM 496, 497 - COMMUNICATION RESEARCH I AND II (3, 1)**

An integrating course required of all strategic communication and global communication majors. Study spans two quarters and includes a review of literature and research methods in communication; experience in conducting primary, empirical research projects; and oral presentation of formal papers. Prerequisite: COMM 375.

## **CORR - CORRECTIONS, LAW ENFORCEMENT AND CRIMINAL JUSTICE**

**CORR 285 - INTRODUCTION TO CRIMINAL JUSTICE (4)**

Study of the philosophy and history of law enforcement; includes an overview of crime and police problems, agencies involved in administration of criminal justice, processes of justice from detection of crime to parole of offenders, evaluation of modern police services, and a survey of professional career opportunities and qualifications required. Observations and field trips arranged. Offered even years.

**CORR 385 - CRIMINOLOGY (4)**

Study of the historical background of crime and factors of deviant social behavior; includes a survey of criminological theories to analyze contributing factors and evaluate remedial measures now in common use. Visits to agencies and institutions arranged. Prerequisite: SOCI 204 or CORR 285. Offered even years.

**CORR 387 - JUVENILE DELINQUENCY (3)**

Study of delinquency, juvenile courts, detention, and probation; investigation and comparison of programs of treatment and prevention. Field trips arranged. Prerequisite: SOCI 204 or CORR 285. Offered even years.

## **CPTR - COMPUTER SCIENCE**

Courses in the department of computer science are organized into strands focusing on various sub-fields. The strand to which a course belongs can be identified by the middle digit of the three-digit course number. Strands include: Miscellaneous (0), Applied Computer Science (1), Web and Information Management (2), Computational Science and Intelligent Systems (3), Programming Methods and Tools (4), Theoretical Computer Science (5), Architecture and Organization (8), and Capstone and Independent Study (9).

### **CPTR 108 - THE ART AND PRACTICE OF COMPUTER SCIENCE (3)**

An overview of computer science as a discipline and profession. Students will understand the historical development of computing and the role of computing in modern society, discuss social and ethical issues in computer science from a Christian world view, and appreciate the role of computer science professional organizations. Students will contribute to an open source project and will understand the importance of portfolio building and internships in preparing to enter the workforce. Prerequisite: CPTR 141.

### **CPTR 141 - FUNDAMENTALS OF PROGRAMMING I (4)**

Introduction to computer programming in-the-small using the C++ language for students with little or no experience. Students will write, compile, debug, and execute programs utilizing variables, flow control (sequencing, selection, and repetition), file I/O, arrays, and functions.

### **CPTR 142 - FUNDAMENTALS OF PROGRAMMING II (4)**

Continuation of CPTR 141. Students will write programs using the object-oriented programming paradigm, pointers, dynamic memory, vectors, and recursion. Students will also participate in a team programming project requiring design specifications, version control, unit testing, and presentation. Prerequisite: CPTR 141.

### **CPTR 210 - DATA COMMUNICATION AND NETWORKS (3)**

Introduction to the concepts and tools needed to set-up and maintain a secure computer network. Students will be able to describe the OSI model, configure wired and wireless local area networks utilizing switches and routers, set-up IP address spaces including sub-nets, configure network services such as DHCP and DNS, troubleshoot network problems, and understand best practices for security and reliability. Prerequisite: CPTR 141. Offered odd years.

### **CPTR 211 - LINUX AND WINDOWS SYSTEM ADMINISTRATION (3)**

Introduction to the concepts and skills need to work as a professional system administrator in both Linux and Windows environments. Students will install and configure operating system software, set-up and manage user accounts and shared resources, configure resource permissions in complex scenarios, plan and perform backups and other disaster-preparedness tasks, monitor servers for security breaches and other issues, troubleshoot common problems, and automate repetitive processes. Prerequisite: CPTR 142. Offered even years.

### **CPTR 220 - WEB APPLICATION DEVELOPMENT (OR CIS 220) (4)**

Overview of the tools and techniques required to develop database-driven web applications. Students will design user-friendly, accessible, websites using HTML and CSS, add interaction to those websites using JavaScript and AJAX, and connect the website to an SQL database using a server-side scripting language. Prerequisite: CPTR 142. Offered even years.

**CPTR 241 - ADVANCED OBJECT-ORIENTED PROGRAMMING (4)**

In-depth study of object-oriented design methodology. Students will design object-oriented programs using a formal notation such as the Uniform Modeling Language (UML). Students will also write object-oriented programs that appropriately utilize data abstraction, encapsulation, inheritance, and polymorphism in multiple object-oriented languages. Prerequisite: CPTR 142. Offered odd years.

**CPTR 242 - SEQUENTIAL AND PARALLEL DATA STRUCTURES AND ALGORITHMS (4)**

Introduction to advanced data structures and the algorithms that manipulate them. Students will create and manipulate linked lists, stacks, queues, graphs, trees, and hash tables. Students will also search and sort using various common algorithms, both sequentially and in parallel. Prerequisite: CPTR 142.

**CPTR 245 - SOFTWARE DEVELOPMENT (4)**

Overview of the fundamental tools and methodologies used in modern, test-driven, team software development. Students will gain a deep understanding of distributed version control systems and use such a system to manage team development projects. Students will also engage in test-driven development and configure and utilize continuous integration to automate the building, testing, and deployment processes. Corequisite: CPTR 142.

**CPTR 280-COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE (3)**

Introduction to the internal organization of digital computer hardware. Students will be able to describe how data is represented and manipulated at the hardware level. Students will write assembly language programs to store and manipulate data. Prerequisite: CPTR 141.

**CPTR 320 - WEB SERVICES AND CLOUD COMPUTING (4)**

Practical introduction to web services and the distributed computing concepts behind cloud computing. Students will develop a web application which utilizes public web service APIs, will understand the motivation for cloud computing and the role that virtualization plays, and will develop and deployed a web service on a public cloud computing platform. Prerequisite: CPTR 220. Offered even years.

**CPTR 330 - MACHINE LEARNING FOR DATA SCIENCE (4)**

Introduction to machine learning as a tool for the data scientist. Students will use R and other programming languages to apply and implement regression, classification, tree-based, and other statistical learning methodologies for the analysis of large data sets. Prerequisites: CPTR 142, MATH 215 or MATH 315. Offered even years.

**CPTR 352 - OPERATING SYSTEMS (4)**

Rigorous introduction to the principles and practice of modern operating systems. Students will be able to explain the process and thread models used in modern operating systems, implement and utilize synchronization primitives, compare and contrast strategies for handling deadlock and resource scheduling, explain modern memory organization and management techniques, and describe the structure of modern file systems. Prerequisites: CPTR 242, CPTR 280.

**CPTR 354 - COMPILERS AND LANGUAGES (4)**

Introduction to modern compilers and programming language paradigms. Students will describe the formal language hierarchy, implement parsing algorithms for basic

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languages using a modern parser generator, and discuss symbol table organization. Students will also discuss the history of programming language development and write basic programs in representative languages from the functional and logic paradigms. Prerequisite: CPTR 242.

### CPTR 355 - COMPUTER GRAPHICS (4)

Introduction to computer graphics modeling, animation, and rendering. Students will use modern graphics libraries to perform basic geometric transformations, texture mapping, ray tracing, modeling of curves and surfaces, shading, and 2-D and 3-D object manipulation and animation. Students will write an interactive video game showcasing these features. Prerequisites: CPTR 141, MATH 289. Offered odd years.

### CPTR 380 - COMPUTER ARCHITECTURE (4)

Study of the organization and architecture of computer systems. Students will understand how to measure computer performance, the basics of instruction set design, computer arithmetic including floating point algorithms, classical and modern data path and control architectures, and basic memory design including cache and virtual memory systems. Students will complete their choice of a research project, a VHDL implementation of a custom instruction set, or a software project involving an assembler or compiler for a custom instruction set. Prerequisites: CPTR 280, ENGR 354. Offered odd years.

### CPTR 396 - INTERNSHIP AND CAREER READINESS SEMINAR (1)

Overview of the process for transitioning from college to a career in computing. Students will craft a targeted resume and cover letter, learn strategies to identify and obtain internships that align with career goals and personal interests, develop and learn to maintain a professional portfolio, and prepare for coding interviews. Students will also engage in and reflect upon a service-learning experience in the field of computing as they prepare for a lifetime of generosity in service. Prerequisite: CPTR 242.

### CPTR 405 - CURRENT TOPICS IN COMPUTER SCIENCE (4; 8)

Selected topic of current interest in computer science. Topics are chosen from such areas as bioinformatics, compiler design, data mining, distributed computing, human computer interaction, neural networks, robotics, and video game design. Prerequisite: Permission of Instructor. May be repeated as topics vary. Offered even years.

### CPTR 420 - DATABASE SYSTEMS (4)

Overview of modern database design techniques and management systems with a focus on relational database theory. Students will conduct a requirement analysis, model the required data with an ER diagram, translate the ER diagram into a relational schema, implement the schema as an SQL database, and utilize functional dependencies and normal forms to refine the schema. Students will also write complex queries in relational algebra, calculus, and SQL. Students will further be able to explain tree- and hash-based indices, the algorithms used for query processing (sorts, joins, and aggregation), query optimization, and database tuning. Finally, students will understand how transaction managers handle concurrency and recovery. Prerequisites: CPTR 142, MATH 250. Offered odd years.

**CPTR 430 - ARTIFICIAL INTELLIGENCE (4)**

Survey of foundational concepts of artificial intelligence and their applications. Students will describe methods for representing knowledge, logical inference, and effective searches; and will discuss social and ethical implications of artificial intelligence in the context of a Christian world view. Students will explain production systems, robotics, fuzzy logic, and belief networks; and will program intelligent agents, heuristic searches, and genetic algorithms. As a final research project, students will explore artificial intelligence in a specific application area. Prerequisite: CPTR 242. Offered odd years.

**CPTR 440 - COMPUTER SECURITY (4)**

Survey of the tools and practices used to secure information both on a computer system and traveling over a computer network. Students will discuss security standards, write and implement security policies, design secure systems, describe and utilize both secret and public key cryptography, find vulnerabilities in code, configure intrusion detection and prevention solutions, and conduct basic digital forensic investigations. Prerequisites: CPTR 142, MATH 250. Offered even years.

**CPTR 450 - SOFTWARE ENGINEERING (3)**

Overview of the processes used to design, develop, and maintain complex software systems in preparation for the senior project sequence. Students will describe software quality characteristics, the software engineering process, and the development life cycle. Students will also participate in a large team programming project from requirement analysis through deployment and maintenance. Prerequisite: CPTR 242. Corequisite: CPTR 496 or ENGR 496 or permission of instructor.

**CPTR 454 - DESIGN AND ANALYSIS OF ALGORITHMS (4)**

Design and analysis of efficient algorithms for sorting, searching, and other applications. Students will design algorithms using techniques such as divide-and-conquer, greedy algorithms, and dynamic programming; and give proofs of correctness for their algorithms. Students will also analyze an algorithm's time and space complexity and give examples of NP-complete and NP-hard problems. Prerequisites: CPTR 242, MATH 250.

**CPTR 456 - COMPUTER NETWORKS (4)**

Overview of computer networks in theory and practice. Students will describe the various network protocol layers, write programs using application layer protocols such as HTTP, DNS, and sockets; describe transport layer protocols such as TCP and UDP; explain strategies for congestion control; discuss network layer concepts such as IP addressing, switching, and routing; and implement link layer technologies such as Ethernet, wireless, and virtual LANS. Prerequisite: CPTR 242. Offered even years.

**CPTR 480 - PROGRAMMING EMBEDDED AND REAL TIME SYSTEMS (4)**

Introduction to programming for embedded platforms running real-time operating systems. Students will use cross-compilers and debuggers to write and optimize code for embedded systems. Students will also write device drivers and other programs which utilize real-time scheduling and inter-task communication. Prerequisite: CPTR 380. Offered odd years.

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### CPTR 490 - INTERNSHIP (0-4; 4)

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: CPTR 242 and departmental approval. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

### CPTR 496 - SENIOR PROJECT I (1)

Capstone computer science experience, which includes the selection of a senior project and an overview of using empirical, experience-based patterns to solve typical recurring problems in software projects. Students will propose a software development or research project addressing an existing industry or community need. Students are encouraged to propose projects as groups with preference given to projects involving community service. Corequisite: CPTR 450. Graded S or NC.

### CPTR 497, 498 - SENIOR PROJECT II, III (2, 2)

Continuation of CPTR 496. Students will design, implement, test, document, and present their approved software development or research project proposed in CPTR 496. Students working in groups must be involved in all aspects of the project. Each student is expected to spend a minimum of 120 hours on the project over the two courses. Must be taken in sequence. Prerequisite: CPTR 496.

## DRMA - DRAMA

### DRMA 211 - ORAL INTERPRETATION (OR SPCH 211) (4)

Study of the various types of interpretative literature with a view toward its understanding for the purpose of public presentation. Includes reading from the printed page with fluency and effectiveness and readers' theatre script preparation and presentation.

### DRMA 242 - ACTING (4)

Exploring and developing the clarity, range, and control of verbal and nonverbal language in creating and effectively communicating dramatic characters, modern and classical. Recommended: SPCH 107.

### DRMA 252 - PERFORMANCE (0-2; 4)

Analysis, rehearsal, and performance of a role under the supervision of instructor. May be taken only by permission of the instructor. Non-drama minors may enroll in a maximum of 9 hours selected from DRMA 252 or DRMA 452.

### DRMA 253 - TECHNICAL PRODUCTION (0-2; 4)

Design, construction, and/or coordination of a technical aspect of the production of a play chosen by the instructor. May be taken only by permission of the instructor.

### DRMA 260/460 - PROFESSIONAL THEATRE CONFERENCE PARTICIPATION (1; 2)

Preparation for, attending, participating in, and reflecting on a professional theatre conference. Students research and plan schedule of workshops and events to attend. A journal and paper are required. Prerequisite: permission of instructor. (Course fees apply.)

**DRMA 336 - DRAMA WRITING (3)**

Study of dramatic theory and practice in planning, writing, and revising a play. The focus is primarily on the fundamentals of writing drama. Analysis and discussion of student work. Offered odd years.

**DRMA 363 - HISTORY OF THEATRE (OR ENGL 363) (4)**

Study of the history and development of the theatre from the classical stage to the present. Offered even years.

**DRMA 364 - DIRECTING I (3)**

The theory and practice of direction for stage and film, designed to familiarize the student with the skills necessary to lead a cast and technical crew. Includes the study of elements such as script selection and analysis; collaboration with the cast, designers, production crew or stage managers, and dramaturge; casting and rehearsal technique and management; and aesthetic, ethical, and economic concerns. Prerequisite for drama minors: DRMA 242. Prerequisite for film/TV/media majors: FLTV 135.

**DRMA 365 - DIRECTING II (3)**

Exploration of the fundamentals of directing through the production and direction of a one-act play or short film for public presentation. Prerequisite: DRMA 364, or permission of instructor.

**DRMA 394 - DIRECTED DRAMA READING (1-2; 3)**

Independent reading for students who wish to broaden their knowledge of history, biographies, classics, professional and/or trend literature in drama.

**DRMA 442 - ADVANCED ACTING: (4)**

Refinement of performance skills for upper-division students who wish to build on acting fundamentals learned in DRMA 242 and continue broadening their acting techniques. Course may be repeated as topics vary. Example topics include acting for film and television, stage and musical theatre. Prerequisite: DRMA 242.

**DRMA 445 - DIRECTED DRAMA WRITING (1-3)**

The refining of writing skills through a program adapted to the student's professional interest. Submission of writing samples and permission of instructor required.

**DRMA 452 - ADVANCED PERFORMANCE (0-2; 4)**

Analysis and rehearsal of a complex or leading role that requires the student to critically read and analyze a substantial text in preparation for performance. Prerequisite: 2 hours of DRMA 252 or permission of instructor.

**DSGN - DESIGN****DSGN 110 - DESIGN PRINCIPLES I (4)**

Introduction to 3-dimensional design with emphasis on sketching, modeling, ideation, visualization, principles and elements of design. Students will be given hands-on abstract design exercises with an emphasis on exploring the properties of space and form. Students will be working both individually and collaboratively, in a studio environment. (Course fees apply.)

**DSGN 111 - DESIGN PRINCIPLES II (4)**

This course is an overview of the conceptual and manual skills designers use when creating design concepts. Critical thinking is the primary focus of this course. 3-



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dimensional form will be explored through the use of sketching and modeling. Emphasis is placed on effective communication of student ideas and their projects. Students learn to frame questions, solve problems and iterate design solutions. Prerequisite: DSGN 110. (Course fees apply.)

### DSGN 121 - FUNDAMENTALS OF CAD (2)

Fundamentals of computer aided drafting/design and its application, with emphasis on the varied features of a CAD system. One lecture and three laboratory hours per week. (Course fees apply.)

### DSGN 215 - DESIGN THEORY, HISTORY, AND CRITICISM (4)

An overview of the varied approaches to the study of design theory and philosophy from classical to contemporary is applied to the evolving design field. A study of common theories, applied with proper reasoning, is integrated into student projects. Includes the history of product/industrial design, graphic design and new media. Consideration will be given to the period developments. Brings together cultural, business, and technical perspectives. Students will critically analyze work done by other designers and theorists. Students will develop skills that foster perception, comprehension, and design of meaningful products and spaces. Prerequisite: DSGN 110. (Course fees apply.)

### DSGN 226 - ARCHITECTURAL DESIGN (3)

Study of the fundamentals of designing and drawing house plans including architectural drafting standards, area planning, floor plans, elevations, sections, schedules, and specifications.

### DSGN 312 - DESIGN STRATEGIES AND METHODOLOGIES (4)

This course provides a context where students can participate in a design studio setting where teams develop designs from a design strategy/design thinking perspective. Students will explore several strategies and methodologies underlying product design, assess products for viability and marketability, and examine design processes and insight development, including ideation, prototyping, need finding, process documentation, project brief, proof of concept, and team member roles. Prerequisite: DSGN 215. (Course fees apply.)

## ECON - ECONOMICS

### ECON 204 - FUNDAMENTALS OF ECONOMICS (4)

Covers basic concepts in economics for the liberal arts and social sciences. Topics include the basic financial system, fiscal and monetary policy of the U.S. government, income distribution, poverty, education, and environmental concerns. Course does not fulfill the economics requirement for business degrees, economics minors, or global development minors.

### ECON 210 - PRINCIPLES OF MICROECONOMICS (4)

Covers basic concepts in microeconomics. Topics include the theory of rational consumer behavior, application of the factors of production, labor markets, and the implication of market failures.

### ECON 211 - PRINCIPLES OF MACROECONOMICS (4)

Covers basic concepts of macroeconomics. Topics include the concept of supply and demand, the U.S. financial system, aggregate economic activities such as the level of employment, price levels, and the gross national product. The course also covers fiscal and monetary policies of the U.S. government and the impact on the economy. Recommended: ECON 210.

**ECON 220 - PRINCIPLES OF GLOBAL DEVELOPMENT (4)**

An introduction to the major theories of economic and humanitarian development, including historical background, and the policies and strategies for meeting contemporary challenges. Addresses the major concerns of emerging economies in the context of faith-based approaches. Prerequisite: ECON 211.

**ECON 359 - THE AMERICAN ECONOMY (OR HIST 359) (4)**

Development of the American economy and business systems from the colonial era to the present. It traces the transformation of key United States institutions (the firm, market, government) and themes (strategy, finance, organization) across the centuries, addressing their relevance to current debates. Prerequisite: a general studies history course. Offered odd years.

**ECON 410 - COMPARATIVE ECONOMIC DEVELOPMENT (4)**

Exploration of the differences in economic growth and development of countries and regions and will study the sources of their diversity. Key topics include the major economic systems (market, planned, and socialistic), the role of institutions, and how history and culture interrelate with economic theory and practice. Critical analysis of economic development theories and discussion of how sustainable economic growth and development can be achieved for all citizens. Prerequisite: ECON 211.

**ECON 441 - FINANCIAL MARKETS AND INSTITUTIONS (OR FINA 441)(4)**

Study of the functional activities of the financial markets and institutions that comprise the American financial system, with emphases on the nature and functions of money, credit, and banking. Prerequisites: ECON 211 and FINA 351.

**ECON 460 - BUSINESS FORECASTING AND PREDICTIVE ANALYTICS (OR FINA 460) (4)**

Introduction to the application of modern forecasting methodologies using traditional statistical methods/operations research and advanced data mining techniques, with a special emphasis on predictive analytics. Prerequisite: GBUS 263.

**ECON 488 - INTERNATIONAL TRADE AND FINANCE (OR FINA 488) (4)**

Study of alternative theories on trade, theoretical impact of trade on employment, economic growth and welfare, and the implications of protectionism on the economy; also covers the foreign exchange systems, and the conduct of monetary policy in an open economy. Prerequisites: ECON 211. Offered even years.

**EDUC - EDUCATION****EDUC 211 - INTRODUCTION TO AND FOUNDATIONS OF EDUCATION (4)**

An introduction to education including special education, in all aspects of schooling as practiced in the United States. Explores social and historical foundations, models, theories, philosophy, legal and ethical issues that form the basis for education in a culturally and academically diverse society. University students will be required to complete a criminal background check by the Washington State Patrol and finger printing by the FBI. Field experience required.

**EDUC 315 - TECHNOLOGY IN EDUCATION (3)**

Candidates will gain hands-on skills in developing technology-based instructional materials, as well as using state-of-the-art software and hardware to accommodate and modify for all students. Emphasis is placed on Universal Design for Learning

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- with a goal of providing candidates with the ability to adapt technology, instruction, and assessment to meet the needs of all students. (Course fees apply.)

### EDUC 350 - LANGUAGE DEVELOPMENT IN YOUNG CHILDREN (OR PSYC 350) (3)

Study of current research-based theories, methods, and strategies needed to effectively teach and support early literacy from birth through beginning reading. Prerequisite: PSYC 217. Field experience required.

### EDUC 360 - TEACHING AND LEARNING: INCLUSIVE LITERACY I (4)

Development of literacies, and approaches to teaching reading programs K-8, including media and research-based strategies for building reading comprehension in content areas, using literature, writing, differentiated instruction, and legal/ethical implications. In this context, special attention is given to the diagnosis and remediation of problems in reading. Field experience required. Prerequisite: EDUC 350 or permission of instructor and admission to Teacher Certification Program Phase 2. (Course fees apply.)

### EDUC 361 - TEACHING AND LEARNING: INCLUSIVE LITERACY II (4)

Development of literacies and approaches to teaching reading programs K-8, including media and research-based strategies for building reading comprehension in content areas, using literature, writing, differentiated instruction, and legal/ethical implications. Field experience required. Prerequisites: EDUC 360 (or permission of instructor) and admission to Teacher Certification Program Phase 2. (Course fees apply.)

### EDUC 365 - SECONDARY CLASSROOM MANAGEMENT (4)

Study of research-based models and exemplary practices for teaching in the secondary classroom; emphasis on human dynamics, rules and routines, conflict resolution, motivational techniques, eliciting parental support, student diversity instructional and management strategies, general aspects of legal and ethical practices and professional growth. Professional Development School field experience required. Prerequisites: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

### EDUC 373 - TEACHING AND LEARNING: STEM - MATHEMATICS AND TECHNOLOGY (4)

Survey of the curriculum, media, and research-based strategies used in teaching elementary mathematics. Introduces to integrated STEM education practices at the elementary level with an emphasis in mathematics and technology. Field experience required. Prerequisite: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

### EDUC 381 - TEACHING AND LEARNING: RELIGION METHODS (3)

Survey of the curricula, media, and interdisciplinary strategies used in teaching in elementary and secondary classrooms; emphasis on building and maintaining relationships in an environment which nurtures the student's spiritual growth. Includes North American Division Encounter Bible Curriculum training for elementary and secondary. Field experience required. Prerequisite: Declared Adventist Education Certification.

### EDUC 382 - TEACHING AND LEARNING: SOCIAL STUDIES (3)

Survey of curriculum, media, and research-based strategies used in teaching elementary social studies, with special attention paid to developing pedagogical

content knowledge and use of Curriculum Based Assessments. Field experience required. Prerequisite: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

#### EDUC 383 - TEACHING AND LEARNING: STEM – SCIENCE AND ENGINEERING (4)

Survey of the curriculum, media, and research-based strategies used in teaching elementary science. Introduces to integrated STEM education practices at the elementary level with an emphasis in science and engineering. Field experience required. Pre/Corequisite: EDUC 373 or permission of instructor. Prerequisite: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

#### EDUC 390 - MEASUREMENT AND EVALUATION IN EDUCATION (4)

Designing and interpreting criterion-referenced objective and performance assessments; interpretation of norm-referenced examinations; concepts of reliability and validity; item analysis; grading and reporting classroom performance. Prerequisites: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

#### EDUC 395 - SECONDARY METHODS OF INSTRUCTION I (2)

Introduces to state certification requirements and lesson strategies. Professional Development School field experience required. Prerequisites: Admission to Teacher Certification Program Phase 2. Corequisite: EDUC 396 or discipline specific equivalent. (Course fees apply.)

#### EDUC 396 - SECONDARY METHODS OF INSTRUCTION II (3)

Survey of the curriculum, media, and research-based strategies used in teaching secondary classrooms. Professional Development School field experience required. Prerequisites: Admission to Teacher Certification Program Phase 2. Corequisite: EDUC 395. (Course fees apply.)

#### EDUC 405 - ELEMENTARY CLASSROOM ORGANIZATION AND MANAGEMENT (4)

In-depth examination of various models, techniques, law, and ethics for the management of all learners within the classroom, home, and community. Field experience required. Prerequisite: Admission to Teacher Certification Program Phase 2.

#### EDUC 410 - PHILOSOPHY OF EDUCATION (OR PHIL 410) (3)

Study of educational thought and practice from a philosophical perspective: the aims, principles, and theories of education, with special reference to Christian schools.

#### EDUC 425 - LEGAL AND ETHICAL ASPECTS OF EDUCATION (2)

Issues of law and ethics with direct application to the teaching profession, including educational structure and governance, church/state relations, students' rights, teachers' rights and responsibilities, and tort liability.

#### EDUC 444 - TEACHING AND LEARNING: CULTURAL DIVERSITY (3)

Study of human diversity and its impact on the educational process; emphasis on instructional and management strategies that demonstrate respect for cultural, ethnic, and language differences through differentiated instruction. Field experience required. Prerequisites: Junior standing. (Course fees apply.)

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### EDUC 450 - INTRODUCTION TO STUDENT TEACHING: CLINICAL PRACTICE (1)

Designed to provide an introduction to and overview of Washington state certification and assessment requirements, as well as classroom teaching practices for student teaching. Prerequisites: Admission to Teacher Certification Program Phase 2 and completion of student teaching application packet submitted by the first Friday of December prior to the year in which the candidate plans to enroll for the experience. Graded S or NC. (Course fees apply.)

### EDUC 451 - edTPA PART 1 (1)

Support in differentiated lesson planning and implementation, reflection, and evaluation required for certification. Corequisites: EDUC 460, 461.

### EDUC 452 - edTPA PART 2 (1)

Support for candidates in writing edTPA and in completion of assessments required for certification. Corequisites: EDUC 470, 471.

### EDUC 460 - ELEMENTARY STUDENT TEACHING PART I (1)

An introduction to the requirements for elementary student teaching. Offered autumn quarter only. Prerequisites: EDUC 450, admission to the Teacher Certification Program Phase 2, approval by the School of Education and Psychology, and completion of one iteration of the NES.

### EDUC 461 - SECONDARY STUDENT TEACHING PART I (1)

An introduction to the requirements for secondary student teaching. Offered autumn quarter only. Prerequisites: EDUC 450, admission to the Teacher Certification Program Phase 2, approval by the School of Education and Psychology, and completion of one iteration of the WEST-E/NES.

### EDUC 470 - ELEMENTARY STUDENT TEACHING II: ASSESSMENT (1)

Designed to support candidates in the winter elementary student teaching experience. Prerequisites: EDUC 460, admission to the Teacher Certification Program Phase 2, and approval by the School of Education and Psychology.

### EDUC 471 - SECONDARY STUDENT TEACHING II: ASSESSMENT (1)

Designed to support candidates in the winter secondary student teaching experience. Prerequisites: EDUC 461, admission to Teacher Certification Program Phase 2, and approval by the School of Education and Psychology.

### EDUC 475 - TEACHING READING SKILLS IN THE CONTENT AREAS (3)

Introduction to diagnosis, vocabulary, comprehension skills, rate variation, management, and study skills in junior high and secondary reading. Field experience required. Prerequisite: Admission to Teacher Certification Program Phase 2. (Course fees apply.)

### EDUC 480 - ELEMENTARY STUDENT TEACHING PART III (2-12; 12)

Full-time clinical practice in an elementary, middle-school, inclusive, or SPED classroom is required under the supervision of an experienced certificated teacher. The candidate must spend 450+ hours in supervised field experience over the course of their student teaching experience. Student teacher placement is done in cooperation with school districts/principals and, because it is a shared decision, placement is not guaranteed. Placement decisions are based on the applicant's academic preparation, interpersonal relationship abilities, classroom management skills, and other factors outlined in

Minimum Competencies for Teacher Candidates, available from the School of Education and Psychology. Prerequisites: EDUC 470 and departmental permission. Corequisites: EDUC 460 and EDUC 470. Students enrolled in student teaching part III may not register for other courses without written permission. Graded S or NC.

#### EDUC 481 - SECONDARY STUDENT TEACHING PART III (2-12; 12)

Full-time clinical practice in a designated discipline-specific secondary, inclusive, or SPED classroom is required under the supervision of an experience certificated teacher. The candidates must spend 450+ hours in supervised field experience over the course of their student teaching experience. Student teacher placement is done in cooperation with school districts/principals and, because it is a shared decision, placement is not guaranteed. Placement decisions are based on the applicant's academic preparation, interpersonal relationship abilities, classroom management skills, and other factors outlined in Minimum Competencies for Teacher Candidates, available from the School of Education and Psychology. Prerequisites: EDUC 395, EDUC 396, or methods course(s) 395 of major(s), EDUC 471, and departmental permission. Corequisites: EDUC 461 and EDUC 471. Students enrolled in student teaching part III may not register for other courses without written permission. Graded S or NC. Elementary Education majors completing a secondary content major and/or 45+ credits in a secondary endorsement area who want secondary certification will need to complete secondary certification required courses along with 1-5 credit hours of secondary student teaching and the current Washington state assessment tool(s) (i.e. current edTPA).

#### EDUC 495 - COLLOQUIUM: CHILD ABUSE (0)

Identification, impact, and prevention of physical, emotional, sexual, and substance abuse. Discussion of teachers' legal responsibilities. Graded S or NC.

#### EDUC 496 - SEMINAR (1-3; 6)

In-depth examination of a specific topic in education. Topics may include cooperative learning, curriculum reform, small-school pedagogy, media applications, etc. Prerequisite: upper division major/minor in education or permission of instructor.

#### EDUC 497 - SMALL SCHOOLS (2)

Theory and application of procedures and practices in multigrade and multiage elementary and secondary classrooms. (Course fees apply.)

### **ENGL - ENGLISH**

#### ENGLISH EDUCATION COURSES (ENGL)

The following courses do not apply toward an English major.

#### ENGL 374 - LITERATURE FOR CHILDREN AND YOUNG ADULTS (4)

Study of literature for children and young adults and the methods used in teaching literature in grades K-12. Students read texts in common and choose additional texts to learn the literary and artistic elements of various genres. Applies toward the English major with an emphasis in secondary teaching or the English minor.

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### ENGL 395 - METHODS OF TEACHING SECONDARY ENGLISH (3)

A study of objectives for and methods of teaching language, composition, literature, drama, and media in grades six through twelve. Students prepare and present lessons, evaluate student work, and create units of study. Prerequisites: ENGL 374, 384, and WRIT 389. Applies toward the English major with an emphasis in secondary teaching.

## GENERAL COURSES (ENGL)

### ENGL 490 - INTERNSHIP (0-4)

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: junior standing. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

### ENGL 495 - ENGLISH COLLOQUIUM (0)

A series of lectures, programs, discussions, and other activities designed to explore specific issues in literary and language study and enrich the professional preparation of students in English. One colloquium is required each quarter while in residence. Graded S or NC.

## GENERAL STUDIES COLLEGE WRITING COURSES (ENGL)

ENGL 121 and ENGL 122 are prerequisites to all upper-division courses. For admission to upper-division courses, students must also have completed or be registered for ENGL 223 or HONR 243. Credit will not be allowed for more than one of the following: ENGL 223 and HONR 243. (HONR classes are open only to students who have been accepted into the Honors General Studies Program.)

Students must pass a departmental placement test, or pass ENGL 100 with a grade of C- or higher, before enrolling in the college writing sequence. ENGL 121, ENGL 122, and ENGL 223 must be taken in sequence, and students must receive a grade of C- or higher before they can proceed to the next class in the sequence.

The following courses do not apply toward an English major or minor.

### ENGL 100 - READING AND WRITING REVIEW (4)

Course emphasizes reading and writing skills to prepare students for university-level work in all classes. The course focuses on effective reading strategies, paragraph and essay development, organization, coherent expression, and mechanics/usage (i.e., punctuation, spelling, and grammar). Students who do not place into ENGL 121 are required to take this course and must receive a grade of C- or higher before they can proceed to ENGL 121. Credit does not apply toward graduation.

### ENGL 121, 122 - COLLEGE WRITING I, II (3, 3)

Study and practice in the forms of writing necessary for college. ENGL 121 emphasizes the writing process, a clear writing style, and the basic elements of academic writing, including critical thinking, analysis, and argument. ENGL 122 builds on the concepts introduced in ENGL 121 and teaches students to develop and refine their skills in critical thinking and written argumentation. Students

must receive a grade of C- or higher before they can proceed to the next class in the college writing sequence. (Course fees apply.)

#### ENGL 141 - ADVANCED COLLEGE WRITING I (3)

Teaches scholarly methods of reading and writing about texts. Emphasizes the writing process, critical thinking, analysis, argumentation, and a clear writing style. Open to students in the WWU honors general studies program, or to students with a cumulative high school English GPA of 3.75 or higher and a score at or above the 85th percentile in the verbal section of the ACT or SAT, or by invitation of the instructor. (Course fees apply.)

#### ENGL 142 - ADVANCED COLLEGE WRITING II (3)

Presents exercises in style. Assignments focus on methods of holding to a subject, hearing language, and practicing the traditional rhetorical forms. Prerequisites: satisfactory completion of ENGL 141, or a score of 5 on the AP Language and Composition or Literature and Composition Exam, or by recommendation of the English department. Preference will be given to students who have completed ENGL 141.

#### ENGL 223 - RESEARCH WRITING (3)

A study of library resources, information-gathering techniques, and research writing, including the ethics and style expected in the academic community. Includes a major documented research paper aimed at a scholarly audience. Prerequisites: ENGL 121 and ENGL 122 with grades of C- or above and 36 hours of college credit. (Course fees apply.)

### LITERATURE AND LANGUAGE COURSES (ENGL)

For all upper-division literature courses that are not general studies courses, ENGL 234 is a prerequisite.

#### ENGL 204 - INTRODUCTION TO LITERATURE (4)

Introduction to the art of reading and studying literature, emphasizing the methods of analyzing poetry, stories, and drama. Will not apply toward an English major.

#### ENGL 210, 211, 212 - SURVEY OF BRITISH AND AMERICAN LITERATURE (4, 4, 4)

A survey of British and American literature and literary history from Anglo-Saxon times to the present. The first quarter covers medieval, Renaissance, and colonial American literature; the second quarter examines literature from the Restoration in England to the Civil War in America; and the third quarter studies literature from the Victorian era to the present. Open to English majors, minors, and humanities majors, or by permission of the instructor.

#### ENGL 214 - THEMES IN LITERATURE (4; 12)

Thematic approach to the study of literature in a variety of genres. See Class Schedule for the description of specific themes, which vary from quarter to quarter. Will not apply toward an English major. May be repeated for credit when topics vary.

#### ENGL 234 - LITERARY ANALYSIS (4)

Instruction and practice in close analysis, interpretation, and evaluation of literature in the major genres with an introduction to various critical and



## COURSES

theoretical approaches to the study of literature. Intended to prepare the student for upper-division literature courses. Prerequisite: ENGL 223 or HONR 243.

### ENGL 274 - STUDY TOUR: BRITISH LITERATURE IN CONTEXT (4)

The study of British literature in preparation for and conjunction with the UK History and Literature Tour. Course material will emphasize the role of place and culture in the formation of representative works from major literary periods. Will apply to the English major or minor. Offered even summer quarters.

### ENGL 313 - IMAGE AND TEXT (4)

An exploration of ways in which literature and visual culture mirror the complexities of human existence and meaning. Course components include exploration of various communication methods: writing, sketching, pictograms, graphic novels, illuminated manuscripts, and icons. Students will read literature focusing on images and the imagination. Prerequisite: general studies humanities. Will apply as an elective on the English major. Offered even years.

### ENGL 317 - PACIFIC NORTHWEST WRITERS (4)

Readings in the documentary and imaginative literatures of the Pacific Northwest. Emphasizes the welfare of the landscape, the landscape's effect on the people who live in this particular region, and their response to one another and to the natural world. Will apply as an elective on the English major. Offered even years.

The following four courses in British literature before 1830 are taught on a four-year rotation with one taught each year.

### ENGL 344 - MEDIEVAL LITERATURE (4)

Study of British literature from its origins to about 1500. Examines major writers and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

### ENGL 345 - RENAISSANCE LITERATURE (4)

Study of British literature from the sixteenth and early seventeenth centuries. Examines major writers and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

### ENGL 346 - RESTORATION AND ENLIGHTENMENT (4)

Study of British literature from the late seventeenth and eighteenth centuries. Examines major writers and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

### ENGL 347 - ROMANTIC BRITISH LITERATURE (4)

Study of British Romanticism. Examines major writers and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

The following four courses in British and American literature after 1830 are taught on a four-year rotation with one taught each year.

### ENGL 355 - VICTORIAN LITERATURE (4)

Study of British literature from 1830 to 1901. Examines major writers and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

**ENGL 356 - TWENTIETH-CENTURY BRITISH LITERATURE (4)**

Examination of major British writers of the twentieth-century and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

**ENGL 364 - NINETEENTH-CENTURY AMERICAN LITERATURE (4)**

Examination of major American writers of the nineteenth-century and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

**ENGL 366 - TWENTIETH-CENTURY AMERICAN LITERATURE (4)**

Examination of major American writers of the twentieth-century and their responses to the literary and historical developments of the period. Prerequisite: ENGL 234.

**ENGL 357 - THE AFRICAN-AMERICAN EXPERIENCE (OR HIST 357) (4)**

African-American contributions to American literature, history, and culture from the colonial period to the present. Prerequisite: HIST 221 or 222, or ENGL 211 or 212. Credit will not be allowed for both ENGL 357 and HIST 357. Offered odd years.

**ENGL 358 - CLASSICAL LITERATURE (4)**

Study of Greek and Roman literature, emphasizing classical legend and thought in its cultural context. Prerequisite: general studies literature or ENGL 234 or ART 324, 325 or GREK 231. Offered even years.

**ENGL 359 - WORLD LITERATURE (4)**

Study of selected works outside of the Anglo-American tradition. Prerequisite: general studies literature or ENGL 234. Offered odd years.

**ENGL 360 - SHAKESPEARE AT ASHLAND (2)**

Study tour to the Oregon Shakespeare Festival in Ashland, Oregon. Students read in advance the four plays scheduled for performance that season, write preliminary responses, and then attend lectures/discussions and performances of the plays during five days spent at the OSF in August. Final assignments are due in early September. Offered alternate summer quarters.

**ENGL 363 - HISTORY OF THEATRE (OR DRMA 363) (4)**

Study of the history and development of the theatre from the classical stage to the present. Offered even years.

**ENGL 368 - CONTEMPORARY LITERATURE (4)**

Study of contemporary British and American writers and their analysis of current issues. Offered odd years.

**ENGL 384 - ENGLISH GRAMMAR (4)**

The study of traditional, structural, and transformational grammar with practical application to writing, editing, and teaching. Prerequisites: English major or minor status, or permission of the instructor.

**ENGL 393 - DIRECTED READING: (OR HONR 393) (1; 3)**

Independent reading for upper-division students who wish to continue broadening their knowledge of literature in a particular area by extensive reading. Prerequisites: general studies literature or ENGL 234; admission by permission of instructor.

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### ENGL 394 - DIRECTED READING (1-2; 3)

Independent reading for upper-division students who wish to continue broadening their knowledge of literature in a particular area by extensive reading. Prerequisites: general studies literature or ENGL 234; admission by permission of instructor.

### ENGL 454 - LITERATURE OF THE BIBLE (OR RELB 354) (4)

Study of biblical poetry and prose from a literary perspective. Prerequisite: general studies literature or ENGL 234. Offered even years.

### ENGL 470 - LITERARY AND CRITICAL THEORY (4)

Study of the history, theory, and practice of literary criticism, with an application to selected works of literature. Includes a survey of the principal genres of criticism and representative theoreticians from those genres.

### ENGL 474 - STUDY TOUR: TOPICS IN BRITISH LITERATURE (4)

Explores a topic or genre of British literature in conjunction with the UK History and Literature Tour. Will apply to the English major or minor. Offered even summer quarters.

### ENGL 496, 497, 498 - SEMINAR IN LITERATURE (2, 2, 2)

Required of English majors in the senior year. Includes studying research methods, giving oral reports, and writing a major scholarly paper. Research projects relate to a common topic chosen by the instructor. These courses must be completed during the same academic year.

## **ENGR - ENGINEERING**

### ENGR 120 - INTRODUCTION TO BIOENGINEERING (2)

Introduction to bioengineering and relevant career choices. Includes an overview of key study areas of biomaterials, biomechanics, biomolecular technology, tissue engineering, biofluids, and bioenergetics.

### ENGR 121 - INTRODUCTION TO THE PROFESSION OF ENGINEERING (2)

Introduction to the profession of engineering, computer based engineering calculation tools, analysis of team dynamics, teamwork and engineering communications.

### ENGR 122 - INTRODUCTION TO CAD (2)

Introduction to Computer Aided Design and Computer Aided Engineering (CAD, CAE). Includes coverage of hand sketching, drafting standards, pictorial representations and principles of descriptive geometry. Covers both 2D and 3D CAD. Discipline specific computer applications will be represented as available. Recommended: ENGR 121. (Course fees apply.)

### ENGR 123 - INTRODUCTION TO SYSTEM DESIGN AND ENGINEERING (2)

The design process, systems engineering, principles of project management, applied to a full-scale project. Emphasis on teamwork, written and oral communication. Prerequisite: ENGR 121 and 122 or permission of instructor. (Course fees apply.)

**ENGR 197 - FRESHMAN SEMINAR (1)**

Application of engineering design methodology. Participation on a senior project team required. Admission by permission of the instructor.

**ENGR 221, 222, 223 - ENGINEERING MECHANICS (3, 3, 3)**

Introduction to two- and three-dimensional equilibria employing vector algebra; friction; centroids and centers of mass, virtual work, and moments of inertia.

One- and two-dimensional kinetics and kinematics of rigid bodies by vector calculus; dynamics of rotation, translation, and plane motion; relative motion; work and energy; impulse and momentum. Must be taken in sequence.

Corequisite for 221: MATH 282; Corequisite for 222: MATH 283. A student must have a grade of C- or higher in 221 before taking 222, and in 222 before taking 223.

**ENGR 228 - CIRCUIT ANALYSIS (4)**

Study of circuit variables and parameters; Kirchhoff's laws and network solution; equivalent circuits, network theorems; natural and complete response; sinusoidal steady-state, phasors, and impedance; frequency characteristics; power and power factor. Laboratory work required. Prerequisite: strongly recommended PHYS 252.

Corequisite: Math 312. (Course fees apply.)

**ENGR 293 - GLOBAL HUMANITARIAN ENGINEERING SEMINAR I (1)**

Preparation for international experience. Will include presentations by those who have completed an international experience and by guest speakers.

Students will prepare a learning plan for their international experience.

Prerequisites: ENGR 121, 122, 123.

**ENGR 297 - SOPHOMORE SEMINAR (1)**

Application of engineering design methodology. Participation on a senior project team required. Admission by permission of the instructor. Prerequisite: Sophomore standing in engineering.

**ENGR 310 - SUSTAINABLE ENERGY SYSTEMS (2)**

Interdisciplinary study of public policy decision making regarding issues with significant technology, economic, and environmental components, focusing on energy supplies derived from renewable resources. Topics include U.S. and global energy flows, the history of U.S. energy policy, economic and environmental considerations in energy supply, principles of sustainability, energy efficiency, and selected renewable energy technologies. Prerequisite: Upper-division standing.

**ENGR 311 - SUSTAINABLE ENERGY SYSTEMS PROJECT (0)**

Engineering project integrated with ENGR 310. Corequisite: ENGR 310. Graded S or NC.

**ENGR 312 - PHYSICAL ELECTRONICS (OR PHYS 312) (3)**

Study of the physical principles of solid state electronics devices.

Prerequisites: MATH 283, PHYS 253, PHYS 310. Corequisite: ENGR 315.

**ENGR 315 - PHYSICAL ELECTRONICS LABORATORY (OR PHYS 315) (1)**

Experimental study of the physical principles of solid state electronics devices.

Corequisite: ENGR 312. (Course fees apply.)

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### ENGR 318 - ELECTROMECHANICAL ENERGY CONVERSION (4)

Study of electromechanical energy conversion principles and their application to electric machines. Topics include magnetic circuits, force and torque, AC and DC motors and generators, and performance characteristics and applications. Laboratory work required. Prerequisite: ENGR 228. (Course fees apply.) Offered even years.

### ENGR 321 - MECHANICS OF MATERIALS (4)

Study of stresses and strains, deformations and deflections of posts, shafts, beams, columns; combined stresses; elasticity. Computational and experimental laboratory required. Prerequisite: ENGR 222. (Course fees apply.)

### ENGR 322 - ENGINEERING MATERIALS (4)

Study of the science of engineering materials. Crystal structures, electron transport in solids, single-phase metals, multiphase materials, equilibria, microstructures and properties, thermal processing, and corrosion of metals. Laboratory work required. Prerequisite: ENGR 321, CHEM 143 or equivalent. (Course fees apply.)

### ENGR 323 - CIVIL ENGINEERING MATERIALS (3)

Study of the engineering properties and applications of asphalt, concrete, plastics, steel, wood, and composites. Strength and serviceability considerations. Laboratory work required. Prerequisite: ENGR 321. Recommended: ENGR 341. (Course fees apply.)

### ENGR 324 - MATERIALS AND PROCESSES IN MANUFACTURING (2)

Study of polymer, ceramic, and composite materials; material selection, joining and manufacturing processes. Laboratory work required. Prerequisites: ENGR 321, 322. (Course fees apply.)

### ENGR 325 - INSTRUMENTATION (3)

Study of theory and application of modern instrumentation; design of experiments, validation of experimental data. Laboratory work required. Prerequisites: MATH 315, ENGR 228 or permission of instructor. (Course fees apply.)

### ENGR 326 - ENGINEERING ECONOMY (4)

Introduction to the business aspects of engineering, including cost accounting, financial decision making, ethics, scheduling, entrepreneurship and project management. Prerequisite: Junior standing in engineering.

### ENGR 331 - FLUID MECHANICS (4)

Fluid statics and dynamics of fluid motion; conservation of mass, momentum, and energy in laminar and turbulent flow using control volume formulation. Introduction to Navier Stokes equations for fluid flow; inviscid flow; dimensional analysis and similitude; boundary layer flow; lift and drag forces; viscous flow in conduits; open channel flow; flow measurements; introduction to compressible flow. Prerequisites: ENGR 222, PHYS 251, 252, MATH 283, 289, 312 or permission of instructor.

### ENGR 332 - THERMODYNAMICS (3)

Introduction to the nature of energy and study of energy transport conservation in closed and flowing systems; properties and states of solids, liquids, vapors, and

gases; enthalpy; meaning and production of entropy and introduction to cyclic systems. Prerequisite: PHYS 253.

### ENGR 333 - THERMODYNAMICS AND THERMAL SYSTEMS (3)

Study of thermodynamics for complex systems, detailed analysis of power and refrigeration cycles, thermodynamics, and equilibrium principles of nonreacting and reacting mixtures; application of the principles of global thermochemical energy balances to real power systems. Prerequisite: ENGR 332. Strongly recommended: ENGR 331.

### ENGR 341 - GEOLOGY AND SOIL MECHANICS (4)

Introduction to geological structure, process, and weathering; soils properties, classification, and interpretation; subsurface investigation; flow of water through soils. Study of stress distribution and deformation of soils. Laboratory work required. Prerequisite: CHEM 143. Corequisite: ENGR 321, 331. (Course fees apply.)

### ENGR 342 - HYDROLOGY (3)

Introduction to precipitation; occurrence, measurement, transport, and storage of ground and surface waters; statistical models. Prerequisites: CPTR 141; ENGR 331, 341. Strongly recommended: MATH 315.

### ENGR 343 - ENVIRONMENTAL ENGINEERING SYSTEMS (4)

Assessment of gaseous, liquid and solid wastes from commercial, domestic, and industrial sources; quantity and quality; conservation, collection, treatment, disposal, and storage; impact on resources and ecosystems; air, water, and land. Prerequisites: CHEM 143. Strongly recommended MATH 312, 315, ENGR 344.

### ENGR 344 - CIVIL ENGINEERING ANALYSIS (4)

Analysis of structural, environmental, hydrologic, geotechnical, surveying and transportation engineering problems using computer software; applications of matrix solution, linear and non-linear least squares, numerical integration, and finite differences. Prerequisites: CPTR 141, ENGR 321, MATH 312, MATH 315; Corequisites: MATH 289. Recommended for students with Junior standing.

### ENGR 345 - CONTRACTS AND SPECIFICATIONS (2)

Introduction to the preparation and interpretation of contracts and specifications; ethical, legal, and contractual relations of the professional engineer to the public, the owner, and the contractor. Prerequisite: junior standing in engineering.

### ENGR 346 - SURVEYING (4)

Use of basic surveying instruments; computational methods for traverses, routes, and earthwork; mapping. Prerequisites: ENGR 122. Strongly recommended: ENGR 344. Corequisite: MATH 281. (Course fees apply.)

### ENGR 347 - STRUCTURAL ANALYSIS I (3)

Study of classical methods for analysis of determinate and indeterminate structures; load-stress-deflection parameters for beams, girders, trusses and frames. Prerequisite: ENGR 321. Corequisite: MATH 289.

### ENGR 348 - STRUCTURAL ANALYSIS II (3)

Study of matrix methods for analysis of determinate and indeterminate structures; computer applications of matrix methods. Prerequisites: CPTR 141, ENGR 321, ENGR 347, MATH 289. Corequisite: MATH 312.

**ENGR 350 - LINEAR SYSTEMS ANALYSIS (4)**

Introduction to linear systems theory for electrical and mechanical systems. Discusses Laplace transforms and transfer functions along with frequency response via Bode plots. Also considers time domain response characteristics of stability, response time, and error tracking. Introduces basic feedback and control methodology based on Proportional-Integral-Derivative (PID) control. Prerequisites: ENGR 223, ENGR 228, MATH 283. Corequisite: MATH 312.

**ENGR 354 - DIGITAL LOGIC (3)**

Introduction to the theory and application of digital logic circuits, logic functions, logic gates, flip-flops, counters, state machines, and modern integrated logic families.

**ENGR 355 - EMBEDDED SYSTEM DESIGN (3)**

Design of embedded microprocessor systems; system organization, CPU structures, address decoding and memory design, interrupts, real-time operating systems, input/output; hardware/software codesign. Laboratory work required. Prerequisites: CPTR 280, ENGR 228, 354. (Course fees apply.)

**ENGR 356, 357 - ENGINEERING ELECTRONICS (4, 4)**

Study of characteristics and applications of discrete and integrated solid-state electronic devices and circuits; large-signal analysis, biasing; small-signal analysis, low and high frequency models, classical amplifier circuits, feedback amplifiers, operational-amplifier circuits; integrated-circuit electronics and superheterodyne receiver circuits. ENGR 356 is a prerequisite for ENGR 357. Laboratory work required. Corequisite for ENGR 356: ENGR 350. (Course fees apply.)

**ENGR 364 - FLUID MECHANICS LABORATORY (1)**

Laboratory instruction in fluid mechanics. Incompressible and elementary compressible fluid flow with special application of steady state and conservation principles of mass, momentum, and energy; fluid flow measurements and real fluid phenomena in pipelines; theoretical and experimental analysis of open channel flow. Prerequisite: ENGR 331. (Course fees apply.)

**ENGR 365 - MACHINE ELEMENT DESIGN LABORATORY (1)**

Study of the design process. Laboratory instruction in machine element design, form, and function. Machine elements studied include gears, shafts, bearings, links, fasteners, and hydraulic components. Prerequisites: ENGR 321, 322. Strongly recommended: ENGR 374. (Course fees apply.)

**ENGR 366 - VIBRATIONS (3)**

Study of periodic motion; free and forced vibrations of single and multi-degree-of-freedom systems, nonsinusoidal forcing functions, and normal modes. Prerequisites: ENGR 223, ENGR 350, MATH 289, 312.

**ENGR 374 - ADVANCED CAD/MCAE (2)**

Fundamental and advanced concepts of Computer Aided Design (CAD) and Mechanical Computer Aided Engineering (MCAE) with emphasis on design applications. Includes parts and assembly creation, drawing layout, geometric dimensioning, tolerancing, design definition, software prototypes, design visualization, animation and interfacing to analysis codes. Prerequisite: Junior standing in engineering or permission of instructor. (Course fees apply.)

**ENGR 384 - BIOENGINEERING INSTRUMENTATION (4)**

Introductory course in biomedical application of instrumentation. Topics include transducers, signal conditioning, electrodes and electrochemistry, ultrasound systems, electrical safety. Laboratory work required. Prerequisites: BIOL 142, ENGR 228. (Course fees apply.)

**ENGR 386 - BIOENGINEERING MATERIALS (4)**

Covers major classes of materials used in medical applications, properties, degradation, mechanisms, characterization methods, foreign body response, biocompatibility, and methods to control physiological response to biomaterial surfaces. Examines the role of microstructure properties in the choice of biomaterials and design of artificial organs, implants, and prostheses.

Prerequisites: BIOL 142, ENGR 321 or permission of instructor. (Course fees apply.)

**ENGR 390 - ENGINEERING IN A GLOBAL CONTEXT (OR GBUS 390) (4)**

Practice of engineering in a global context. Student will complete a design project constrained by local conditions in a chosen geographic region. Considerations may include language and social context; material selection and manufacturing processes; supply chains, labor force, and infrastructure. Engineering students will be responsible for engineering design, business students for business analysis. Prerequisites: Completion of one course in the Culture and Business Global Humanitarian Engineering Emphasis requirement and general studies natural science coursework.

**ENGR 393 - INTERNATIONAL EXPERIENCE (0)**

Work or study in an international context. Students will be immersed in a new culture, exploring its differences from their own culture and observing new ways of seeing and doing. All work or study applying to the emphasis must be pre-approved by the GHE committee. Prerequisite: ENGR 293 or approval of instructor. Graded S or NC.

**ENGR 396 - JUNIOR SEMINAR (1)**

Application of engineering design methodology. Also presents engineering career and professional issues. Requires observation of senior project team. Prerequisite: Junior standing in engineering.

**ENGR 397 - JUNIOR SEMINAR (0)**

Presentation and discussion of project reports made by students completing the senior seminar sequence. Requires observation of senior project team.

Prerequisite: ENGR 396. Graded S or NC.

**ENGR 419 - OPTIMIZATION (OR MATH 319) (4)**

Modeling and design within a formal optimization environment. Mathematical formulation of optimization problems including decision space parameterization, objective function selection, and constraint definition. Survey of algorithms for unconstrained and constrained optimization; techniques for solving multi-disciplinary and multi-objective problems. Applications to problems in mathematics, physics, and engineering. Prerequisites: MATH 283, MATH 289, CPTR 141, PHYS 253. Credit will not be allowed for both MATH 319 and ENGR 419. Offered odd years.



**ENGR 430 - ELECTRIC POWER ENGINEERING (4)**

Introduction to the generation, transmission, distribution, and utilization of electric power. Topics include balanced three-phase circuit analysis and power calculations, network calculations and associated numerical algorithms, two-port circuits, voltage regulation, power factor correction, and power system operation. Laboratory work required. Prerequisite: ENGR 228. Offered odd years.

**ENGR 433 - DIGITAL DESIGN (4)**

MSI, LSI, and programmable logic circuits and applications; analysis and design of synchronous and asynchronous circuits and systems; VHDL design and synthesis. Laboratory work required. Prerequisite: ENGR 355. (Course fees apply.)

**ENGR 434 - VLSI DESIGN (4)**

System, circuit, and physical design of Very Large Scale Integrated circuits using CAD software; project specification, documentation, and reporting. Prerequisites: ENGR 433, ENGR 356. (Course fees apply.)

**ENGR 435 - DIGITAL DESIGN II (4)**

System oriented digital design using programmable logic with an emphasis on hardware description language (VHDL) methods; simulation; test benches; inter circuit communications; signal integrity; integrated circuit technology considerations. Laboratory work required. Prerequisites: ENGR 356, 433.

**ENGR 440 - GROUNDWATER POLLUTION CONTROL (3)**

Field, laboratory and computer simulation methods used for estimating the risk of contamination and cleanup options for groundwater supply systems. Prerequisites: ENGR 342, 343; MATH 312. Offered even years.

**ENGR 441 - STEEL STRUCTURAL DESIGN (3)**

Study of structural steel design, emphasizing the Load and Resistance Factored Design (LRFD) methodology. Topics include design of tension members, bolted and welded connections, compression members, beams and plate girders. Computation Laboratory required. Prerequisites: ENGR 323, 348. (Course fees apply.)

**ENGR 442 - REINFORCED CONCRETE STRUCTURAL DESIGN (4)**

Study of ultimate strength design concepts of reinforced concrete members and statically indeterminate frames, including flexure, shear, columns, bar anchorage and serviceability considerations. Computation Laboratory required. Prerequisites: ENGR 323, 348. (Course fees apply.)

**ENGR 443 - TIMBER STRUCTURAL DESIGN (3)**

Study of working stress design of timber members and connections for industrial and commercial applications. Computation Laboratory required. Prerequisites: ENGR 323, 348. (Course fees apply.)

**ENGR 444 - STRUCTURAL DESIGN (3)**

Study of design concepts as applied to structural systems. Topics include vertical and lateral building system layout, design problems, combinations of structural materials, analysis techniques, structural stability, diaphragms, shear walls, foundations and code applications. Computation Laboratory required. Prerequisites: ENGR 441, 442. (Course fees apply.)

**ENGR 445 - COLLECTION AND DISTRIBUTION SYSTEM DESIGN (4)**

Analysis and design of water distribution systems, and sanitary and storm sewer collection systems. Computational laboratory required. Prerequisites: ENGR 331, 343, 344. (Course fees apply.)

**ENGR 446 - TREATMENT PLANT DESIGN (4)**

Design of physical, chemical, and biological treatment processes of water and wastewater treatment. Laboratory work required. Prerequisites: CHEM 143, ENGR 343. Strongly recommended: ENGR 445. (Course fees apply.)

**ENGR 447 - RECEIVING WATER ANALYSIS (3)**

Analysis and modeling of surface waters receiving point and nonpoint waste discharges; design of in-stream modifications. Corequisite: ENGR 343. Offered odd years.

**ENGR 448 - HYDROENVIRONMENTAL DESIGN (3)**

Study of advanced water and wastewater treatment processes and practices. Emphasis upon current literature and recent developments in state-of-the-art practices. Prerequisite: ENGR 446. Offered as needed.

**ENGR 449 - TRANSPORTATION ENGINEERING (4)**

Study of the various modes of transportation that comprise the transportation system. Consideration is given to the planning, design and operation of the system. Introduction to traffic engineering. Prerequisites: ENGR 341, 346.

**ENGR 450 - GEOTECHNICAL ENGINEERING (3)**

Study of stress distribution and deformation of soils; applications to foundation and slope stability. Prerequisites: ENGR 321, 341.

**ENGR 451 - ELECTROMAGNETIC FIELDS (4)**

Study, by vector calculus, of static and dynamic electric and magnetic fields. Unbounded and bounded fields, fields in material media, force and torque, energy and potential functions, Faraday induction, and application to transmission lines. Prerequisites: ENGR 228, MATH 312, PHYS 253.

**ENGR 454 - CONTROL SYSTEMS (4)**

Study of the design and application of control methods to electrical and mechanical systems. Analytical techniques include both transform (classical control) and state-space (modern control) methods. Discusses both analog and digital methods. Prerequisites: ENGR 350, MATH 289. Offered even years.

**ENGR 455 - SIGNALS AND SYSTEMS (4)**

Introduction to continuous and discrete signal and system analysis and design; Fourier series, convolution, Fourier transforms, discrete Fourier transforms, digital filters and other applications. Prerequisites: ENGR 350, MATH 289, MATH 312.

**ENGR 456 - COMMUNICATIONS SYSTEMS (4)**

Introduction to analog and digital communication systems, including topics in modulation; baseband and bandpass signals; power spectral density and bandwidth; random processes; noise, signal-to-noise ratio, and error probability; and system performance and information theory. Prerequisite: ENGR 455. Strongly recommended: MATH 315.

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### ENGR 460 - POWER ELECTRONICS (4)

Applying electronics to energy conversion and control. Emphasis on switching techniques. Topics include switching power supplies, motor drives, DC-DC converters, control, rectifiers, magnetic components, characteristics of power semiconductors and HVDC applications. Laboratory work required.

Prerequisite: ENGR 350, ENGR 356. Offered odd years. (Course fees apply.)

### ENGR 461 - KINEMATICS (4)

Introduction to geometrical kinematics, including analysis of cams, linkages, and curvature relations by analytical and graphical methods; analytical kinematics for position, velocity, and acceleration analysis of plane mechanisms.

Prerequisites: ENGR 223; MATH 289, 312.

### ENGR 462 - MACHINE DESIGN (4)

Design of machines and machine elements; study of stress failure theories applied to machine elements; industrial design problems; CAD methods.

Prerequisites: ENGR 321, 324, 365, 461, 468. Strongly recommended: ENGR 374.

### ENGR 465 - HEAT TRANSFER (4)

Study of single and multidimensional steady-state and transient heat conduction; thermal radiation involving black and gray bodies and gas-filled enclosures; solar radiation; free and forced convection through ducts and over exterior surfaces; heat exchangers; combined heat transfer problems. Prerequisites: MATH 312, PHYS 252.

### ENGR 466 - HEATING, VENTILATING, AND AIR CONDITIONING DESIGN (4)

Study of design of mechanical systems and controls in air conditioning and heating of buildings. Modern aspects of solar heating and cooling will be included.

Prerequisite: ENGR 332.

### ENGR 467 - ROBOTICS (4)

Introduction to three-dimensional kinematics, dynamics, and computer control of robot manipulators, with applications of robotic systems to modern automated manufacturing methods. Prerequisite: ENGR 350, MATH 289.

### ENGR 468 - ENGINEERING FINITE ELEMENT METHODS (4)

Introduction to finite element methods for the solution of problems in structures, solid mechanics, heat transfer and fluids. Techniques for obtaining approximate numerical solutions to governing differential equations in the problem areas are covered. Industrial software is applied to a broad range of engineering problems involving analysis and design. Prerequisites: MATH 312, ENGR 321 or permission of instructor.

### ENGR 470 - COMBUSTION (4)

Thermodynamics and chemistry of reacting systems; chemical equilibrium; mass transfer and droplet evaporation; introduction to chemical kinetics and pollutant formation; characteristics of laminar and turbulent flames; combustor design fundamentals. Prerequisites: ENGR 331, 332, MATH 312. Corequisite: ENGR 333. Recommended: CHEM 143, ENGR 465.

### ENGR 475 - MECHANICS OF FLIGHT (4)

Study of the fundamentals of flight mechanics including: the standard atmosphere, aerodynamics, lift, drag, aerodynamic shapes, air foil characteristics, aircraft

performance, stability of flight vehicles, and propulsion. Historical vignettes and design considerations will be presented. Prerequisites: ENGR 331, 332. Offered even years. (Course fees apply.)

#### ENGR 480 - MANUFACTURING SYSTEMS ENGINEERING (4)

Study of the fundamentals of manufacturing with an overview of manufacturing processes, machine tools and equipment; manufacturing systems and material flow. Emphasis on implementation of automated manufacturing systems with pneumatics, hydraulics, electric actuators, PLCs, sensors, factory communications, and human/machine interfaces. Scheduling, resource optimization, material handling, and quality management are discussed. Laboratory work required. Prerequisites: ENGR 324, ENGR 350. Corequisite: ENGR 326. (Course fees apply.)

#### ENGR 485 - BIOLOGICAL AND CHEMICAL REACTOR DESIGN (4)

Applications of material and energy balances, transport phenomena, chemical reaction engineering, and thermodynamics to problems in biomedical engineering and applied physiology. Rapid overview of relevant microbiology and biochemistry. Design and analysis of biological reactors. Prerequisites: CHEM 321, ENGR 331, MATH 312, and ENGR 332 or ENGR 465, or permission of instructor. (Course fees apply.)

#### ENGR 486 - TISSUE ENGINEERING (OR BIOL 486) (4)

Study of tissue functionality and biomaterial design including the basic concepts underlying physiological responses to wounds and foreign materials. Topics include biomaterial scaffolds, relevant cell types, soluble regulators or their genes, and mechanical loading and culture conditions. Prerequisite: BIOL 381 with C or better, or permission of instructor.

#### ENGR 487 - BIOMEDICAL IMAGING (4)

Principles and uses of biomedical imaging with magnetic resonance imaging (MRI) and ultrasound are presented from an engineering viewpoint. Includes image transforms, image enhancement, image denoising/restoration, tomographic reconstruction, segmentation and registration, recognition and shape analysis. Prerequisite: ENGR 455.

#### ENGR 490 - INTERNSHIP (0-2; 2)

Individual contract arrangement involving students, faculty, and cooperating industries to gain practical engineering experience. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Permission of the Dean of the School of Engineering. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

#### ENGR 493 - GLOBAL HUMANITARIAN ENGINEERING SEMINAR II (1)

Reflection on the international experience and mentoring of students enrolled ENGR 293. Students will report on what they learned from their international experience and compare their experience to their learning plan and to others' experiences. Prerequisites: ENGR 293, 393.

#### ENGR 495 - COLLOQUIUM (0)

Lectures on current engineering practice and other selected topics related to the engineering profession. Engineering degree candidates must satisfactorily complete three quarters, at least one of which must be during the senior year. Graded S or NC.

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### ENGR 496, 497, 498 - CAPSTONE ENGINEERING PROJECT (1, 2, 2)

Capstone engineering experience. Each student is required to conduct an approved project with appropriate engineering research, analysis and design content. The scope of the project covers the project life cycle from proposal to final oral and written reports, over the course of three quarters. Each student is required to attend Autumn, Winter, and Spring quarters irrespective of the quarters in which enrollment in Seminar occurs. Prerequisites: senior standing in engineering, ENGR 396, and ENGR 397.

### ENGR 499 - CAPSTONE PROJECT COMPLETION (1)

Culmination of the senior project for students choosing the design experience within a depth elective course. Technical and communication work must be polished in consultation with the project advisor and include a written summary and oral presentation. Prerequisite: ENGR 496.

## **FILM - FILM**

### FILM 215 - INTRODUCTION TO FILM LITERATURE (4)

Study of the narrative techniques of film. Intended to develop criteria for analyzing film literature. Will not apply toward an English major. Credit will not be allowed for both FILM 215 and FILM 416. (Course fees apply.)

### FILM 318 - FILM STUDIES (4)

An advanced course that explores major genres in film and literature. Students will examine the grammar, theory, history, and literature of film in order to understand filmmakers' cultural views and ideas as expressed in their visions and craft. May be repeated for credit when topics vary. Will apply as an elective on the English major. Prerequisite: general studies literature, ENGL 234, or FILM 215. (Course fees apply.)

### FILM 416 - TEACHING WITH FILM LITERATURE (4)

An upper-division application of Introduction to Film Literature, FILM 215, aimed at providing teachers and teacher candidates with an understanding of film art that will enhance the use of film in the classroom. Students attend FILM 215 lectures and engage in classroom activities; in addition, they develop a teaching unit involving a film. Prerequisite: ENGL 395, EDUC 360, or EDUC 361. Applies toward the English major with an emphasis in secondary teaching. Credit will not be allowed for both FILM 215 and FILM 416. (Course fees apply.)

## **FINA - FINANCE**

### FINA 101 - PERSONAL FINANCE (2)

Introduction to personal financial planning and management. Topics include cash and risk management, investment and tax planning, retirement and estate planning, personal financial ethics, and stewardship.

### FINA 351 - MANAGERIAL FINANCE (4)

Study of the theory and methods of financial management in corporate enterprises. Main topics include financial statement analysis, time value of money, debt and equity valuation, capital budgeting, risk and return, security market efficiency, capital structure, dividend policy, working capital management, derivative securities, and international finance.

**FINA 365 - RISK AND INSURANCE (4)**

Study of the principles of insurance, types of insurance, insurance contracts, and risk management for individuals and business firms. Offered odd years.

**FINA 367 - REAL ESTATE PRINCIPLES (4)**

Study of the principles of real estate ownership, acquisition, sales, financing, valuation, investment, and property management. Offered even years.

**FINA 441-FINANCIAL MARKETS AND INSTITUTIONS (OR ECON 441) (4)**

Study of the functional activities of the financial markets and institutions that comprise the American financial system, with emphases on the nature and functions of money, credit, and banking. Prerequisites: ECON 211 and FINA 351.

**FINA 451 - INVESTMENTS (4)**

Study of the principles necessary to evaluate investment securities, manage portfolios, and assess market risks.

**FINA 460 - BUSINESS FORECASTING AND PREDICTIVE ANALYTICS (OR ECON 460) (4)**

Introduction to the application of modern forecasting methodologies using traditional statistical methods/operations research and advanced data mining techniques, with a special emphasis on predictive analytics. Prerequisite: GBUS 263.

**FINA 488 - INTERNATIONAL TRADE AND FINANCE (OR ECON 488) (4)**

Study of alternative theories on trade, theoretical impact of trade on employment, economic growth and welfare, and the implications of protectionism on the economy; also covers the foreign exchange systems, and the conduct of monetary policy in an open economy. Prerequisites: ECON 211. Offered even years.

**FINA 490 - INTERNSHIP (0-4; 4)**

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program information in the Nondepartmental section of the Bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

**FLTV - FILM AND TELEVISION****FLTV 135 - INTRODUCTION TO FILMMAKING (4)**

An introduction to video production. Covers basic language and process of preproduction (concept, story, planning), production (camera operation, cinematography, directing), and post-production (sound and picture editing). Students create multiple films. (Course fees apply.)

**FLTV 201 - PREPRODUCTION (1)**

Exploration and practice of the preproduction process for a short film. Students plan, budget, schedule, location scout, and cast for a short film produced the following quarter. To be taken concurrently with FLTV 202. Prerequisite: FLTV 135.

**FLTV 202 - SCREEN WRITING (3)**

Students will journey behind the screen to create a film from idea to script. Participants will study and write short films to be produced by students the next quarter in FLTV 203, Production and Cinematography. Topics include story,

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analysis, formula, and screenplay formatting. To be taken concurrently with FLTV 201, Preproduction. Prerequisite: ENGL 122.

### FLTV 203 - PRODUCTION AND CINEMATOGRAPHY (3)

Exploration and practice of the production process for a short film. Includes study and practice of cinematography (lighting and compositing), producing, and directing. Students create short films from FLTV 202. Prerequisites: FLTV 135, 202. (Course fees apply.)

### FLTV 222 - AUDIO PRODUCTION I (2)

Introduction to the sound medium and procedures for creative sound production in film, media, podcasts, radio, and television. Emphasis on storytelling, audio recording techniques, and editing. Students produce audio content for various program types.

### FLTV 260/460 - PROFESSIONAL FILM FESTIVAL/CONFERENCE PARTICIPATION (1; 2)

Preparation for, attending, participating in, and reflecting on a professional film festival/ conference. Students research and plan schedule of workshops and events to attend. A journal and paper are required. (Course fees apply.)

### FLTV 304 - VIDEO EDITING AND COMPOSITING (4)

Exploration and practice in the post-production process for a short film. Students study and apply advanced post-production workflow including specialized editing techniques, color timing, animated special effects, and finishing. Students finish and screen films they wrote in FLTV 202. Prerequisite: FLTV 203.

### FLTV 320 - LIVE VIDEO PRODUCTION AND STREAMING (3)

Study and experience in multi-camera live production for broadcast and web streaming. Course covers basic studio and control room techniques including directing, camera operation, lighting, switching, and live graphics. Emphasis is on multi-camera directing, production planning, and visual aesthetics. Prerequisite: FLTV 135, 222 or permission of instructor. Offered even years.

### FLTV 333 - AUDIO PRODUCTION II (4)

Advanced study of the sound medium and procedures for creative sound production in various media. Emphasis on recording, mixing, and effects in sound design for film, media, music, radio, and television. Students create a variety of audio projects. Prerequisite: FLTV 135, 222.

### FLTV 410 - VIDEO ANIMATION AND EFFECTS (2)

Experience and in-depth study of advanced post-production techniques of animation and visual effects for film, television, and media. Prerequisites: FLTV 135, GRPH 136, or permission of instructor.

### FLTV 412 - DOCUMENTARY FILM (4)

An application and exploration of advanced techniques for producing documentaries. Topics include documentary voice, ethics, sound recording, interview techniques, and post production dialog editing. Students will analyze production techniques and documentary voice of important creative documentaries and will form small production teams to create documentary films. Prerequisite: FLTV 135.

**FLTV 435 - ADVANCED FILMMAKING (2)**

Individuals and teams utilize advanced production techniques to create professional quality projects for designated uses. Emphasis in collaboration, project planning, budgeting, and management of professional level video productions. Prerequisite: FLTV 304 or permission of instructor

**FLTV 487 - SENIOR PROJECT (1)**

A student-selected, department-approved project to demonstrate the student's ability to perform in film/TV/media. Satisfactory completion of this course constitutes the department comprehensive requirement for the bachelor's degree. At the beginning of the third quarter prior to graduation students must submit a project proposal to the department. Graded A-F.

**FLTV 490 - INTERNSHIP (0-4; 6)**

Practical experience in film, TV, broadcasting or media production. The student works under the co-direction of professionals in participating agencies and the department. Requirements include a minimum of 120 hours of documented work experience. Open only to majors in this field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Instructor's permission must be obtained one quarter before registration. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

**FREN - FRENCH****FREN 101, 102, 103 - ELEMENTARY FRENCH (4, 4, 4)**

Introduction to the study of French with elementary practice in the skills of understanding, speaking, reading, and writing; includes grammatical terminology and the sound system of French, basic grammar, and vocabulary at the elementary level. This course is designed for non-native speakers of French or students with no French heritage. Language laboratory and tutoring required. Must be taken in sequence.

**FREN 201, 202 - INTERMEDIATE FRENCH (4, 4)**

Intermediate study of French, based on readings in French literature and civilization, combined with a review of grammar and the development of speaking and writing skills. Language laboratory required. Must be taken in sequence. Prerequisite: FREN 103 or equivalent or permission of instructor. Offered as needed.

**FREN 394 - FRENCH DIRECTED READING (1-2; 4)**

Assigned readings and reports in French. Prerequisite: permission of instructor.

**FREN 405 - FRENCH LITERATURE ANALYSIS (4)**

Examines theories of discourse analysis, and rhetoric. Study of authors, literary schools, genres, themes, stylistics and advanced language grammar. Concentrates on form and style through analysis of major texts. Prerequisite: FREN 202 or permission of instructor.

**FREN 407 - SURVEY OF FRENCH AND FRANCOPHONE LITERATURE (4)**

Study of major literary works from the beginning of the 20th century to present. Attention to the use of pertinent critical and literary theories. Prerequisite: permission of instructor. Offered odd years.

**FREN 408 - CONTEMPORARY FRENCH AND FRANCOPHONE LITERATURE (4)**

Study of current significant literary works and key themes relating to the Francophone world. Close readings will emphasize the distinctive cultures and



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challenges of the Francophone world and discuss the important issues raised by these texts. Regions studied vary: Quebec, Africa, French Caribbean, Switzerland, Belgium, and North Africa. Prerequisite: Permission of instructor. Offered even years.

### FREN 409 - FRENCH CULTURE AND CIVILIZATION (4)

Study of the origin and the development of the cultural, social, and political life of the French people as reflected in art, architecture, history, literature, language, music, and philosophy. Examines current challenges of nationalism, immigration, identity, and issues related to European membership. Conducted in French. Prerequisite: permission of instructor.

### FREN 410 - FRANCOPHONE CULTURE AND CIVILIZATION (4)

Study of the origin and the development of the cultural, linguistic, social, and political life of the Francophone world in Europe, Africa, Canada, and the Caribbean Islands. Examines current challenges of globalization, identity, and issues of relations with France. Conducted in French. Prerequisite: permission of instructor.

### FREN 496 - SEMINAR IN FRENCH (1-4; 4)

Includes selected readings, studying research methods, giving oral reports, and writing scholarly papers.

## **GBUS - GENERAL BUSINESS**

### GBUS 161 - BUSINESS BASICS (2)

Overview of the functional business areas and career opportunities in business. Not open to junior and senior business, automotive management, aviation management, or information systems majors.

### GBUS 263 - BUSINESS STATISTICS (4)

Survey of descriptive and inferential statistics with emphasis on business and economic applications. Topics include data collection and presentation (sampling methods, data distributions and graphics, numerical measures, displaying and exploring data), probabilities (basic concepts, probability and sampling distributions) and tools of statistical inference (estimation and confidence intervals, one-sample and two-sample tests of hypothesis, ANOVA, linear regression and correlation, multiple regression and model building). Prerequisite: CIS 140.

### GBUS 361 - BUSINESS LAW I (4)

An introduction to the judicial system, sources of law, and the legal environment in which individuals and businesses operate. Subjects include contracts, property, constitutional law, torts, legal ethics, wills and estates.

### GBUS 362 - BUSINESS LAW II (4)

Study of the legal environment with emphases on the Uniform Commercial Code, sales, commercial paper, international business law, business organizations, agency, credit, bankruptcy, and governmental regulation of business. Prerequisite: GBUS 361.

### GBUS 366 - OPERATIONS MANAGEMENT (4)

The application of management principles and mathematical techniques to operational problems in manufacturing and service organizations, with special emphases on business intelligence and analytics. Topics include planning and

decision-making, business forecasting, production scheduling, inventory management, network models, quality control, and project management. Recommended: MGMT 371. Prerequisite: GBUS 263.

#### **GBUS 370 - BUSINESS COMMUNICATION (4)**

Study of the strategies for effective and ethical oral and written business communication. Emphasis is placed on writing letters, memos, reports, and proposals. Additional topics include individual and team communication, intercultural communication, and job-seeking skills. Prerequisites: SPCH 101, ENGL 223.

#### **GBUS 390 - ENGINEERING IN A GLOBAL CONTEXT (OR ENGR 390) (4)**

Practice of engineering in a global context. Student will complete a design project constrained by local conditions in a chosen geographic region. Considerations may include language and social context; material selection and manufacturing processes; supply chains, labor force, and infrastructure. Engineering students will be responsible for engineering design, business students for business analysis. Prerequisites: Completion of one course in the Culture and Business Global Humanitarian Engineering Emphasis requirement and general studies natural science coursework.

#### **GBUS 463 - BUSINESS ETHICS (4)**

Study of philosophical theories and Christian perspectives on ethical decision making for organizations. Students will apply these theories and perspectives to business related issues, with a strong focus on leadership, organizational justice, corporate social responsibility, and environmental issues and responsibility.

#### **GBUS 490 - INTERNSHIP (0-4; 4)**

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

#### **GBUS 495 - COLLOQUIUM (0)**

Lecture series on current business practice. Graded S or NC.

### **GCDP - GLOBAL COMMUNITY DEVELOPMENT PROGRAM**

Southern Adventist University courses cross listed for WWU students.

#### **GCDP 405 - FOUNDATIONS OF CHRISTIAN VALUES IN DEVELOPMENT/RELIEF (3)**

Students will assimilate Biblical perspective for abundant life, transformation, servanthood, and the role of Christian witness in sustainable development missiology.

#### **GCDP 410 - THEORIES OF GLOBAL COMMUNITY DEVELOPMENT (3)**

Students will examine diverse theoretical approaches for planning, conducting, and evaluating community-owned development/relief projects.

#### **GCDP 415 - PRINCIPLES OF DEVELOPMENT ENTREPRENEURSHIP (3)**

Students will identify resource generation opportunities and craft entrepreneurship strategies that enable sustainable community change.

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### **GCDP 420 - TECHNIQUES FOR PROJECT PLANNING AND CAPACITY BUILDING (3)**

Students will explore and define how they will assist community leaders to plan, propose, budget, and staff results-oriented development/relief projects.

### **GCDP 425 - METHODS OF SCHOLARSHIP IN DEVELOPMENT/RELIEF (3)**

Students will demonstrate the research scholarship skills necessary for facilitating evidence-based and results-oriented community practice outcomes.

### **GCDP 428 - PREPARATION FOR GLOBAL SERVICE (1.5)**

In this Knowledge Building rotation course students will prepare for their deployment to the project site of their Experiential Learning rotation. Logistical, safety, and practical preparedness will be addressed.

## **GEOG - GEOGRAPHY**

### **GEOG 252 - WORLD GEOGRAPHY (4)**

Study of the world geography as a system of interactions between geographic features and human cultures. This course introduces geographical representations and geospatial technology as used to study human populations and the interactions between humans and environments. It also surveys the global context of current issues and events.

## **GNRL - GENERAL**

### **GNRL 101 - UNIVERSITY EXPERIENCE (1)**

Interactive classes and activities designed to prepare entering new students for their transition to Walla Walla University life. These classes promote development of academic and social skills as well as critical thinking and decision-making, which are essential to a balanced lifestyle of our collegiate environment. Students will also be assisted in a personalized approach to religion coursework in order to enhance their spiritual development. Graded S or NC. (Course fees apply.)

### **GNRL 102 - ON COURSE (3)**

Study of strategies to optimize performance academically, professionally, and personally. Students will practice learned skills including effective goal setting, self-management, interdependence, emotional intelligence, cultural awareness, and community service. Open to all students as an elective.

## **GREK - GREEK**

### **GREK 231, 232, 233 - GREEK I (3, 3, 3)**

Introduction to the elements of New Testament Greek with experience in translation. Language laboratory required. Prerequisites: A score at the 70 percentile on the ACT composite score and at the 70 percentile on the ACT English scores or successful completion of ENGL 121, 122. (232 & 233: Course fees apply.)

### **GREK 331 - GREEK II (3)**

Continued reading in Koine Greek with emphasis on intermediate level syntax and practice in translating selected passages from the Gospels, Acts, the New Testament Epistles, Revelation, and the Apostolic Fathers. Prerequisite: GREK 231, 232, 233, or their equivalent.

**GREK 334 - GREEK EXEGESIS: ROMANS (4)**

Exegesis of the book of Romans with a focus on exegetical method. Prerequisites: GREK 331 and/or a successful completion of the Greek proficiency examination.

**GREK 341 - THE TEXT OF THE NEW TESTAMENT (3)**

An introduction to the history and present development of the text of the New Testament, including how ancient manuscripts illuminate the social history of early Christianity. Topics include the spread of Christianity, doctrinal disputes, the oppression of women, Jewish-Christian relations, as well as differences between modern Bible translation; integration of textual analysis and translation of selected passages from Novum Testamentum Graece. Credit will not be allowed for both GREK 341 and RELB 341. Prerequisites: GREK 231 and GREK 232 or their equivalent. Offered even years.

**GREK 342 - READINGS IN THE GREEK NEW TESTAMENT (2; 8)**

Reading in selected sections of the Greek New Testament. Offered on request. Prerequisite: GREK 331 or its equivalent.

**GREK 344 - THE GREEK OLD TESTAMENT (2)**

Translation of selected narrative portions from the Septuagint and comparison with the Masoretic Text. Also includes translation of selected portions of Hebrews with attention to Old Testament citations. Offered on request.

**GRMN - GERMAN****GRMN 101, 102, 103 - ELEMENTARY GERMAN (4, 4, 4)**

Introduction to the study of German with elementary practice in the skills of understanding, speaking, reading, and writing; includes grammatical terminology and the sound system of German, plus basic grammar and vocabulary at the elementary level. This course is designed for non-native speakers of German or students with no German heritage. Language laboratory and tutoring required. Must be taken in sequence. Offered odd years.

**GRMN 314 - GERMAN CIVILIZATION (4)**

Study of the development of the cultural, social and political life in German-speaking lands as reflected in architecture, art, history, literature, music, and philosophy. Lectures, films, and reports. Offered as needed.

**GRPH - GRAPHICS****GRPH 124 - INTRODUCTION TO DESIGN (4)**

Overview of design and graphic communication systems including historical perspectives, theory and practice. Includes a survey of print design and layout practices. Examines the evolution of diverse occupations within Design. (Course fees apply.)

**GRPH 136 - DIGITAL IMAGING I (4)**

Study and application of raster image editing. Students will develop skills in technical manipulation, alteration, enhancement, restoration and organization of photographs and illustrations. Stresses creative exploration of acquisition and selection tools and techniques. (Course fees apply.)

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### GRPH 255 - GRAPHIC DESIGN AND LAYOUT (4)

Study and application of visual communications fundamentals. Includes survey of typographic essentials, color theory, image acquisition, repurposing, file management, page layout, and document structure and management. Stresses development of print production workflow from concept through execution and output. Includes a survey of digital production, distribution, and placemaking design. Prerequisite: GRPH 124 or permission of instructor. (Course fees apply.)

### GRPH 262 - COMPUTER ILLUSTRATION (4)

Creation and manipulation of vector-based digital illustration, with emphasis on logo development and branding. (Course fees apply.)

### GRPH 263 - WEB DESIGN STUDIO (4)

Introduction to web design, usability theory, and styles-based development and customization. Includes application of visual editor to combine type and graphics. Use of industry standard CMS (content management system) for development of a personal web site. Students are expected to provide their own web hosting service and private domain name for creating their personal website. Prerequisites: GRPH 124 and GRPH 136 or permission of instructor. (Course fees apply.)

### GRPH 265 - GRAPHIC DESIGN HISTORY AND THEORY STUDIO (4)

Study of graphic design history and theory with application to contemporary solutions in the graphic design field. Focuses on major 20<sup>th</sup> and 21<sup>st</sup> century design periods with an overview of previous periods. Brings together cultural, business, and technical perspectives. Students will critically analyze work from various periods and create their own works in the studio environment. Offered odd years only. Pre-requisites: GRPH 136, GRPH 255, GRPH 262. (Course fees apply.)

### GRPH 272 - TYPOGRAPHY (3)

Study of type in visual communication from its earliest use to present trends. Emphasizes awareness of cultural, emotional and commercial perspectives, as well as standard usage guidelines, to create clear, evocative documents and web pages. Prerequisite: GRPH 262 or permission of instructor. (Course fees apply.)

### GRPH 280 - PRACTICUM (1-6; 6)

Laboratory work in Graphics chosen in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit.

### GRPH 336 - DIGITAL IMAGING II (4)

Creation and manipulation of raster images and digital painting in a production setting. Also includes color management correction, advanced image acquisition, and integration of styled type and traditionally rendered artwork. Includes cross-media image use and efficient production and creative problem-solving techniques. Prerequisite: GRPH 136. Offered even years. (Course fees apply.)

### GRPH 345 - ENVIRONMENT DESIGN (OR PRDN 345) (4)

Application of design thinking and problem solving skills with special attention given to the location or place. Focus on placemaking and identity, where designers create experiences that connect people to the place through research, ideation, installation, user observation, testing, and assessment. Prerequisites: GRPH 255, GRPH 262. (Course fees apply.)

**GRPH 355 - ADVANCED DOCUMENT DESIGN (4)**

Rigorous application of graphic design principles as they relate to the creation, management, and production of a complex document. Topics include time management, cross-media publishing, implementing copy changes, developing interactivity, maintaining a theme, and cost estimating. Prerequisite: GRPH 255 or permission of instructor. Offered odd years. (Course fees apply.)

**GRPH 366 - MULTIMEDIA PUBLISHING (4)**

Examination and practice of design for various media. Students will develop content and style it appropriately depending on media type. Topics include content development, design, typography, editing, and incorporating interactive content using industry standard digital publishing techniques. Prerequisite: GRPH 136 and GRPH 255. Offered even years. (Course fees apply.)

**GRPH 370 - FUNDAMENTALS OF PACKAGING (4)**

Development and application of trend awareness and market influences as they relate to consistent brand development and 3-D visualization. Strong emphasis on craft. Prerequisite: GRPH 262 (Course fees apply.)

**GRPH 371 - GRAPHIC DESIGN STUDIO (2)**

Individualized digital and/or traditional assignments, chosen in consultation with graphic design faculty. Application of problem-solving techniques and procedures related to design. Students are encouraged to use innovative techniques to achieve workable solutions to selected problems. Prerequisites: GRPH 124, 235, 255, 262.

**GRPH 445 - GRAPHICS SERVICES (3)**

The study of graphics job coordination and preflight techniques, including functions related to matching customer needs to the requirements of prepress and press operations. Considers customer service and education as related to preproduction and production planning, evaluation and file management. Prerequisites: GRPH 255, GRPH 262, and GRPH 370. (Course fees apply.)

**GRPH 463 - WEB PUBLISHING (4)**

Advanced website development using industry standard CMS (Content Management System). Integrating use of social network publishing, ecommerce and direct marketing tools explored. Customizing website functionality and design will also be addressed. Prerequisite: GRPH 263. Offered odd years. (Course fees apply.)

**GRPH 466 - UI/UX DESIGN FUNDAMENTALS (2)**

The study of User Interface (UI) and User Experience (UX) design from a variety of disciplines within the design field. Emphasis on electronic media design including aesthetics, interactivity, and the overall experience. Includes research, development and implementation strategies. Prerequisites: GRPH 255, 262, and 263, or permission of instructor. (Course fees apply.)

**GRPH 480 - ADVANCED PRACTICUM (1-6; 6)**

Advanced laboratory work in Graphics in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit. Prerequisite: Lower division work in chosen area.

## COURSES

### GRPH 491 - PORTFOLIO: BRAND IDENTITY (1)

Prepares students to succinctly express their professional design goals, clearly describe the kind of work they want to do, and communicate those goals visually through a comprehensive set of materials. Introduces methods for planning an online portfolio and for extending a brand to a web platform. Considers the importance of being relevant in the design community and of creating a plan that will develop and retain professional value. (Course fees apply.)

### GRPH 492 - PORTFOLIO DESIGN (2)

Design, collection, development, refinement and presentation of a professional portfolio of visual materials for the express purpose of interview. Consideration will be given to the total package, which must include a complete business system. The collection will include printed and digital media. Prerequisite: Senior standing or approval of instructor. (Course fees apply.)

### GRPH 490 - INTERNSHIP (0-4; 4)

Individual contract arrangement involving students, faculty, cooperative businesses and organizations to gain experience in a work environment. Allows the student to apply advanced classroom learning. A response paper will be required at the end of the internship experience. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval by department. (Course fees apply for students enrolled for 0 credit.)

## HEBR - HEBREW

### HEBR 331 - HEBREW I (4)

An introductory course to the grammar and vocabulary of Biblical Hebrew intended to enable the student to use the original language as a tool in Biblical studies.

### HEBR 332 - HEBREW II (4)

Study of Hebrew grammar and syntax advancing to reading of selected biblical passages. Prerequisite: HEBR 331.

### HEBR 333 - HEBREW III (4)

Advanced reading of selected passages from various sections of the Hebrew Bible and Modern Hebrew. Exegesis of biblical passages as time permits. Prerequisite: HEBR 332.

### HEBR 451 - READINGS IN HEBREW (2; 8)

Selected reading in the various sections of the Hebrew Bible. Prerequisites: HEBR 332, 333.

## HIST - HISTORY

## HISTORY GENERAL COURSES

### HIST 121, 122 - THE WEST AND THE WORLD (4, 4)

The history of Europe and its interaction with the world from the Middle Ages to the present. HIST 121 covers the 5<sup>th</sup> to the 18<sup>th</sup> centuries. HIST 122 covers the 19<sup>th</sup> century to the present.

**HIST 221, 222 - HISTORY OF THE UNITED STATES (4, 4)**

American history from the pre-Columbian period to the present. The first quarter covers through Reconstruction; the second quarter covers Reconstruction to the present.

**HIST 240 - MIDDLE EASTERN HISTORY (4)**

Middle Eastern history from the 7<sup>th</sup> century to the present. Emphasis on major social and cultural developments as well as religious, political, and economic history.

**HIST 242 - MODERN EAST ASIAN HISTORY (4)**

East Asian history since 1800, with particular emphasis on China and Japan. Offered alternate years.

**HIST 305 - THE ANCIENT NEAR EAST (4)**

History of the Ancient Near East. Considers economic and social life as well as political developments and environmental change. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

**HIST 315 - TOPICS IN THE HISTORY OF PHILOSOPHY (OR PHIL 315) (4)**

Presents a topic in the history of philosophy (ancient, modern, 19<sup>th</sup> or 20<sup>th</sup> century) as selected by the instructor. Provides an in-depth examination of the work of one thinker or a group of thinkers (e.g., German idealism) from the given historical period. May be repeated for credit when topics vary. Prerequisite: One general studies history class, or permission of instructor.

**HIST 335 - THE WORLD WARS (4)**

Study of World War I, the interwar period, and World War II in both the European and Pacific theaters. The course also explores the rise of totalitarianism and nationalism within the context of global imperialism. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

**HIST 357 - THE AFRICAN-AMERICAN EXPERIENCE (OR ENGL 357) (4)**

African-American contributions to American history and culture from the colonial period to the present. Prerequisite: One general studies history class, or permission of instructor. Credit will not be allowed for both ENGL 357 and HIST 357. Offered alternate years.

**HIST 382 - HISTORICAL BIOGRAPHY (4)**

Biographical and autobiographical studies of distinguished as well as lesser-known figures throughout history. May be repeated for credit as topics vary. Prerequisite: One general studies history class, or permission of instructor.

**HIST 394 - DIRECTED READING (1-3)**

Independent reading for students who wish to continue broadening their knowledge of history by extensive reading; admission by department approval. Prerequisite: One general studies history class, or permission of instructor.

**HIST 395 - METHODS OF TEACHING SOCIAL STUDIES (3)**

Methods and techniques of teaching social studies on the secondary school level; requires observation, demonstration and class presentation. Will not apply towards a major or minor in history. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.



## COURSES

### HIST 414 - TOPICS IN ASIAN HISTORY (4; 8)

Seminar in Asian History explores themes in Asian history as selected by the instructor. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 415 - TOPICS IN ANCIENT HISTORY (4; 8)

Seminar in Ancient History explores themes in the ancient world as selected by the instructor. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 440 - HISTORY OF SOCIAL AND POLITICAL PHILOSOPHY (OR PHIL 440) (4)

Examines major philosophical views on the origin and justification of political obligation. Includes readings in political theory from classical philosophers such as Plato, Aristotle, and Augustine from the classical period; Kant, Rousseau, Hobbes, Locke, Spinoza, and Mill from the modern period; and Rawls, Mills, and Pateman from the twentieth century. Topics will include the origin of the state, the authority of the state over the individual, and the consent of the governed. Prerequisite: PHIL 204 or 205 or permission of the instructor. Offered alternate years.

### HIST 490 - INTERNSHIP (0-4)

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in a non-classroom setting. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

### HIST 495 - COLLOQUIUM (0)

A series of lectures, discussions, and other activities that address historical and professional issues for history students. For each quarter that a student fails to complete the colloquium requirement as stated for the major, there will be a fee to be paid before an alternative colloquium will be approved. Graded S or NC.

## AMERICAN HISTORY COURSES

### HIST 283 - LATIN AMERICA (4)

The history of pre-contact Latin America to the present with an emphasis on the themes of exploration and conquest, colonialism, independence, post-colonialism, nationalism, and revolution. Offered alternate years.

### HIST 337 - BASEBALL AND AMERICAN CULTURE (4)

The development of baseball and its impact on American popular culture, with an emphasis on baseball literature, music, and films. Will not satisfy general education history requirement. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years. (Course fees apply.)

### HIST 359 - THE AMERICAN ECONOMY (OR ECON 359) (4)

Development of the American economy and business systems from the colonial era to the present. It traces the transformation of key United States institutions

(the firm, market, government) and themes (strategy, finance, organization) across the centuries, addressing their relevance to current debates.

Prerequisite: a general studies history course. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

#### HIST 436 - RELIGION IN AMERICAN HISTORY (4)

A historical examination of American Religions and their role in the social, political, and economic life of the nation. The course will also survey the theologies, institutional forms, and the artistic and emotional expressions of religions that have developed on the United States. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

#### HIST 443 - COLONIAL AND REVOLUTIONARY AMERICA (4)

Growth of the American colonies and movements toward independence, the American Revolution, and the formation of the United States Constitution. Prerequisite: One general studies history class, or permission of instructor.. Offered alternate years.

#### HIST 445 - THE CIVIL WAR AND RECONSTRUCTION (4)

The sectional crisis, the war, and its impact on postwar political, economic, and social development. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

#### HIST 446 - HISTORY OF THE PACIFIC NORTHWEST (4)

History of the Pacific Northwest from the age of discovery to contemporary times. Prerequisite: One general studies history class, or permission of instructor.

#### HIST 448 - THE EMERGENCE OF MODERN AMERICA (4)

America from the end of reconstruction through the Great Depression. Covers such issues as the rise of industry, the growth of consumerism, immigration, imperialism, Populism, and Progressivism. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

#### HIST 449 - RECENT AMERICAN HISTORY (4)

American society, politics, and culture from the end of World War II to the present. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

#### HIST 450 - AMERICA OVERSEAS (4)

American foreign policy since 1960, particularly as applied to Vietnam and the Middle East. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### EUROPEAN HISTORY COURSES

#### HIST 254 - HISTORY OF CHRISTIANITY (4)

Christian history from the early church to the present. The course will focus on the theological, political, and cultural development of Christianity around the world.

#### HIST 274 - STUDY TOUR: ENGLISH HISTORY IN CONTEXT (4)

History of medieval and early modern England offered in conjunction with the UK History and Literature Tour. The course will bring together an investigation of historic places, documents, art, music, theatre, and architecture in order to provide

## COURSES

a window into the English past and present. Offered alternate years during the summer.

### HIST 275 - HISTORY OF ENGLAND (4)

Development and expansion of the English nation from the earliest times to the present.

### HIST 306 - CLASSICAL GREECE AND ROME (4)

Classical Greece and Rome to AD 476 with particular emphasis on cultural and political history. Prerequisite: One general studies history class, or permission of instructor.

### HIST 307 - REFORM AND REVOLT (4)

Course will explore the development of Christian history from the era of the Reformation to the American & French Revolutions (1500 to 1800). The emphasis will be on how the reform movements of the sixteenth century fractured the Christian Church, shaped theological developments, and set the stage for modern political and religious identity. Prerequisite: One general studies history class, or permission of instructor.

### HIST 360 - SCIENCE AND THE ENLIGHTENMENT (OR HMNT 360) (4)

History of the scientific revolution and enlightenment thought in Early Modern Europe. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 437 - MEDIEVAL AND RENAISSANCE EUROPE (4)

History of the religious, political, social, intellectual, and artistic developments from Middle Ages through the Italian Renaissance. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 463 - WOMEN AND SOCIETY IN EARLY MODERN EUROPE (4)

Examines the transformation in European ideas about the role of women in family, society, and culture during a crucial period of social and intellectual change (1450 - 1800). Students will gain an understanding of how the reformation, new economic forces, educational reforms, systematic violence against women, professionalization, the scientific revolution, and new ideas about gender affected the structure of society. Focuses especially on women who demanded that society listen to female voices. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 466 - AGE OF REVOLUTIONS 1789-1849 (4)

Revolutionary Europe from the outbreak of the French Revolution in 1789 through the Revolutions of 1848/49. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

### HIST 474 - STUDY TOUR: ENGLISH REFORMATION (4)

History of the long English Reformation from Wycliffe to the "Glorious" Revolution in 1688. Offered in conjunction with the UK History and Literature Tour. The course will examine such political issues as the reign of Henry VIII, Queen Elizabeth I, and the English Civil War, as well as social and intellectual issues ranging from theological developments to the religious practices and views of the people. Offered alternate years during the summer.

## HISTORY RESEARCH COURSES

### HIST 391 - THE CRAFT OF HISTORY (2)

Introduction to the methods, materials, and problems of historical research; students choose the topic for their senior papers, commence research, and write a proposal.

### HIST 392 - HISTORIOGRAPHY (2)

Survey of historians and historical writings from the development of the historical profession in the nineteenth century to the present. Prerequisite: HIST 391.

### HIST 496, 497, 498 - SEMINAR (2, 2, 1)

Preparation and presentation of the senior paper. Open only to senior history majors. Must be taken in sequence. Prerequisites: HIST 391, 392.

## HLTH - HEALTH

HLTH 110 or permission of instructor is a prerequisite to all upper division health science courses.

### HLTH 110 - WELLNESS FOR LIVING (3)

Survey course covering current health issues; emphasizes the promotion of personal well-being. (Course fees apply.)

### HLTH 205 - SURVEY OF HEALTH (2)

Survey of the development of health. Includes secular, biblical and Seventh-day Adventist history and current topics.

### HLTH 208 - DRUGS AND SOCIETY (3)

Study of the use, misuse, and abuse of all classes of drugs, including alcohol and tobacco. Emphasis will be placed on the physiological, sociological, and psychological factors which may lead to drug experimentation and heavy drug use.

### HLTH 217 - FIRST AID (2)

Preparation for earning Standard American Red Cross and Cardiopulmonary Resuscitation certificates; prepares the student to deal effectively with minor emergencies, sudden illness, and traumatic injuries. Lecture and laboratory. (Course fees apply.)

### HLTH 220 - HUMAN NUTRITION (4)

Study of fundamental principles and basic vocabulary of nutritional science; interpretation and application of those principles through practical experiences. Covers the many factors associated with food and the digestion of food and the evaluation of current nutrition controversies.

### HLTH 308 - COMMUNITY HEALTH (3)

Study of the historical development of community health, including the role of different health agencies in the community. Emphasizes the prevention of disease and health promotion through organized community effort. Offered odd years.

### HLTH 315 - ETIOLOGY OF SELECTED DISEASES (3)

Critical review of the morphology, pathogenesis, and epidemiology of major degenerative diseases. Major emphasis is on prevention, identification of high-risk groups, and early detection with applications to personal and community control programs. Prerequisites: HLTH 110, 220; BIOL 105 or 121 or 141.

## COURSES

### HLTH 328 - BASIC THERAPY (2)

Study of simple, nondrug therapeutic health practices; includes legal implications. (Course fees apply.)

### HLTH 331 - CONSUMER HEALTH (3)

Study of advertising techniques and claims concerning a variety of health care products. Analysis will also be made of quackery, various health care services, and the role of the FDA, FTC, and other governmental agencies in protecting the consumer. Offered even years.

### HLTH 350 - INTERNSHIP PLACEMENT ORIENTATION (OR PETH 350) (0)

An internship placement orientation seminar intended to make students aware of agency possibilities, application and evaluation procedures, contracts and the internship learning process. Graded S or NC.

### HLTH 370 - HEALTH PSYCHOLOGY (OR PSYC 370) (3)

The study of learning, motivation, and psychological theories as related to health decisions and practices. Topics include the psychology of addictive behavior, behavioral health, and the relationship between stressful life events, social support, and wellness.

### HLTH 421 - HEALTH PROMOTION PLANNING AND EVALUATION (3)

Study of methods of determining health needs, organizing community service skills, planning techniques, and program evaluation. Laboratory required. Prerequisite: HLTH 315, 370, or permission of instructor.

### HLTH 422 - PROGRAMS IN HEALTH PROMOTION (3)

Study of the methods of program production in health. Supervised experience in the implementation of health education programs within churches, industries, schools, or hospitals of the community. Laboratory required. Prerequisite: HLTH 421.

### HLTH 437 - COMMUNITY NUTRITION (3)

Survey of current community nutrition problems and of programs designed to alleviate the problems; food habits of population groups which have a high incidence of malnutrition; implications of fad diets. Field experience included. Prerequisite: HLTH 220 or permission of instructor. Offered odd years. (Course fees apply.)

### HLTH 471 - HUMAN SEXUALITY (OR SOWK 471) (3)

Study of resources, research, anatomy and physiology, and personal values clarification on human sexuality. Emphasis will be on the interactions between biology, cognition, emotions, socialization, and culture. Prerequisite: PSYC 130 or SOCI 204.

### HLTH 472 - STRESS MANAGEMENT (3)

Designed to guide the student in planning practical strategies for personal stress management. A holistic approach emphasizing physical, mental, emotional, and spiritual aspects of a positive Christian lifestyle. The works of Hans Selye and other theoreticians of modern stress management are considered. Students will develop skills in time management, and techniques of meditation and relaxation and exercise. Also considered is the market for stress management education in Employee Assistance Programs. Prerequisite: PSYC 130 or SOCI 204.

**HLTH 490 - INTERNSHIP IN HEALTH (12)**

Supervised field experience in an approved health care agency. Practical experience and application of responsibilities and competencies necessary for practicing health education. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin.

Prerequisites: HLTH 350, 427, 475; HLTH 217, or current certification in First Aid and CPR. Graded S or NC.

**HLTH 496 - SEMINAR (1)**

Presentation and discussion of current topics in Health and Physical Education.

Prerequisite: Senior standing in Health or permission of instructor.

**HMNT - HUMANITIES****HMNT 360 - SCIENCE AND THE ENLIGHTENMENT (OR HIST 360) (4)**

History of the scientific revolution and enlightenment thought in Early Modern Europe. Prerequisite: One general studies history class, or permission of instructor. Offered alternate years.

**HMNT 391 - INTRODUCTION TO SCHOLARSHIP I (2)**

Introduction to the methods, materials, and problems of academic research; students choose the topic for their senior projects, commence research, and write a proposal.

**HMNT 392 - INTRODUCTION TO SCHOLARSHIP II (2)**

Students conduct a survey of previous research on their topic and continue to refine their proposals.

**HMNT 490 - EXPERIENTIAL LEARNING (2)**

Practical experience allowing application of classroom learning in the student's primary area of study and taking into account the student's future career objectives. Specific learning programs and outcomes will be determined by the student in consultation with an academic advisor. Experiential learning can take a wide variety of forms, including a formal internship, volunteer work, or assistance on a professional or academic research project. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the Bulletin. Graded S or NC.

**HMNT 496, 497 - SEMINAR (2, 2)**

Preparation and development of the senior project. Open only to senior Humanities and Multidisciplinary Studies majors. Must be taken in sequence. Prerequisites: HMNT 391, 392.

**HMNT 498 - SEMINAR (1)**

Completion and presentation of the senior project. Open only to senior Humanities and Multidisciplinary Studies majors. Must be taken in sequence.

**HONR - HONORS**

HONR 131, 132, 133, and ENGL 141, 142 (or their equivalent), and HONR 243 are prerequisites to all upper-division honors courses.

## COURSES

### HONR 131, 132, 133 - WESTERN THOUGHT (4, 4, 4)

Integration of Western history and literature with added emphasis on philosophical concepts and their relationships to events. Completion of all three quarters satisfies 8 hours of general studies history and 4 hours of literature; completion of 8 hours satisfies 4 hours of history and 4 hours of literature; completion of 4 hours satisfies 4 hours of general studies humanities.

### HONR 243 - HONORS RESEARCH WRITING (3)

A study of library resources, information-gathering techniques, and research writing, including ethics and style expected in the academic community. Includes a major documented research paper that incorporates arguments, texts, and strategies studied in College Writing. Public presentation of the final papers is required. Prerequisite: ENGL 141, 142, or equivalent. (Course fees apply.)

### HONR 281 - THE BIBLE AND ITS ENVIRONMENTS (4)

Study of selected biblical themes in light of the text and its contemporary culture and thought. This course satisfies four hours of RELB general studies religion credit.

### HONR 310 - SCIENCE AND THE ARTS (4)

Study of science in its historical context and its relationship to the humanities. Laboratory included. Completion satisfies 4 hours laboratory science or 4 hours humanities (fine arts). Prerequisites: HONR 131, 132, 133; math and lab science cognates. (Course fees apply.)

### HONR 348 - TOPICS IN WORLD RELIGIOUS THOUGHT (4)

Examines various religious and philosophical ideas developed outside the Western tradition. Topics determined by instructors. Applies to the general studies religion requirement.

### HONR 349 - RELIGION IN A SOCIAL CONTEXT (4)

Study of religion in its social setting, including the nature and role of religious symbol systems, the importance of religion in the creation of social values, the function of religion in social change, and the institutionalization of religion. Includes case studies from the history of Christianity and the history of Seventh-day Adventism. Satisfies 4 hours of general studies social science or 4 hours religion.

### HONR 392 - HONORS PORTFOLIO (1)

Guided development of a portfolio that includes reflection on the impact of the honors general studies program on each student's social, spiritual, academic, and professional development. The portfolio will include a philosophy of learning, reflection on the integration of curricular and co-curricular activities, and a reflective essay. The portfolio will also include professional development components such as a resume, statement of purpose, and writing samples.

### HONR 394 - HONORS DIRECTED READING (1-2; 3)

Independent reading for students who wish to continue broadening their interdisciplinary course work by intensive reading; admission by Honors Program director approval. Prerequisite: HONR 132 or HONR 133 and HONR 243.

### HONR 479 - HONORS DIRECTED RESEARCH (1-4; 6)

Interdisciplinary research supervised by a mentor in the student's major or minor. One hour of credit granted represents 30 hours of directed research. May be repeated for credit, up to 6 hours, in the Honors elective category. Permission of instructor and research supervisor required. Graded S or NC.

**HONR 496, 497, 498-HONORS SEMINAR: FAITH AND LEARNING (1, 1, 1)**  
 This course seeks to integrate learning and religious faith. Students present formal papers based on reading, research, and dialogue with faculty. Must be taken in sequence. Applies to the general studies religion requirement.  
 Prerequisite: Completion of 32 hours of HONR classes or senior standing.

## **ILL - ILLUSTRATION**

### **ILL 244 - INTRODUCTION TO ILLUSTRATION (4)**

Introduction to professional illustrative practices. Course provides a foundation for students who wish to pursue a career in illustration. Topics include the history of modern illustration, the illustrative method, and contemporary illustration in a global context. Prerequisite: ART 181.

### **ILL 245 - CHILDREN'S BOOK ILLUSTRATION (4)**

Exploration of the unique challenges of illustrating books for children. Concepts addressed include working within the confines of a book, selecting and appealing to a specific audience, visual storytelling, and character design. Prerequisite: ILL 244.

### **ILL 246 - SEQUENTIAL ART (4)**

Study of the structure, mechanics, and potential of visual story-telling. Exploration of a variety of master work in this field in order to establish the students' own visual language and creation of their own visual short stories. Prerequisite: ILL 244.

### **ILL 354 - ANIMAL AND CREATURE DESIGN (4)**

Study of the skeletal, muscular, and fundamental structures of several families of animals. Once basic animal anatomy is covered, students will explore topics such as rendering animal textures, composite forms, and creature design. Prerequisites: ILL 244, ILL 245, ART 307.

## **JOUR - JOURNALISM**

### **JOUR 148 - CREATIVITY AND COMMUNICATION (3)**

Students develop an understanding of their creative potential and how to nurture it through communication. The course focuses on the creative and strategic thinking required to generate ideas and produce work in creative disciplines.

### **JOUR 245 - MEDIA WRITING (4)**

Introduction to writing news and feature stories for publication in newspapers and in online media. Prerequisite: ENGL 122.

### **JOUR 247 - COPY EDITING (3)**

Introduction to the roles and responsibilities of a copy editor. Course includes practice in editing copy for content and style to meet generally accepted journalism standards and Associated Press style.

### **JOUR 257 - INTRODUCTION TO PHOTOJOURNALISM (2)**

Introduction to the basic principles and practices of photojournalism for online media, newspapers, magazines and corporate publications, using still photographs to tell the story. A DSLR camera is required. Two lectures and one laboratory per week. Prerequisite: PHTO 156. (Course fees apply.)



## COURSES

### JOUR 341 - FEATURE WRITING (4)

Analysis of publication markets, fundamentals of gathering materials for feature articles, and preparation of manuscripts for publication.

### JOUR 344 - TECHNICAL WRITING (3)

Study and practice of principles of technical communication, including the analysis of purpose and audience, clarity of writing and editing, selection of visual elements, and developing a level of skill appropriate for a beginning professional technical writer. Prerequisite: ENGL 122.

### JOUR 345 - SPECIALIZED WRITING: (3)

Study of and practice in writing in specialized areas such as public affairs, inspirational and religious, science and health, education, arts and entertainment; and opinion, editorial and column writing. Emphasis is on developing a level of writing suitable for publication in one such specialized area. Course may be repeated as topics vary. Prerequisites: JOUR 245 and 346 or permission of instructor.

### JOUR 346 - REPORTING METHODS (3)

Basic training in the use of interviewing and other social research techniques for the gathering and reporting of news. Prerequisite: JOUR 245.

### JOUR 349 - SOCIAL MEDIA STRATEGIES (3)

An introduction to contemporary social media influences on how we think, interact, and learn with a focus on the skills necessary for quality storytelling via social media. Students will develop and write news content and respond interactively on multiple social media platforms.

### JOUR 394 - DIRECTED READING: (1-2; 3)

Independent reading for students who wish to broaden their knowledge of major literature of the field, including biographies and classics. Offered alternatively with COMM 394 and SPCH 394.

### JOUR 445 - DIRECTED MEDIA WRITING (1-3)

The refining of writing skills through a program adapted to the student's professional interest. Submission of writing samples and permission of instructor required.

### JOUR 451 - DIGITAL PUBLISHING (4)

Instruction and practice in communicating effectively in a digital publishing environment including copy editing, headline writing, graphics development and placement and cross-platform publication. Students will plan and develop a new publication with prospectus, dummy copy, and design concepts. Prerequisite: GRPH 124. (Course fees apply.)

### JOUR 457 - ADVANCED PHOTOJOURNALISM (3)

Advanced techniques of reporting and interpreting news with photography. Considers aesthetics, lighting, composition, storytelling techniques, and picture content, with emphasis on building professional skills. Prerequisite: JOUR 257. One laboratory per week. Offered odd years. (Course fees apply.)

### JOUR 458 - NEWSPAPER STAFF PHOTOGRAPHY PRACTICUM (1-3; 3)

During this year-long practicum the student shoots for the weekly broad sheet campus newspaper or works part-time at the local newspaper or works at a

summer internship with a daily newspaper. Students experience a wide variety of news, sports, and feature assignments under deadline pressure. Students take one credit per quarter for three quarters, or full-time during a summer for three credits.

### **JOUR 479 - DIRECTED PHOTOJOURNALISM PROJECT: (1-3)**

A directed class that focuses on developing a professional portfolio. Students who sign up for this course will engage in a specific activity, such as documentary photojournalism or multi-picture reporting on in-depth subjects with the approval of the instructor.

## **LANG - LANGUAGE**

### **LANG 205 - INTRODUCTION TO NATURAL LANGUAGE AS A SECOND LANGUAGE (3)**

Provides students with fundamental insights into the nature of human language, structure and usage in society within the Second Language (L2) frame of reference. Covers elements of linguistics and sociolinguistics as applied to L2.

### **LANG 395 - METHODS OF TEACHING LANGUAGES (3)**

Study of principles and methods of teaching languages in K-12. Observation, demonstration, and class presentation are required.

### **LANG 406 - LANGUAGE AND CULTURE (3)**

Study of the inter-dynamics of language and culture. Focuses on the role of language as a socio-cultural phenomenon. Covers topics such as language variation, multi-linguism, language contact, cultural products, cultural perspectives, cultural practices, social behavior and social issues.

### **LANG 490 - INTERNSHIP (0-4; 4)**

Individual contract arrangement involving students, faculty, and cooperating regional or international organizations to gain practical experience using a foreign language in an off-campus setting. This is an international internship to be completed in a country where the language of emphasis is spoken. Additional coursework required if completed in the United States. Requirements include a minimum of 30 hours of documented work experience. Open only to majors in this field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval of the department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## **LATN - LATIN**

### **LATN 211, 212, 213 - LATIN I (4, 4, 4)**

Introduction to the elements of classical Latin with experience in translation.

Prerequisites: A score of 50 percentile on the ACT composite score and 50 percentile on the ACT English scores or successful completion of ENGL 121, 122.

### **LATN 311, 312, 313 - LATIN II (4, 4, 4)**

Continued reading in Latin authors with emphasis upon grammar and syntax. Offered as needed.

## **LAW - LAW**

### **LAW 420 - CONSTITUTIONAL LAW AND CRIMINAL PROCEDURE (4)**

An in depth study of the American Constitution in light of United States Supreme Court decisions in the following areas: judicial review, the Commerce Clause, Congressional and Executive Power, Federal and State Power, individual rights, the Bill of Rights generally, Freedom of Religion, the death penalty, and Criminal Procedure (the 4th, 5th, 6th, and 8th Amendments).

### **LAW 490 - INTERNSHIP (0-6; 6)**

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in off-campus setting. Allows the student to apply advanced classroom learning. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. If taken to satisfy the internship requirement for business majors, a minimum of 120 hours of approved experience must be completed, regardless of the number of credits earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## **MATH - MATHEMATICS**

Students must meet the University entrance requirement in mathematics, pass a departmental placement test, or pass MDEV 003 with a grade of C- or higher before enrolling in mathematics courses numbered above 100. Before enrolling in any mathematics course, students must have grades of C- or higher in all prerequisite courses.

### **MATH 105 - FINITE MATHEMATICS (4)**

Designed to give the liberal arts student an overview of the various ways mathematics is used in a modern society. Topics include linear equations and systems of linear equations, sets and counting, probability, and descriptive statistics. Additional topics are selected from logic, matrices, linear programming, game theory, and the mathematics of finance. Designed to meet the general studies requirement for the baccalaureate degree, but does not apply towards a major or minor in mathematics. Completion of MATH 117 or higher precludes subsequent enrollment in this course. Prerequisite: MDEV 003 or satisfactory departmental placement.

### **MATH 106 - INTRODUCTION TO STATISTICS (4)**

Designed for students in health-related majors, the social sciences, or other fields in which a basic knowledge of statistical methods is required. Topics include sampling, descriptive statistics, simple linear regression, probability, the normal and binomial distributions, confidence intervals and hypothesis testing for means and proportions, chi-square tests, and simple analysis of variance. Computer-based lab activities are required. Meets the general studies requirement for the baccalaureate degree, but does not apply towards a major or minor in mathematics. Prerequisite: MDEV 003 or satisfactory departmental placement.

### **MATH 112 - MATHEMATICS FOR ELEMENTARY TEACHERS I (3)**

Designed to help the prospective elementary school teacher develop a deep understanding of topics typically covered in the K-8 mathematics curriculum. Topics include problem solving strategies; sets; numeration systems; arithmetic for

whole numbers, integers, rational numbers, and real numbers using multiple algorithms; elementary number theory; proportions; and percentages. Emphasizes constructing concrete models for these concepts and lab work is required. Designed to meet the general studies requirement for the baccalaureate degree and the minor in mathematics for middle school teachers, but does not apply towards a major or minor in mathematics. Prerequisite: MDEV 003 or satisfactory departmental placement.

#### MATH 113 - MATHEMATICS FOR ELEMENTARY TEACHERS II (3)

A continuation of MATH 112. Topics include algebraic and functional reasoning, graphing, coordinate geometry, the geometry of shapes, measurements, transformations and symmetry, congruence and similarity, descriptive statistics, and an introduction to probability. Emphasizes constructing concrete models for these concepts and lab work is required. Designed to meet the general studies requirement for the baccalaureate degree and the minor in mathematics for middle school teachers, but does not apply towards major or minor in mathematics. Prerequisite: MATH 112.

#### MATH 117 - ACCELERATED PRECALCULUS (5)

Designed for students preparing to take Calculus I who have had some previous experience with Precalculus but are in need of further review. Covers topics from college algebra and trigonometry including polynomial, rational, exponential, logarithmic, and trigonometric functions and their graphs; trigonometric identities; and complex numbers. Designed to meet the general studies requirement for the baccalaureate degree, but does not apply towards a major or minor in mathematics. Credit will not be allowed for both MATH 117 and MATH 121 or 122. Prerequisite: MDEV 003 or satisfactory departmental placement.

#### MATH 121 - PRECALCULUS I (4)

Designed for students majoring in scientific or technical fields who need a knowledge of college algebra, or for students preparing to take Calculus I. Topics include integer, rational, real, and complex numbers; solving equations and inequalities; and algebraic, exponential, and logarithmic functions and their graphs. The course is designed to meet the general studies requirement for the baccalaureate degree, but does not apply towards a major or minor in mathematics. Credit will not be allowed for both MATH 121 and MATH 117. Prerequisite: MDEV 003 or satisfactory departmental placement.

#### MATH 122 - PRECALCULUS II (4)

A continuation of MATH 121. Topics include trigonometric functions and their graphs, trigonometric identities, matrices, determinants, sequences, mathematical induction, and the binomial theorem. The course is designed to meet the general studies requirement for the baccalaureate degree, but does not apply towards a major or minor in mathematics. Credit will not be allowed for both MATH 122 and MATH 117. Prerequisite: MATH 121 or satisfactory departmental placement.

#### MATH 131 - CALCULUS FOR THE LIFE SCIENCES I (4)

Designed for students majoring in the life sciences or intending to pursue graduate or professional degrees in health-related fields. Topics include a review of algebra; a survey of polynomial, exponential, logarithmic, and trigonometric functions; limits and continuity; and derivatives and their application. Emphasizes the aspects of calculus most relevant to the life sciences, including biology, medicine, and ecology. Designed to meet the general studies requirement

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for the baccalaureate degree. Credit will not be allowed for both MATH 131 and MATH 181. Prerequisite: MDEV 003 or satisfactory departmental placement.

### MATH 132 - CALCULUS FOR THE LIFE SCIENCES II (4)

A continuation of MATH 131. Topics include integration techniques and applications, multivariable calculus, matrices and eigenvalues, an introduction to differential equations, and a survey of discrete and continuous probability models. Emphasizes those aspects of calculus most relevant to the life sciences, including biology, medicine, and ecology. Designed to meet the general studies requirement for the baccalaureate degree, but will not apply towards a major in mathematics. Prerequisite: MATH 131 or MATH 181.

### MATH 181 - CALCULUS I (4)

Designed for students majoring in mathematics, engineering, or the physical sciences, or for those seeking a rigorous introduction to the Calculus. Topics include limits, continuity, derivatives, and applications. Includes formal definitions of the limit and derivative, as well as proofs of standard theorems. Meets the general studies requirement for the baccalaureate degree. Credit will not be allowed for both MATH 181 and MATH 131. Prerequisite: MATH 117 or MATH 122 or satisfactory departmental placement.

### MATH 215 - DATA ANALYSIS (4)

Designed to introduce the mathematically inclined student to the process of statistical investigation and the use of statistical software. Topics include visualization methods; basic probability; sampling; estimation and hypothesis testing; simple and multiple linear regression models; simple machine learning techniques; and linear time series models. Substantial projects using real-world data are required. Prerequisite: MATH 131 or MATH 181. Recommended prerequisite: CPTR 141. Offered even years.

### MATH 250 - DISCRETE MATHEMATICS (4)

Designed to introduce students in the mathematical and computational sciences to discrete mathematical structures and to act as a transition to higher mathematics and computer science courses. Topics include an introduction to set theory, combinatorics, symbolic logic and proofs, recursion, recurrence relations, graph theory, and the theory of computation. Additional topics selected from number theory, relations, and functions. Emphasizes mathematical reasoning and proof writing. Prerequisite: MATH 131 or MATH 181.

### MATH 281 - CALCULUS II (4)

A continuation of MATH 181. Topics include definite and indefinite integrals, L'Hôpital's rule, techniques and applications of integration, and an introduction to differential equations. Includes formal definitions and proofs of standard theorems, including the Fundamental Theorem of Calculus. Meets the general studies requirement for the baccalaureate degree. Prerequisite: MATH 181, or MATH 131 and MATH 122, or MATH 131 and satisfactory departmental placement.

### MATH 282 - CALCULUS III (4)

A continuation of MATH 281. Topics include sequences, series, tests for convergence, Taylor and Maclaurin series, polar coordinates, parametric equations, and vector calculus. Includes formal definitions and proofs of standard theorems. Prerequisite: MATH 281.

**MATH 283 - CALCULUS IV (4)**

A continuation of MATH 282. Topics include differential and integral calculus of multi-variable functions, line and surface integrals, Green's theorem, the divergence theorem, and Stokes' theorem. Includes formal definitions and proofs of standard theorems. Prerequisite: MATH 282.

**MATH 289 - INTRODUCTION TO LINEAR ALGEBRA (3)**

Designed to introduce students majoring in mathematics, computing, engineering, or the physical sciences to the concepts of linear algebra. Topics include systems of linear equations, matrices, determinants, eigenvalues and eigenvectors, linear transformations, and Euclidean n-space. Emphasizes applications and computation. Prerequisite: MATH 131 or MATH 181.

**MATH 312 - ORDINARY DIFFERENTIAL EQUATIONS (4)**

Designed to introduce students majoring in mathematics, engineering, or the physical sciences to ordinary differential equations as dynamical systems. Topics include linear and non-linear first order equations and systems, higher order linear equations, modeling, standard analytic and qualitative solution methods, equilibria and stability, and phase plane analysis. Prerequisite: MATH 283.

**MATH 315 - PROBABILITY AND STATISTICS (4)**

Designed for students majoring in mathematics, engineering, or the physical sciences, or for those seeking a calculus-based survey of probability and statistics. Topics include combinatorics, probability distributions and densities, mathematical expectation, functions of random variables, sampling distributions, interval estimation, hypothesis testing, linear regression, and analysis of variance. Includes formal definitions and proofs of standard theorems. Prerequisite: MATH 283.

**MATH 316 - MATHEMATICAL STATISTICS (4)**

A continuation of MATH 315. Topics include decision theory, methods of estimation and properties of estimators, the theoretical underpinnings of hypothesis testing, multiple linear regression, the design and analysis of experiments, and nonparametric statistical tests. Prerequisite: MATH 315. Offered odd years.

**MATH 319 - OPTIMIZATION (OR ENGR 419) (4)**

Modeling and design within a formal optimization environment. Mathematical formulation of optimization problems including decision space parameterization, objective function selection, and constraint definition. Survey of algorithms for unconstrained and constrained optimization; techniques for solving multi-disciplinary and multi-objective problems. Applications to problems in mathematics, physics, and engineering. Prerequisites: MATH 283, MATH 289, CPTR 141, PHYS 253. Credit will not be allowed for both MATH 319 and ENGR 419. Offered odd years.

**MATH 321 - SURVEY OF GEOMETRIES IN THEIR HISTORICAL CONTEXTS (4)**

Designed to provide mathematics majors, especially those concentrating in secondary education, and other mathematically inclined students with an overview of the axiomatic development and history of Euclidean and non-Euclidean geometries. Topics include Euclidean geometry, analytic geometry, hyperbolic geometry, spherical geometry, and transformations. Additional topics may be selected from affine, finite, fractal, and projective geometries and

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impossible constructions. Gives special attention to the contributions of diverse cultures to the field. Prerequisite: MATH 282. Offered even years.

### MATH 341 - NUMERICAL ANALYSIS (4)

Designed to give students majoring in mathematics, computing, engineering, or the physical sciences an overview of numerical methods of analysis with computer applications. Topics include numerical solutions of nonlinear equations, numerical solutions of differential equations, and numerical integration. Other topics may include interpolation and numerical solutions to systems of equations.

Prerequisites: CPTR 141, MATH 289, and MATH 312; or permission of instructor.

### MATH 389 - LINEAR ALGEBRA (4)

Designed to provide the mathematically inclined student with a theoretical understanding of linear algebra. Topics include general vector spaces, linear transformations, inner-product spaces, generalized eigenspaces, and the spectral theorem. Special attention is given to singular value decomposition and its applications. Includes formal definitions and proofs of standard theorems.

Prerequisite: MATH 289. Offered odd years.

### MATH 396 - JUNIOR MATHEMATICS SEMINAR I (0)

Designed for mathematics majors who are preparing to take the Senior Mathematics Seminar sequence. Students will attend and reflect upon the presentations given by the mathematics faculty and other students as a part of MATH 496. Corequisite: MATH 250. Graded S or NC.

### MATH 397 - JUNIOR MATHEMATICS SEMINAR II (0)

Designed for mathematics majors who are preparing to take the Senior Mathematics Seminar sequence. Students will read and discuss a scholarly paper of current interest in the instructor's field of mathematics. Prerequisite: MATH 250. Graded S or NC.

### MATH 413 - PARTIAL DIFFERENTIAL EQUATIONS (4)

Designed to give students majoring in mathematics, engineering, or the physical sciences an overview of solution methods for and applications of partial differential equations. Topics include first- and second-order PDEs, boundary-value problems and Fourier series. Prerequisites: MATH 289 and MATH 312. Offered even years.

### MATH 414 - SPECIAL TOPICS IN MATHEMATICS (3; 6)

Designed to provide advanced students the opportunity to study topics of interest from outside the typical undergraduate mathematics curriculum. Topics are chosen from such areas as mathematical biology, combinatorics, Lie algebras, non-parametric statistics, number theory, set theory, stochastic processes, and topology.

Prerequisite: permission of the instructor. May be repeated as topics vary. Offered odd years.

### MATH 435 - MATHEMATICAL PHYSICS (OR PHYS 435) (4)

In-depth study of the mathematical foundations of physics and their applications to physical problems. Particular attention is paid to the theory of linear vector spaces in developing tensor analysis group theory and Hilbert Space theory. This course is recommended for students planning to attend graduate school in physics, or having a strong interest in the applications of mathematics to the physical world. Offered odd years.

**MATH 451 - REAL ANALYSIS I (4)**

One of two core upper-division sequences designed for students majoring in mathematics. Provides an introduction to real analysis covering the development of the real number system, the completeness axiom, basic point-set topology, sequences and series, continuity, and differentiation. Prerequisite: MATH 283 and MATH 250. Offered odd years.

**MATH 452 - REAL ANALYSIS II (3)**

A continuation of MATH 451. Topics include Riemann-Stieltjes integration, sequences of functions, and uniform and pointwise convergence. Prerequisite: MATH 451. Offered odd years.

**MATH 453 - REAL ANALYSIS III (3)**

A continuation of MATH 452. Covers functions of several variables, and other selected topics such as differential forms, measure theory, and Lebesgue integration. Prerequisite: MATH 452. Offered odd years.

**MATH 461 - ABSTRACT ALGEBRA I (4)**

One of two core upper-division sequences designed for students majoring in mathematics. Provides an introduction to abstract algebra covering sets and relations, groups, subgroups, permutation groups, cosets, direct products, and group homomorphisms. Prerequisite: MATH 289 and MATH 250. Offered even years.

**MATH 462 - ABSTRACT ALGEBRA II (3)**

A continuation of MATH 461. Topics include the group isomorphism theorems, Sylow theorems, rings, and fields. Prerequisite: MATH 461. Offered even years.

**MATH 463 - ABSTRACT ALGEBRA III (3)**

A continuation of MATH 462. Topics include ideals and factor rings, extension fields, and other selected topics such as groups in topology, factorization domains, and Galois theory. Prerequisite: MATH 462. Offered even years.

**MATH 476 - PUTNAM PROBLEM SOLVING (1; 2)**

Prepares students to participate in the William Lowell Putnam Mathematical Competition. Topics include problem solving with an emphasis on both oral and written communication. Students are required to take the William Lowell Putnam exam, held annually in early December, as a part of the class. Prerequisite: Permission of the Department of Mathematics. Graded S or NC.

**MATH 490 - INTERNSHIP (0-4; 4)**

Designed for advanced mathematics major who wish to have a practical experience in an off-campus setting. Requires an individual contract involving students, faculty, and cooperating employers. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisites: MATH 283, minimum cumulative GPA of 3.0 in college mathematics courses and all college sources, and departmental approval. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

**MATH 496 - SENIOR MATHEMATICS SEMINAR I (1)**

Designed for senior mathematics majors as the capstone experience in the major. Each student will conduct an independent investigation in some field of mathematics in consultation with an assigned faculty research supervisor.



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Students will additionally observe and reflect on mathematics presentations given by the faculty as they prepare their own preliminary oral report on their research. Prerequisite: MATH 396 and MATH 397.

### **MATH 497 - SENIOR MATHEMATICS SEMINAR II (1)**

Continuation of MATH 496. Students will critique the oral reports given in MATH 496, expand on their research if necessary, and prepare a professionally formatted scholarly paper in consultation with their assigned faculty research supervisor. Prerequisite: MATH 496.

## **MDEV - DEVELOPMENTAL MATHEMATICS**

### **MDEV 001 - ELEMENTARY ALGEBRA (4)**

Designed for students who enter university without having met the mathematics entrance requirement of a one-year course in high school Algebra I. Topics include fractions, radicals, factoring, linear and quadratic equations, and graphing. Credit does not apply toward graduation. (Course fees apply.)

### **MDEV 002 - ELEMENTARY GEOMETRY (4)**

Designed for students who enter university without having met the mathematics entrance requirements of a one-year course in high school geometry. Topics include angles, polygons, circles, and triangles. Concepts and techniques of proof are integrated into this course. Credit does not apply toward graduation.

### **MDEV 003 - INTERMEDIATE ALGEBRA (4)**

Designed for students who enter university without having met the mathematics entrance requirements of a one-year course in high school Algebra II. Topics include sets, numbers, exponents, polynomials, factoring rational algebraic expressions, graphs, first and second degree equations, and inequalities. Credit does not apply toward graduation. (Course fees apply.)

## **MEDU - MATH EDUCATION**

### **MEDU 395 - METHODS OF TEACHING MATHEMATICS (3)**

Methods, materials, and techniques of teaching mathematics on the secondary school level; requires observation, demonstration, and class presentation. Will not apply toward General Studies or toward elective credits for a major or minor in mathematics. Offered odd years.

## **MGMT - MANAGEMENT**

### **MGMT 371 - PRINCIPLES OF MANAGEMENT (4)**

Introduction to the concepts of effective management in organizational settings. Primary emphases include management functions (planning, organizing, directing, and controlling), levels of management, and managerial skills.

### **MGMT 373 - ORGANIZATIONAL BEHAVIOR (OR PSYC 373) (4)**

The study of the behavior of individuals and groups in organizations with an emphasis on the implications for organizational design and management practice. Topics include motivation, leadership, decision-making, organizational culture, power, and conflict. Recommended: MGMT 371.

### MGMT 375 - ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (OR MKTG 375) (4)

Study of the ownership, startup, organization, finance, marketing, business plans, and exit strategies of small business enterprises. Topics include how to assess the feasibility of ideas, define a market, meet financing requirements, pitch business ideas, and develop an entrepreneurial team.

### MGMT 376 - HUMAN RESOURCE MANAGEMENT (4)

Emphasizes the importance of human resource management within organizations. Provides an overview of the human resource environment, acquiring and preparing human resources, assessing performance, employee training and development, and compensation and benefits. Prerequisite: MGMT 371 or permission of instructor.

### MGMT 380 - PRINCIPLES OF PROJECT MANAGEMENT (OR MKTG 380) (4)

Study of concepts and solutions supporting the planning, scheduling, controlling, resource allocation, and performance measurement activities required for successful completion of a project in both domestic and international environments.

### MGMT 476 - FOUNDATIONS OF LEADERSHIP (4)

Review of issues and perspectives on leadership, from classical theory to the exploration of modern issues. Emphasis will be given to emotional intelligence, transformational, servant, and authentic leadership frameworks. With a practical approach to change leadership and the skills for developing leaders. Recommended: MGMT 373.

### MGMT 488 - GLOBAL MANAGEMENT AND MARKETING (OR MKTG 488) (4)

An analysis of organizational, operational, and marketing problems associated with managing a business in the global environment. Emphasis is placed on culture, laws, and business practices. Prerequisites: MGMT 371 and MKTG 381.

### MGMT 489 - STRATEGIC MANAGEMENT (4)

A study of business operations from an integrated viewpoint. Research, in-depth case analyses, creation of a strategic plan, and formal presentations are required. Open to students with senior standing only.

### MGMT 490 - INTERNSHIP (0-4; 4)

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the Bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## **MKTG - MARKETING**

### MKTG 333 - STRATEGIES FOR FUNDRAISING (OR PREL 333) (4)

Study of philosophy, role, organization, and strategies of institutional development and fund raising. Includes consideration of annual funds, capital campaigns, special events, and direct mail. Offered even years.

**MKTG 375 - ENTREPRENEURSHIP AND SMALL BUSINESS  
MANAGEMENT (OR MGMT 375) (4)**

Study of the ownership, startup, organization, finance, marketing, business plans, and exit strategies of small business enterprises. Topics include how to assess the feasibility of ideas, define a market, meet financing requirements, pitch business ideas, and develop an entrepreneurial team.

**MKTG 380 - PRINCIPLES OF PROJECT MANAGEMENT (OR MGMT 380)  
(4)**

Study of concepts and solutions supporting the planning, scheduling, controlling, resource allocation, and performance measurement activities required for successful completion of a project in both domestic and international environments.

**MKTG 381 - PRINCIPLES OF MARKETING (4)**

An overview of the field of marketing including the marketing mix variables (product, price, promotion, and distribution), market segmentation, marketing strategy, market research, the role of marketing in the economic system, and consumer demand and behavior.

**MKTG 383 - PRINCIPLES OF ADVERTISING (4)**

A study of the principles of advertising creation and planning, copywriting, media selection, budgeting, layout, and design. The advantages and disadvantages of advertising in-house and through agencies are compared. Recommended: MKTG 381.

**MKTG 384 - CONSUMER BEHAVIOR (4)**

A study of why, when and how consumption occurs at both individual and group levels. Recommended: MKTG 381, PSYC 130.

**MKTG 415 - DIGITAL, SOCIAL MEDIA, AND MOBILE MARKETING (4)**

An introduction to marketing via digital channels, including social media and mobile platforms, in order to create strategies for managing brand, position, influence, customer relationships, engagement, reach, feedback, and privacy issues. Recommended: MKTG 381.

**MKTG 451 - MARKET RESEARCH METHODS (4)**

Introduction to collecting market information from secondary and primary sources. The focus of the class will be the systematic and objective planning, gathering, recording, and analyzing of information in order to develop and communicate recommendations for marketing and business strategies. Recommended: GBUS 263. Prerequisites: MKTG 381.

**MKTG 481 - PUBLIC RELATIONS (OR PREL 481) (4)**

An overview of public relations from the perspectives of business and communication; includes history, theory, and hands-on examples. Covers the basics of public relations writing and analyses a firm's public relations in detail.

**MKTG 488 - GLOBAL MANAGEMENT AND MARKETING (OR MGMT 488) (4)**

An analysis of organizational, operational, and marketing problems associated with managing a business in the global environment. Emphasis is placed on culture, laws, and business practices. Prerequisites: MGMT 371 and MKTG 381.

**MKTG 490 - INTERNSHIP (0-4; 4)**

Practical experience allowing application of classroom learning. Requirements include a minimum of 120 hours of documented work experience. See the Internship Program in the Nondepartmental section of the Bulletin. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

**MUCT - COMPOSITION AND THEORY****MUCT 111 - INTRODUCTION TO MUSIC THEORY (2)**

Study of the principles of notation and of basic scales, intervals and triads. Basic aural skills include recognition of diatonic intervals, triads, and elementary melodic dictation. Registration based on theory placement examination or advisement. 0 credit lab required. May not apply toward a music major or minor. Offered as needed.

**MUCT 112 - INTRODUCTION TO MUSIC THEORY (2)**

Study of all minor scales, chromatic intervals, and inverted triads. Aural skills include recognition of chromatic intervals, triads, and melodic dictation. Open to students who have not passed the theory placement examination or who need additional preparation before taking MUCT 121 Music Theory I. Prerequisite: MUCT 111 or permission of instructor. 0 credit lab required. May not apply toward a music major or minor. Offered as needed.

**MUCT 121, 122, 123 - THEORY I (3, 3, 3)**

Intensive study of traditional harmonic concepts up to and including secondary dominants. Includes improvisation and jazz harmony components. Corequisite: MUCT 131, 132, 133. Prerequisite: passing of an entrance examination.

**MUCT 124 - MUSIC NOTATION LAB (1)**

Introduction to computer music notation. This is a required laboratory that is to be taken in conjunction with MUCT 121, 122, or 123.

**MUCT 131, 132, 133 - EAR TRAINING I (1, 1, 1)**

Development of aural skills, including sight singing and ear training. Corequisite: MUCT 121, 122, 123.

**MUCT 221, 222, 223 - THEORY II (3, 3, 3)**

Study of music theory, emphasizing melodic and harmonic developments of the late nineteenth and twentieth centuries. Includes an improvisation component. Corequisite: MUCT 231, 232, 233. Prerequisites: MUCT 121, 122, 123, 124, 131, 132, 133.

**MUCT 231, 232, 233 - EAR TRAINING II (1, 1, 1)**

Development of aural skills, including sight singing and ear training. Corequisite: MUCT 221, 222, 223. Prerequisite: MUCT 124.

**MUCT 335 - COMPOSITION (1-2; 6)**

Study of the art of composing in the smaller forms; emphasizes twentieth-century techniques. Prerequisites: MUCT 221, 222, 223 and permission of instructor. Offered as needed.

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### MUCT 424 - FORM AND ANALYSIS (3)

Detailed study of musical structure. Prerequisites: MUCT 221, 222, 223 or permission of instructor.

### MUCT 425 - ORCHESTRATION (3)

Practical consideration of the techniques, capabilities, and effective uses of orchestral instruments in various combinations; includes scoring for small and large combinations of instruments. Prerequisites: MUCT 124, 424 or permission of instructor. Offered even years.

### MUCT 426 - COUNTERPOINT (3)

Study of the more intricate forms of contrapuntal writing such as motet, canon, and fugue. Prerequisites: MUCT 124, 221, 222, 223 or permission of instructor. Offered odd years.

### MUCT 434 - ADVANCED COMPOSITION (1-3; 3)

Advanced composition in the larger forms. Prerequisite: MUCT 335 and/or permission of instructor. Offered as needed.

## MUED - MUSIC EDUCATION

### MUED 251, 252, 253 - SINGER'S DICTION (1, 1, 1)

Study of Italian, German, and French phonetics. Required of all voice majors. May be waived by demonstrated proficiency. Offered odd years.

### MUED 261, 262 - BRASS TECHNIQUES AND METHODS (1, 1)

Class instruction in the performance and teaching of brass instruments for music education students. Prerequisite: fundamental ability on at least one brass instrument and permission of instructor. Offered as needed.

### MUED 271, 272 - WOODWIND TECHNIQUES AND METHODS (1, 1)

Class instruction in the performance and teaching of woodwind instruments for music education students. Prerequisite: fundamental ability on at least one woodwind instrument and permission of instructor. Offered as needed.

### MUED 281, 282 - STRING TECHNIQUES AND METHODS (1, 1)

Class instruction in the performance and teaching of string instruments for music education students. Prerequisite: fundamental ability on at least one string instrument and permission of instructor. Offered as needed.

### MUED 291, 292 - PERCUSSION TECHNIQUES AND METHODS (1, 1)

Class instruction in the performance and teaching of percussion instruments for music education students. Offered as needed.

### MUED 324 - ORGAN PEDAGOGY AND LITERATURE (3)

Study in the teaching of organ, including a survey of materials, repertoire, and techniques. Offered as needed.

### MUED 333 - PEDAGOGY AND LITERATURE: PIANO (3)

Study of the teaching of piano, including a survey of materials, repertoire, and techniques. Offered odd years.

**MUED 354 - VOCAL TECHNIQUES AND METHODS (3)**

Study of vocal production and instruction, including a survey of materials. Offered odd years.

**MUED 394 - MUSIC IN THE ELEMENTARY SCHOOL (3)**

An overview of objectives, procedures, and materials in music education for kindergarten through grade eight. For elementary education majors only.

**MUED 395 - ELEMENTARY SCHOOL MUSIC METHODS AND MATERIALS (3)**

A comprehensive study of objectives, procedures, and materials in music education for kindergarten through grade eight. Prerequisite: For music majors and minors or permission of instructor. Offered even years.

**MUED 396 - SECONDARY MUSIC METHODS (3)**

Study of objectives, procedures, and materials in music education for grades seven through twelve. Prerequisite: Permission of instructor. Offered odd years.

**MUHL - MUSIC HISTORY AND LITERATURE****MUHL 124 - INTRODUCTION TO MUSIC (4)**

An experiential survey course that focuses primarily on the Western European art music tradition and introduces the principal musical styles, genres, composers, and musicians. Explores the ways that music has both mirrored and shaped society, technology, and aesthetic values of its times. May not apply toward a music major.

**MUHL 134 - WORLD MUSIC (4)**

An overview of music from various traditions and cultures around the world, focusing on the settings, backgrounds, and meanings associated with these musical styles and genres. (Course fees apply.)

**MUHL 144 - INTRODUCTION TO AMERICAN POPULAR MUSIC (4)**

The history, genre, styles, songs, lyrics, and influences of American vernacular music in the 20<sup>th</sup> and 21<sup>st</sup> century, including the historical and cultural background that spawned these musical genres. Explores the ways that music has both mirrored and shaped society, technology, and aesthetic values. (Course fees apply.)

**MUHL 321, 322, 323 - HISTORY OF MUSIC (4, 4, 4)**

The history and literature of western music from antiquity through the twenty-first century. Prerequisites: MUCT 221, 222, 223; or permission of instructor. Required laboratory. Offered even years.

**MUHL 479 - DIRECTED RESEARCH/PROJECT (1-2; 6)**

As approved by the faculty, an alternative to MUPF 487 Senior Recital (0 credit), and three of the six required upper-division applied music credits in the B.A. degree in music. The credits must be distributed over at least three quarters.

## **MUPF - MUSIC PERFORMANCE**

### **ENSEMBLES**

Membership in the performance groups listed below is by audition or by invitation. Students who participate in an ensemble are required to register for either 0 or 1 credit. Graded S or NC for 0 credit. Graded A-F for 1 credit. These classes may be repeated for additional credit. NOTE: The term “organization” is used in this bulletin to designate a primary departmental music ensemble that fulfills the organization requirement for music majors and minors. Primary music organizations are MUPF 215/ MUPF 315 University Singers, MUPF 255/ MUPF 355 Wind Symphony, MUPF 256/ MUPF 356 Brass/Percussion, and MUPF 266/ MUPF 366 Symphony Orchestra.

In addition to meeting the university upper division enrollment policy, music majors and minors must have junior for upper division status to enroll in upper division ensembles and non-majors and minors must audition for UD ensembles (i.e. permission by instructor).

#### **MUPF 215 - UNIVERSITY SINGERS (0-1)**

A large choir that performs major choral works and sings for church services. (Course fees apply when taken for zero credit.)

#### **MUPF 245 - I CANTORI (0-1)**

A select touring choral group that performs sacred and secular repertoire as well as dramatic musical works from all eras. Participation in MUPF 215 University Singers required. (Course fees apply.)

#### **MUPF 255 - WIND SYMPHONY (0-1)**

A traditional concert band that performs locally on a quarterly basis and occasionally tours. (Course fees apply when taken for zero credit.)

#### **MUPF 256 - BRASS/PERCUSSION (0-1)**

A traditional concert band that performs locally on a quarterly basis and occasionally tours. (Course fees apply when taken for zero credit.)

#### **MUPF 266 - SYMPHONY ORCHESTRA (0-1)**

An organization that performs representative orchestral literature from the Baroque era to the present. (Course fees apply when taken for zero credit.)

#### **MUPF 276 - ACCOMPANYING PRACTICUM (1; 3)**

Supervised accompanying activities, including discussion of ensemble and technique as appropriate. Prerequisite: permission of instructor.

#### **MUPF 283 - BIG BAND (0-1)**

A traditional big band, including vocalists, that performs a variety of musical styles including jazz and popular music. (Course fees apply when taken for zero credit.)

#### **MUPF 284 - STEEL BAND (0-1)**

A Caribbean style steel band that performs music representative of Caribbean, other world music styles, and classical music in sacred and secular contexts. (Course fees apply when taken for zero credit.)

**MUPF 285 - ENSEMBLE (0-1)**

Vocal or instrumental duos, trios, quartets, or larger groups under the direction of a music department faculty member. (Course fees apply when taken for zero credit.)

**MUPF 315 - UNIVERSITY SINGERS (0-1)**

A large choir that performs major choral works and sings for church services.

(Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit in MUPF 215.

**MUPF 345 - I CANTORI (0-1)**

A select touring choral group that performs sacred and secular repertoire as well as dramatic musical works from all eras. Participation in MUPF 215 or 315 University Singers required. (Course fees apply.) If taken for 1 credit, prerequisite: a minimum of 1 credit of MUPF 245.

**MUPF 355 - WIND SYMPHONY (0-1)**

A traditional concert band that performs locally on a quarterly basis and occasionally tours. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit of MUPF 255.

**MUPF 356 - BRASS/PERCUSSION (0-1)**

A traditional concert band that performs locally on a quarterly basis and occasionally tours. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit of MUPF 256.

**MUPF 366 - SYMPHONY ORCHESTRA (0-1)**

An organization that performs representative orchestral literature from the Baroque era to the present. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit of MUPF 266.

**MUPF 383 - BIG BAND (0-1)**

A traditional big band, including vocalists, that performs a variety of musical styles including jazz and popular music. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit in MUPF 283.

**MUPF 384 - STEEL BAND (0-1)**

A Caribbean style steel band that performs music representative of Caribbean, other world music styles, and classical music in sacred and secular contexts. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit in MUPF 284.

**MUPF 385 - ENSEMBLE (0-1)**

Vocal or instrumental duos, trios, quartets, or larger groups under the direction of a music department faculty member. (Course fees apply when taken for zero credit.) If taken for 1 credit, prerequisite: a minimum of 1 credit in MUPF 285.

**CONDUCTING COURSES****MUPF 361 - BASIC CONDUCTING (2)**

Study of basic techniques and the art of conducting musical ensembles of all kinds. Offered even years.



## COURSES

### MUPF 362 - INSTRUMENTAL CONDUCTING TECHNIQUES AND MATERIALS (3)

Study of advanced techniques, rehearsal procedures, repertoire, program building, and administration. Prerequisite: MUPF 361 or permission of instructor. Offered even years.

### MUPF 363- CHORAL CONDUCTING TECHNIQUES AND MATERIALS (3)

Study of advanced techniques, rehearsal procedures, repertoire, program building, and administration. Prerequisite: MUPF 361 or permission of instructor. Offered even years.

### MUPF 365 - CONDUCTING PRACTICUM (1-3; 3)

Conducting activities and projects approved by a relevant conducting teacher in consultation with the department chair. Prerequisites: MUPF 361, 362, or 363 and permission of instructor.

## PERFORMANCE STUDIES COURSES (MUSIC LESSONS)

One to four credit hours of performance studies may be earned each quarter. Nine 30-minute lessons per quarter and daily practice totaling five clock hours a week corresponds to one credit hour. Nine 60-minute lessons per quarter and daily practice will earn two to four hours of credit. May be repeated for additional credit.

### MUPF 117 - CLASS INSTRUCTION (1)

Class instruction in general or special areas of interest. Offered as needed.

### MUPF 118 - INTRODUCTION TO GUITAR (2; 4)

Development of basic guitar skills and an introduction to the fundamental principles of music: melody, harmony, and rhythm. Taught in a group setting. No previous music experience necessary. A maximum of 2 credits may apply toward music major or minor requirements. (Course fees apply.)

### MUPF 127 - APPLIED MUSIC (1-2)

Introductory study in an instrument or voice. Subject to approval of music faculty, up to three hours may be used to satisfy requirements for the primary performance area in a music major or minor.

### MUPF 217 - APPLIED MUSIC (1-2)

Study in an instrument or voice; satisfies credit requirements for minor performance studies. Prerequisite: approval of music faculty by examination.

### MUPF 227 - APPLIED MUSIC (1-4)

Study in an instrument or voice; satisfies credit requirements for performance studies in the B.A. and B.Mus in Music Education degrees. Prerequisite: approval of music faculty by examination.

### MUPF 237 - APPLIED MUSIC (1-4)

Study in instrument or voice; satisfies credit requirements for performance studies in the B.Mus. degree. Prerequisite approval of music faculty by examination.

### MUPF 317 - APPLIED MUSIC (1-2)

Study in instrument or voice; satisfies credit requirements for minor performance studies. Prerequisites: MUPF 217 or 227 and approval of music faculty by examination.

**MUPF 351 - ADVANCED KEYBOARD SKILLS (1)**

Development of certain practical skills that keyboard players may be called upon to exhibit in professional life such as transposition, score reading, reading from a figured bass, and simple improvisation. Required of students pursuing a B.Mus. degree in keyboard performance. Prerequisite: permission of instructor.

**MUPF 387 - JUNIOR RECITAL (0)**

Preparation of repertoire for the junior recital in consultation with the student's applied lesson teacher. Required for the B.Mus in Music Performance. Graded S or NC.

**MUPF 427 - APPLIED MUSIC (1-4)**

Advanced study in an instrument or voice; satisfies credit requirements for major and minor performance studies in the B.A. degree and in the B.Mus. degree in Music Education. Prerequisites: MUPF 227, completion of piano proficiency requirements, and approval of music faculty through examination.

**MUPF 437 - APPLIED MUSIC (1-4)**

Study in an instrument or voice; satisfies credit requirements for performance studies in the B.Mus. degree in Music Performance. Prerequisites: MUPF 237, completion of piano proficiency requirements, and approval of music faculty by examination.

**MUPF 486 - SENIOR RECITAL: MUSIC MINOR (0)**

Preparation of repertoire for the senior recital in consultation with the student's applied lesson teacher. Fulfills requirements for the minor in music. Graded S or NC.

**MUPF 487 - SENIOR RECITAL: MUSIC MAJOR (0)**

Preparation of repertoire for the senior recital as required for the B.A., B.Mus. in Music Performance, and B.Mus. in Music Education degrees, in consultation with the student's applied lesson teacher. Graded S or NC.

**NRSG - NURSING****NRSG 100 - DIRECTED NURSING STUDIES (1; 4)**

Directed remedial studies for identified deficiencies. Graded S or NC. Credits do not apply toward graduation or the nursing major.

**NRSG 210 - INTRODUCTION TO NURSING (3)**

Introduction to professional nursing practice to provide a basis for use of the nursing process and therapeutic communication. Includes introduction to the QSEN concepts and concepts integrated into the baccalaureate nursing curriculum. Key topics include historical perspectives, ethical/legal principles, cultural care, patient teaching, current trends, health and wellness, and the health care delivery system.

**NRSG 211 - FUNDAMENTALS OF NURSING (5)**

Emphasis on developing beginning and intermediate skills and knowledge of the nursing process. Two credit hours of lab experiences in the skills lab included. Prerequisites: BIOL 121, 122, 123, PSYC 130, SOCI 204; HLTH 220. Prerequisite or corequisite: NRSG 210. (Course fees apply.)

## COURSES

### NRSG 211P - FUNDAMENTALS OF NURSING (5)

Emphasis on developing beginning and intermediate skills and knowledge of the nursing process. Two credit hours of clinical lab includes both skills lab experiences and patient care experiences in a health care facility. This course is taught in an accelerated format over the summer on the Portland campus only. Prerequisites: Acceptance to the summer entry for the School of Nursing including 85 credits that apply to the nursing major. Corequisites: NRSG 210 and NRSG 213P. (Course fees apply.)

### NRSG 212 - HEALTH ASSESSMENT AND THE NURSING PROCESS (4)

Emphasis on the nursing process and physical assessment of children and adults. Two credit hours of clinical lab experience which includes learning experiences in the skills lab and direct patient care. Prerequisite: NRSG 211. Prerequisite or corequisite: CHEM 105. (Course fees apply.)

### NRSG 212P - HEALTH ASSESSMENT AND THE NURSING PROCESS (4)

Emphasis on the nursing process and physical assessment of children and adults. Two credit hours of clinical lab experience which includes learning experiences in the skills lab and direct patient care. This course is taught in an accelerated format over the summer on the Portland campus only. Prerequisite: NRSG 211P. Corequisites: NRSG 210 and NRSG 213P. (Course fees apply.)

### NRSG 213 - PHARMACOLOGY IN NURSING (4)

Introduction to the major classifications of therapeutic medications. Two credit hours of clinical experience includes the administration of medications in a health care facility. Prerequisite: NRSG 212. Prerequisite or corequisite: BIOL 222. (Course fees apply.)

### NRSG 213P - PHARMACOLOGY IN NURSING (4)

Introduction to the major classifications of therapeutic medications. Two credit hours of clinical experience includes the administration of medications in the skills lab and in a health care facility. This course is taught in an accelerated format over the summer on the Portland campus only. Prerequisite: Acceptance to the summer entry for the School of Nursing including 85 credits that apply to the nursing major. Corequisite: NRSG 210 and NRSG 211P. (Course fees apply.)

### NRSG 233 - TOPICS IN NURSING (2)

Study of current topics of interest in professional nursing. May include papers or other projects. Graded S or NC. Offered as needed.

### NRSG 234 - MEDICAL TERMINOLOGY (2)

Introduction to the medical terminology used in any health career. Study of the basic rules for building, analyzing and pronouncing medical words. Information about structure, function, anatomy, physiology, pathology, diagnostic tests and treatments is organized utilizing a body systems approach.

### NRSG 235 - TOPICS IN NURSING (2)

Study of current topics of interest in professional nursing. May include papers, tests, or other projects. Offered as needed.

### NRSG 290 - LPN VALIDATION (15)

Validation of prior nursing education for licensed practical nurses. Based on successful completion of validation testing, LPN's with a current license in any

state are granted 15 lower division nursing credits and are exempt from taking NRSG 210, 211, 212, and 213.

#### NRSG 291 - RN VALIDATION - PART I (15)

Validation of prior nursing education for registered nurses. Based on successful completion of validation testing, RN's with current license in the state of Oregon are granted 15 lower division nursing credits and are exempt from NRSG 210, 211, 212, and 213. NRSG 291 and NRSG 391 are both part of the same validation process.

#### NRSG 310 - TRANSITIONS (1)

Facilitates the transition of students who transfer into the nursing major at WWU as LPNs, RNs or transfer students from another nursing program. Focus is on processes and concepts unique to the WWU nursing curriculum and review of nursing skills necessary to make a successful transition into the program.

#### NRSG 321 - NURSING OF THE ACUTELY ILL ADULT (8)

Nursing care of adult clients experiencing alterations in cardiovascular, respiratory, genitourinary, gastrointestinal, gynecological, or biliary function in an acute care facility with emphasis on use of the nursing process. Four credit hours of clinical lab included. Prerequisite: NRSG 213. Prerequisite or Corequisite: NRSG 354. (Course fees apply.)

#### NRSG 325 - RESEARCH IN NURSING (4)

Research methods, principles and techniques as applied to nursing scientific inquiry. The research process is systematically introduced with emphasis on its support of evidence-based practice and quality improvement in nursing. Reading and critiquing current nursing and health related research is a central activity. Students are assisted in the development of a realistic research proposal. Prerequisites: MATH 106 or equivalent; ENGL 223.

#### NRSG 331 - MENTAL HEALTH NURSING (8)

Nursing care of clients experiencing alterations in psychosocial behavior. Focus is on the predisposing factors, assessment, and evidenced-based nursing care in collaboration with the interdisciplinary team. Four credit hours of clinical lab included. Prerequisite: NRSG 213. Prerequisite or corequisite: NRSG 354. (Course fees apply.)

#### NRSG 344 - NURSING OF THE FAMILY (8)

Emphasis is on childbearing and childrearing with focus on the child from conception through adolescence. Application of concepts of growth and development of the child and family is included. Four credit hours of clinical lab includes hospital, community, and outpatient settings. Prerequisite: NRSG 213. Prerequisite or corequisite: NRSG 354; PSYC 215. (Course fees apply.)

#### NRSG 354 - PATHOPHYSIOLOGY (5)

Emphasizes understanding diseases of body systems as a basis for nursing assessment and intervention. Prerequisites: BIOL 121, 122, 123; BIOL 222; CHEM 105; NRSG 213.

#### NRSG 391 - RN VALIDATION - PART II (32)

Validation of prior nursing education for registered nurses. Based on successful completion of validation testing, RN's with a current license in the state of Oregon are granted 32 upper division nursing credits and are exempt from NRSG

## COURSES

321, 331, 344, 354, and 450. NRSG 391 and NRSG 291 are both part of the same validation process.

### NRSG 421 - NURSING OF THE CHRONICALLY ILL (8)

Nursing care of clients experiencing long term alterations in health. Emphasis on concepts related to chronic illness applied in a variety of clinical settings to clients of different ages. Four credit hours of clinical lab included. Prerequisites: NRSG 321, 325, 331, 344, 354. (Course fees apply.)

### NRSG 431 - NURSING MANAGEMENT (3)

Principles of leadership and management applied to health care organizations and nursing. Prerequisites: NRSG 321, 331, 344, 354.

### NRSG 433 - TOPICS IN NURSING (2)

Study of current topics of interest in professional nursing. May include papers or other projects. Graded S or NC. Offered as needed. (Course fees may apply.)

### NRSG 435 - TOPICS IN NURSING (2)

Study of current topics of interest in professional nursing. May include papers, tests, or other projects. Offered as needed. (Course fees may apply.)

### NRSG 437 - ADVANCED ACUTE NURSING (8)

Advanced nursing care of clients in an acute care setting who are experiencing complex multi-system health problems. Four credit hours of clinical lab included. Prerequisites: NRSG 321, 331, 344, 354. (Course fees apply.)

### NRSG 441 - COMMUNITY HEALTH NURSING (8)

Study and application of the nursing process to provide care for communities, populations, and subpopulations at risk within the community. Students explore the various roles of the community health nurse working to promote health for diverse groups across the lifespan. Four credit hours of clinical lab included. Prerequisites: NRSG 321, 325, 331, 344, 354. (Course fees apply.)

### NRSG 445 - ISSUES AND TRENDS IN NURSING (3)

Discussion of issues and trends affecting the practice of professional nursing and health care delivery.

### NRSG 450 - NCLEX REVIEW (3)

Provides a systematic review of nursing material for the NCLEX-RN using a nationally known instructional program. Includes practice on NCLEX style test questions. Designed to be taken during the last quarter of the senior year. (Course fees apply.)

### NRSG 475 - INTERPRETING LAB VALUES (2)

Introduction to the basic interpretation of a variety of clinical laboratory studies and diagnostic tests within the framework of the nursing process. Prerequisites: 300 level nursing courses.

### NRSG 490 - NURSING PRACTICUM (2-4)

Individual study arrangement involving students, faculty, and health care agencies to gain additional clinical experience in an area of special interest. Options include global or local region health experiences. Prerequisite: Senior standing with a WWU junior year GPA (nursing and non-nursing courses) of 3.25 or higher, or permission of the department. Other limitations apply - see the School of Nursing Handbook for details. Only one local region practicum per student is allowed. Graded S or NC.

**NRSG 494 - INTERNSHIP (0-4; 4)**

Individual contract arrangement involving students, faculty, and cooperating health care agencies to gain practical nursing experience. Open to international students only. Prerequisite: NRSG 213 and permission of the nursing faculty. Graded S or NC.

**PEAC - PHYSICAL ACTIVITY****PEAC 107-190 PHYSICAL ACTIVITY COURSES (1)**

* PEAC 107	Lifeguard Training	* PEAC 157	Backpacking
PEAC 113	Beginning Swimming	PEAC 159	Cycling
PEAC 114	Intermediate Swimming	* PEAC 161	Rock Climbing
PEAC 115	Wakeboarding/ Water Activities	* PEAC 164	Downhill Skiing/ Snowboarding
PEAC 120P	Strength and Conditioning I	PEAC 171	Basketball
PEAC 121P	Strength and Conditioning II	PEAC 173	Flagball
PEAC 122	Strength Training	PEAC 174	Soccer
PEAC 123	Circuit Weight Training	PEAC 175	Softball
PEAC 127	Tumbling	PEAC 177	Volleyball
PEAC 128	Jogging	§† PEAC 182	Athletics: Golf
PEAC 133	Aerobic Rhythm	§† PEAC 183	Athletics: Soccer
PEAC 142	Badminton	§† PEAC 185	Athletics: Volleyball
* PEAC 144	Golf	§† PEAC 186	Athletics: Basketball
PEAC 146	Tennis	§† PEAC 187	Athletics: Cross Country
PEAC 151	Racquetball		
PEAC 155	Acrobatic Gymnastics		

\* Course fees apply. See the Financial Bulletin.

§ Graded S or NC

† Team membership required to enroll.

**PETH - PHYSICAL EDUCATION THEORY****PETH 150 - COACHING SPORTS ACTIVITIES: STRENGTH CONDITIONING (2)**

Study of materials, methods, strategies, and teaching progressions for coaching strength conditioning activities. Offered even years.

**PETH 151 - COACHING SPORTS ACTIVITIES: BASKETBALL (2)**

Study of materials, methods, strategies, and teaching progressions for coaching basketball. Offered even years.

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### PETH 152 - COACHING SPORTS ACTIVITIES: VOLLEYBALL (2)

Study of materials, methods, strategies, and teaching progressions for coaching volleyball. Offered even years.

### PETH 205 - WATER SAFETY INSTRUCTOR'S COURSE (2)

Preparation for meeting the requirements of the National Red Cross Certificate to teach swimming and supervise swimming areas. Prerequisite: PEAC 107. (Course fees apply.)

### PETH 214 - INTRODUCTION TO PHYSICAL EDUCATION AND RECREATION (2)

Introduction and orientation to the field of physical education; includes survey of the philosophy and objectives, as well as the professional opportunities and responsibilities, of the physical educator.

### PETH 225 - PREVENTION OF INJURIES (2)

Methods of prevention, evaluation, recognition, and immediate care and rehabilitation of injuries. Lecture and laboratory. (Course fees apply.)

### PETH 250- COACHING SPORTS ACTIVITIES: SOCCER (2)

Study of materials, methods, strategies, and teaching progressions for coaching soccer. Offered odd years.

### PETH 251 - COACHING SPORTS ACTIVITIES: GYMNASTICS (2)

Study of materials, methods, strategies, and teaching progressions for coaching gymnastics. Offered odd years.

### PETH 252 - COACHING SPORTS ACTIVITIES: TENNIS/GOLF (2)

Study of materials, methods, strategies, and teaching progressions for coaching tennis and golf. Offered odd years.

### PETH 261, 262 - OFFICIATING OF SPORTS ACTIVITIES (2, 2)

Introduction to officiating in a variety of activities covered in the service areas; students are required to officiate in the intramural activities sponsored by the department. Lecture and laboratory.

### PETH 278 - PROGRAMMING INTRAMURAL AND RECREATIONAL ACTIVITIES (2)

Study of the mechanics of programming the intramural and recreational activities in the school and community.

### PETH 324 - ADAPTED PHYSICAL EDUCATION AND RECREATION (3)

Study of common abnormalities found in students which may be corrected or helped by proper exercise; considers extent and limitations of the teacher's responsibility in this phase of education. Lecture and laboratory.

### PETH 325 - KINESIOLOGY (4)

Study of joint and muscular mechanism action of muscles involved in fundamental movements; effect of gravity and other forces on motion. Lecture and laboratory. Strongly recommended: BIOL 121, 122, 123.

**PETH 350 - INTERNSHIP PLACEMENT ORIENTATION (OR HLTH 350) (0)**  
An internship placement orientation seminar intended to make students aware of agency possibilities, application and evaluation procedures, contracts and the internship learning process. Graded S or NC.

**PETH 360 - ADVANCED PRINCIPLES OF COACHING (2)**  
Study of the principles and concepts of coaching sports activities. Topics include sport psychology, ethics, group dynamics, and leadership.

**PETH 366 - COACHING PRACTICUM (1)**  
Directed coaching experiences and activities including scouting/player evaluation, practice planning, and event management. Prerequisite: PETH 360.

**PETH 395 - TEACHING SECONDARY HEALTH AND PHYSICAL EDUCATION (3)**  
Study of the methods and techniques of teaching health and physical education in the secondary school, includes individual as well as group activities; students are required to observe and demonstrate in class. Offered even years.

**PETH 425 - MOTOR LEARNING (4)**  
Analysis of selected variables which influence the learning of motor skills; includes research methods in physical education. Requires a research paper. Lecture and laboratory. Prerequisite: MATH 106.

**PETH 426 - PHYSIOLOGY OF EXERCISE (4)**  
Study of the physiological basis for motor fitness, factors limiting human performance in athletic competition, pertinent research from the sports medicine literature, and laboratory techniques used in analysis of motor fitness. Lecture and laboratory. Prerequisites: BIOL 121, 122, 123.

**PETH 427 - FITNESS EVALUATION TECHNIQUES (3)**  
The primary focus is to develop and enhance the knowledge and practical skills in health and fitness evaluation. Specific emphasis will be directed toward evaluation techniques of exercise, physiology, nutrition, weight control, exercise programming, health appraisal and fitness, lecture and laboratory. Preparation for meeting ACSM Health/Fitness Instructor Certification. Prerequisites: BIOL 121, 122, 123 PETH 426 or permission of instructor.

**PETH 473 - TEACHING ELEMENTARY HEALTH AND PHYSICAL EDUCATION (3)**  
Introduction to the planning of the curriculum in the elementary school and the organization of a balanced health and physical education program. Requires participation in the elementary school physical education program.

**PETH 479 - DIRECTED RESEARCH/PROJECT (1-3; 6)**  
Additional research or study carried out under the direction of an assigned faculty member.

**PETH 484 - ADMINISTRATION OF HEALTH, PHYSICAL EDUCATION, AND RECREATION (3)**  
Study of the techniques of scheduling, organizing, and planning suitable activities; includes purchasing of supplies and equipment, planning and use of facilities, and comparative cost and budgeting for physical education and recreation programs.



## COURSES

### PETH 490 - INTERNSHIP IN FITNESS MANAGEMENT (12)

Supervised field experience in an approved fitness agency. Practical experience and application of responsibilities necessary for practicing fitness management. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of the Bulletin. Prerequisite: Senior standing or departmental approval; HLTH 350, 427, 475; HLTH 217 or current certification in First Aid and CPR. Graded S or NC.

### PETH 493 - HISTORY AND PHILOSOPHY OF PHYSICAL EDUCATION (3)

Study of Physical Education and Recreation from earliest times to the present. Emphasis on the social and religious conditions which determine the character of physical education in a given society. Offered odd years.

### PETH 496 - SEMINAR (1)

Presentation and discussion of current topics in Health and Physical Education. Prerequisite: Senior standing in Physical Education or permission of instructor.

## PHIL - PHILOSOPHY

### PHIL 204 - ESSENTIALS OF CRITICAL REASONING (4)

Concepts and procedures basic to effective thinking including an introduction to the nature of formal argumentation, with practice constructing logically sound arguments as well as analyzing those of others. Prerequisite: ENGL 121, 122, or permission of instructor.

### PHIL 205 - INTRODUCTION TO PHILOSOPHY (4)

Selected writings from classical and contemporary philosophy.

### PHIL 305 - MORAL PHILOSOPHY (4)

Examines the relativist, objectivist, and absolutist moral theories of classical and contemporary philosophers. Prerequisites: PHIL 204 or 205, or permission of the instructor. Offered odd years.

### PHIL 310 - PHILOSOPHY AND THE BIBLE (4)

Designed to compare biblical themes with philosophical themes, including aesthetics, epistemology, metaphysics, ethics, theology, and politics. Philosophical themes are juxtaposed with Biblical accounts of creation, knowledge, revelation, morality, and politics. Includes the philosophical problem of evil in relationship to the book of Job, as well as storytelling for moral purposes in the parables of Jesus. Major philosophers include Kant, Hume, Nietzsche, Heidegger, Levinas, Kierkegaard, Descartes, Plato, and Aristotle. Prerequisite: PHIL 204 or 205, or permission of the instructor.

### PHIL 315 - TOPICS IN THE HISTORY OF PHILOSOPHY (OR HIST 315) (4)

Presents a topic in the history of philosophy (ancient, modern, 19th or 20th century) as selected by the instructor. Provides an in-depth examination of the work of one thinker or a group of thinkers (e.g., German idealism) from the given historical period. May be repeated for credit when topics vary. Prerequisite: PHIL 204 or 205, or permission of the instructor.

### PHIL 407 - PHILOSOPHY OF SCIENCE (4)

Contemporary issues in the philosophy of science. These include identifying a scientific theory, distinguishing science from pseudoscience, and considering the scope and limits of scientific knowledge as well as science's relationship with religion. Prerequisite: PHIL 204 or 205, or permission of the instructor.

**PHIL 410 - PHILOSOPHY OF EDUCATION (OR EDUC 410) (3)**

Study of educational thought and practice from a philosophical perspective: the aims, principles, and theories of education, with special reference to Christian schools.

Prerequisite: PHIL 204 or 205, or permission of the instructor.

**PHIL 411 - PHILOSOPHY OF LAW (4)**

Examines major views on the nature and justification of law and legal authority, with an emphasis on legal positivism and natural law theory. Legal formalism and legal realism (in both their classical and contemporary forms) are also studied as they relate to judicial decision making. These broad, major theories are then considered in relation to other legal and philosophical concepts such as rights, liberty, punishment, torture, and the relationship between law and morality.

Prerequisite: PHIL 204 or 205, or permission of the instructor.

**PHIL 412 - PHILOSOPHY OF RELIGION (OR RELT 412) (4)**

Study of religious thought and practice from a philosophical perspective; considers the arguments for the existence of God, the relationship of faith and reason, the use of religious language, and the problem of evil. See the History and Philosophy section of this bulletin. Prerequisite: PHIL 204 or 205, or permission of the instructor.

**PHIL 440 - HISTORY OF SOCIAL AND POLITICAL PHILOSOPHY (OR HIST 440) (4)**

Examines major philosophical views on the origin and justification of political obligation. Includes readings in political theory from classical philosophers such as Plato, Aristotle, and Augustine from the classical period; Kant, Rousseau, Hobbes, Locke, Spinoza, and Mill from the modern period; and Rawls, Mills, and Pateman from the twentieth century. Topics will include the origin of the state, the authority of the state over the individual, and the consent of the governed.

Prerequisite: PHIL 204 or 205, or permission of the instructor. Offered odd years.

**PHIL 461 - AFRICAN-AMERICAN PHILOSOPHY (4)**

Presents perspectives in African-American Philosophy as it relates to race and contemporary American liberalism critical race theory, and black existentialism. Students will be exposed to a variety of philosophical issues in political philosophy, moral philosophy, philosophical theology, philosophy of law, and phenomenology/existentialism. Prerequisite: PHIL 204 or 205, or permission of the instructor. Offered even years.

**PHIL 496 - SEMINAR (4)**

In-depth study of specific areas of philosophical research. Prerequisite: PHIL 204 or 205, or permission of the instructor.

**PHTO - PHOTOGRAPHY****PHTO 156 - PRINCIPLES OF PHOTOGRAPHY (3)**

Introduction to universal, creative photographic concepts. Study of color and composition emphasized. Students will learn to control camera settings to match pre-visualized image. Emphasis on natural light photography. Operational six mega-pixel or greater DSLR camera required. Some rental cameras available. Two lectures and one laboratory per week. (Course fees apply.)

**PHTO 255 - FILM PHOTOGRAPHY (3)**

Creative exploration of film based photographic processes while building technical and aesthetic skills. Includes film and paper selection, selective

## COURSES

coloration, retouching, archiving and finishing through chemical toning and other techniques. Two lectures and one lab per week. Working 35mm film SLR camera required. Rental cameras available. Offered odd years. (Course fees apply.)

### PHTO 256 - INTERMEDIATE DIGITAL PHOTOGRAPHY (3)

Various practices of creating quality images with a digital camera. Digital camera selection and use, Processing RAW images and editing will be covered. Common practices for storing and retrieval, using images in different media and digital manipulation. Application of technique of "seeing" the image before capturing it. Making the proper adjustments for composition, lighting, and camera settings to achieve the desired results. On-camera and studio flash use are also covered. DSLR camera required. Rental cameras available. Prerequisite: PHTO 156. Offered even years. (Course fees apply.)

### PHTO 355 - ADVANCED PHOTOGRAPHY (4)

Advanced photographic techniques for silver-based and digital systems. Includes lighting, chemistry, photo accessories, printing, and processing of chromatic and monochromatic mediums. Emphasizes preparation and editing for presentation and publication. Two lectures and one laboratory per week. Prerequisite: PHTO 255. Offered even years. (Course fees apply.)

### PHTO 356 - ADVANCED DIGITAL PHOTOGRAPHY (4)

Advanced photographic techniques for digital systems. Includes lighting, photo accessories, and printing gallery-quality images. Emphasizes preparation and editing for presentation and publication of a themed project. Two lectures and one laboratory per week. DSLR camera required. Prerequisite: PHTO 156 and GRPH 136. Offered odd years. (Course fees apply.)

### PHTO 358 - PHOTOGRAPHIC ASSIGNMENTS (1-2; 3)

Individualized digital or traditional assignments, chosen in consultation with a graphics professor. Emphasis on work for commercial client, publication or public presentation. Prerequisite: PHTO 156.

### PHTO 456 - DIGITAL PHOTOGRAPHY AND IMAGING FOR EDUCATORS (2)

Covers basics of photography, imaging technology, compositional shooting practices, and technical aspects of digital photography. Emphasizing skills appropriate for elementary and secondary classes. Includes processing, filing, sizing, printing, and electronic distribution of images. Credit will not be allowed for both PHTO 256 and PHTO 456. Offered summer quarter only. (Course fees apply.)

## PHYS - PHYSICS

PHYS 251, PHYS 252, PHYS 253 or equivalent and MATH 281, MATH 282, MATH 283 are prerequisites for all courses numbered PHYS 300 or above.

### PHYS 151, 152 - PHYSICAL SCIENCE (3, 3)

An introductory course designed to introduce the fundamental concepts of physics, chemistry, earth science, and astronomy. Does not apply towards a major or minor. Credit will not be allowed for both PHYS 151, 152 and PHYS 201, 202. Corequisites: PHYS 154, 155.

**PHYS 154, 155 - PHYSICAL SCIENCE LAB (1, 1)**

Laboratory work integrated with PHYS 151, 152. Does not apply towards a major or minor. (Course fees apply.)

**PHYS 201, 202 - CONCEPTUAL PHYSICS (3, 3)**

Investigation, explanation, and understanding of the natural world using the ideas and concepts of physics. Topics include mechanics, properties of matter, heat, sound, electricity and magnetism, light, atomic and nuclear physics, relativity, and astrophysics. Does not apply towards a major or minor.

Corequisites: PHYS 204, 205. Credit will not be allowed for both PHYS 151, 152 and PHYS 201, 202.

**PHYS 204, 205 - CONCEPTUAL PHYSICS LABORATORY (1, 1)**

Laboratory work integrated with PHYS 201, 202. Does not apply towards a major or minor. (Course fees apply.)

**PHYS 211, 212, 213 - GENERAL PHYSICS (3, 3, 3)**

Introduction to mechanics, heat, sound, light, electricity, atomic and nuclear physics, elementary particles, quantum mechanics, and special relativity; designed primarily for non-physics majors to acquaint them with the ideas and methods of physics for possible application to problems in other areas of human endeavor.

Prerequisites: MATH 121, 122 or equivalent. Must be taken in sequence.

Corequisites: PHYS 214, 215, 216.

**PHYS 214, 215, 216 - GENERAL PHYSICS LABORATORY (1, 1, 1)**

Laboratory work integrated with PHYS 211, 212, 213. (Course fees apply.)

**PHYS 251, 252, 253 - PRINCIPLES OF PHYSICS (3, 3, 3)**

A calculus-based introduction to classical mechanics, waves, thermodynamics, electromagnetism, optics, relativity, and nuclear physics; designed to provide the science and engineering major with an intuitive and a mathematical understanding of fundamental physical concepts. Must be taken in sequence.

Prerequisites: MATH 181, 281. Corequisites: PHYS 254, 255, 256; MATH 282, 283.

**PHYS 254, 255, 256 - PRINCIPLES OF PHYSICS LABORATORY (1, 1, 1)**

Experimental exploration and study of the fundamental concepts of physics integrated with PHYS 251, 252, 253. (Course fees apply.)

**PHYS 307 - ASTROPHYSICS (4)**

An introduction to planetary systems, stars and stellar evolution, stellar remnants (white dwarfs, neutron stars, and black holes), galaxies and cosmology.

Prerequisites: PHYS 253 or the permission of instructor. Offered odd years.

**PHYS 310 - MODERN PHYSICS I (3)**

Study of the basic principles of quantum theory and their application to atomic and molecular properties. Corequisites: PHYS 314.

**PHYS 311 - MODERN PHYSICS II (3)**

Study of special relativity, elementary particles, and atomic nuclei. Prerequisite: PHYS 310. Corequisite: PHYS 316. Offered odd years.

**PHYS 312 - PHYSICAL ELECTRONICS (OR ENGR 312) (3)**

Study of the physical principles of solid state electronics devices. Prerequisites: MATH 283, PHYS 253, PHYS 310. Corequisite: PHYS 315.

## COURSES

### PHYS 313 - THERMODYNAMICS (4)

An introduction to thermodynamics using the tools of statistical mechanics. Topic include ideal gases; van der Waal gases; paramagnets; Einstein solids; work, energy, and heat; entropy; the laws of thermodynamics; and classical and quantum distributions. Applications include heat engines, phase transitions, blackbody radiation, and properties of solids. ENGR 332 can be counted toward a physics degree when paired with PHYS259: Independent Study: Thermodynamics for one credit.

### PHYS 314 - MODERN PHYSICS LABORATORY I (1)

Laboratory activities integrated with PHYS 310 Modern Physics. Corequisite: PHYS 310.

### PHYS 315 - PHYSICAL ELECTRONICS LABORATORY (OR ENGR 315) (1)

Experimental study of the physical principles of solid state electronics devices. Corequisite: PHYS 312. (Course fees apply.)

### PHYS 316 - MODERN PHYSICS LABORATORY II (1)

Laboratory activities integrated with PHYS 311 Modern Physics. Corequisite: PHYS 311. Offered odd years.

### PHYS 323 - MODERN OPTICS (3)

Study of optical phenomena and its technological applications beginning with their basis in Maxwell's equations. Includes the phenomena of reflection, refraction, dispersion, diffraction, interference, coherence, polarization, scattering, and their role in the operation of modern devices. Non-linear effects in materials, lasers, and device applications in fiber optics and photonics. Corequisite: PHYS 324. Offered even years.

### PHYS 324 - MODERN OPTICS LABORATORY (1)

Laboratory work integrated with the topics of PHYS 323. Corequisite: PHYS 323. Offered even years.

### PHYS 331 - INTRODUCTION TO NANOTECHNOLOGY (3)

Covers material properties and technology at the nanoscale. Applications involving material science, optical and semiconductor technology, and organic materials are introduced. Corequisite PHYS 332. Offered odd years.

### PHYS 332 - INTRODUCTION TO NANOTECHNOLOGY LABORATORY (1)

Laboratory work integrated with the topics of PHYS 331 emphasizing current industrial technologies. Corequisite: PHYS 331. Offered odd years.

### PHYS 340 - INTRODUCTION TO MATLAB AND MATHEMATICA (2)

An introduction to two of the prevailing computing tools used in physics, engineering, and other disciplines.

### PHYS 401, 402 - ELECTRICITY AND MAGNETISM (4, 4)

Study of electric and magnetic field theory, polarization, magnetization, solutions to the equations of Laplace and Poisson, Maxwell's equations, applications to plane waves, and dipole radiation. Offered even years.

### PHYS 414 - EXPERIMENTAL PHYSICS I (1)

An introduction to the tools of modern experimental physics. Topics include experiment design, instrumentation, data acquisition, and data analysis. Offered odd years.

**PHYS 415 - EXPERIMENTAL PHYSICS II (1)**

An introduction to the tools of modern experimental physics. Topics include experiment design, instrumentation, data acquisition, and data analysis. Offered odd years.

**PHYS 419 - GRADUATE REVIEW (1)**

An integrated review of the main concepts and problems of lower and upper-division physics. The review prepares students for taking the Physics Subject Test of the Graduate Record Exam during their senior year.

**PHYS 420, 421 - CLASSICAL MECHANICS (3, 3)**

Study of kinematics and dynamics of particles and rigid bodies, harmonic and orbital motion, using the methods of Newton, Lagrange, and Hamilton. Offered even years.

**PHYS 422, 423 - QUANTUM MECHANICS (3, 3)**

Study of the experimental and theoretical foundations of modern atomic and sub-atomic physics. Topics include wave mechanics, matrix mechanics, perturbation theory, and particle physics. Offered odd years.

**PHYS 435 - MATHEMATICAL PHYSICS (OR MATH 435) (4)**

In-depth study of the mathematical foundations of physics and their applications to physical problems. Particular attention is paid to the theory of linear vector spaces in developing tensor analysis group theory and Hilbert Space theory. This course is recommended for students planning to attend graduate school in physics, or having a strong interest in the applications of mathematics to the physical world. Offered odd years.

**PHYS 470 - BIOPHYSICS (OR BIOL 470) (4)**

Study of the structure and function of biological systems from the perspective of the physical sciences. Prerequisites: BIOL 143; PHYS 213 or PHYS 253; MATH 131 or MATH 181 or permission of instructor. Offered even years.

**PLSC - POLITICAL SCIENCE****PLSC 224 - AMERICAN GOVERNMENT (4)**

The principles, organization, and development of American national, state, and local government.

**PRDN - PRODUCT DESIGN****PRDN 120 - MODELS AND PROTOTYPES (3)**

In a studio and laboratory environment, students will gain experience with a variety of hand tools, materials and techniques, to develop scale models. Students will learn to construct study models using appropriate materials and learn to use the model to evaluate and communicate product design concepts. Prerequisite or co-requisite: TECH 220 or permission of instructor. (Course fees apply.)

**PRDN 130 - 3-D DESIGN I (3)**

Introduction to 3-D modeling using surface modeling software. Course emphasis is on design intent, generation and manipulation of surfaces, addition of and modification of basic materials and texture maps, and output of finished rendered images in formats compatible with other graphic software. Prerequisite: DSGN 121. (Course fees apply.)

## COURSES

### PRDN 230 - 3-D DESIGN II (3)

Continued study of 3-D modeling using parametric solid-modeling software. This course emphasizes the editing of solid-modeling features, importing/exporting of design information, assembly modeling and graphic output techniques.

Prerequisite: PRDN 130. (Course fees apply.)

### PRDN 330 - 3-D DESIGN III (3)

This course explores the use of rendering software. Emphasis is on the integration and generation of images created with software used in GRPH 136, PRDN 130, PRDN 230 and others, to make photo realistic rendered images, appropriate for printed and virtual presentations. Prerequisite: PRDN 230. (Course fees apply.)

### PRDN 345 - ENVIRONMENT DESIGN (OR GRPH 345) (4)

Application of design thinking and problem solving skills with special attention given to the location or place. Focus on placemaking and identity where designers create experiences that connect people to the place through research, ideation, installation, user observation, testing and assessment. Prerequisite: PRDN 210. (Course fees apply.)

### PRDN 210, 310 410 - PRODUCT DESIGN (4, 4, 4)

Application of a number of problem-solving techniques and procedures related to product design. Students are encouraged to use innovative techniques to achieve workable solutions to selected design problems for team and special projects.

Prerequisite: DSGN 111 or permission of instructor. (Course fees apply.)

### PRDN 411 - SENIOR PROJECT STUDIO (4)

Capstone Product Design experience to prepare the student for TECH 499, Senior Project. Each student is required to conduct an approved project with appropriate research, analysis, and design content. The scope of the project covers the project life cycle from proposal to final presentation accomplished in TECH 499. Prerequisites: PRDN 210, 310, 410, and senior standing in Product Design or permission of instructor. (Course fees apply.)

## PREL - PUBLIC RELATIONS

### PREL 333 - STRATEGIES FOR FUNDRAISING (OR MKTG 333) (4)

Study of the philosophy, role, organization, and strategies of institutional development and fund raising. Includes consideration of annual funds, capital campaigns, special events, and direct mail.

### PREL 350 - WRITING FOR PUBLIC RELATIONS (3)

An application of news writing and public relations principles in the nonprofit sector. Course includes preparing press releases and in-depth analysis of public information strategies, crisis management, and special event planning and press relations. Prerequisite: JOUR 245.

### PREL 481 - PUBLIC RELATIONS (OR MKTG 481) (4)

An overview of public relations from the perspectives of business and communication; includes history, theory, and hands-on examples. Covers the basics of public relations writing and analyses a firm's public relations in detail.

## **PSYC - PSYCHOLOGY**

### **PSYC 120 - INTRODUCTION TO THE PSYCHOLOGY MAJOR (0)**

A required seminar offering practical information regarding taking Psychology as a major. Topics include possible career options, strategies to excel as a major, and tips for professional conduct. Graded S or NC.

### **PSYC 130 - GENERAL PSYCHOLOGY (4)**

Survey emphasizing the scientific bases of psychological investigation. Introduction to the fundamental vocabulary, methodologies, established facts, and sound principles of psychology. Credit will not be allowed for both PSYC 130 and PSYC 140. (Course fees apply.)

### **PSYC 140 - INTRODUCTION TO PSYCHOLOGY: SOCIAL FOUNDATIONS (4)**

An introduction to the scientific study of behavioral processes and mental states. The course includes an overview of several psychology topics including historical information, research methods, human development, personality, social psychology, stress, and health, psychological disorders, and treatment. Credit will not be allowed for both PSYC 130 and PSYC 140.

### **PSYC 141 - INTRODUCTION TO PSYCHOLOGY: BIOLOGICAL FOUNDATIONS (4)**

An exploration of the scientific study of basic behavioral processes and mental states. The course includes an overview of issues in psychology related to neuroscience, sensation and perceptions, consciousness, memory, learning, emotion and motivation, language, thinking, and intelligence.

### **PSYC 215 - DEVELOPMENTAL PSYCHOLOGY (4)**

An overview of the individual development across the lifespan. Emphasis is placed on biosocial, cognitive, and psychosocial development of the individual. (Course fees apply.)

### **PSYC 217 - PSYCHOLOGY OF LEARNING AND DEVELOPMENT (4)**

An introduction to the theories of child and adolescent development and learning. Covers psychological theories of human development from early childhood through the adolescent years, theories of learning and motivation, concepts of diversity, and their application to educational practice.

### **PSYC 225 - MARRIAGE AND FAMILY LIFE (OR SOCI 225) (2)**

Study of the physical, economic, and psychological adjustments necessary for happy marriage and parenthood; stresses Christian philosophy and principles; staff members and guest speakers will lecture and lead discussions.

### **PSYC 247 - INTRODUCTION TO FORENSIC PSYCHOLOGY (4)**

This course is designed to introduce the student to forensic psychology in a social psychology context. It includes interactive components of law and law enforcement, an exploration of the criminal mind, investigation techniques, eyewitnesses and criminal profiling. Offered even years.

### **PSYC 266 - LEARNING AND BEHAVIOR (3)**

Basic learning phenomena in animals and humans, including classical and operant conditioning and more complex learning. The application of these



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phenomena in human and animal behavior change is also addressed. Emphasis will be placed on behavioral approaches. Prerequisite: PSYC 130 or PSYC 140 and 141. Offered even years.

### PSYC 278 - APPLIED PSYCHOLOGICAL RESEARCH (1)

The student will work with a departmental advisor on research activities such as literature search, experimental design, data collection, data analysis, and preparation of written or presentation materials. Graded S or NC.

### PSYC 344 - SOCIAL PSYCHOLOGY (4)

The dynamics of social interaction and interpersonal behavior with application to contemporary society. Prerequisite: PSYC 130 or PSYC 140 and 141 or permission of instructor.

### PSYC 350 - LANGUAGE DEVELOPMENT IN YOUNG CHILDREN (OR EDUC 350) (3)

Study of current research-based theories, methods, and strategies needed to effectively teach and support early literacy from birth through beginning reading. Prerequisite: PSYC 215 or PSYC 217. Field experience required.

### PSYC 366 - THEORIES OF PERSONALITY (4)

A survey of the principal theories of personality with attention to the experimental methods and findings on which they are based, as well as their applications in everyday life. Prerequisite: PSYC 130 or PSYC 140 and 141.

### PSYC 370 - HEALTH PSYCHOLOGY (OR HLTH 370) (3)

The study of learning, motivation, and psychological theories as related to health decisions and practices. Topics include the psychology of addictive behavior, behavioral health, and the relationship between stressful life events, social support, and wellness.

### PSYC 373 - ORGANIZATIONAL BEHAVIOR (OR MGMT 373) (4)

The study of the behavior of individuals and groups in organizations with emphasis on the implications for organizational design and management practice. Topics include motivation, leadership, decision-making, organizational culture, power, and conflict. Recommended: MGMT 371.

### PSYC 390 - COGNITIVE PSYCHOLOGY (4)

Theories and methods in the study of mental processes such as attention, pattern recognition, comprehension, memory, knowledge representation, and problem solving. Connections to neuroscience and applications to information science are also explored.

### PSYC 425 - PSYCHOLOGY OF RELIGION (OR RELH 425) (3)

Interpretation of religious behavior and motivation from psychological perspectives.

### PSYC 430 - PSYCHOLOGICAL TESTING (3)

Principles of test selection, administration, and interpretation; consideration of the contributions and limitations of major types of standardized tests and inventories used in the behavioral sciences. Prerequisites: PSYC 130 or PSYC 140 and 141, MATH 106, and permission of instructor. (Course fees apply.)

### PSYC 434 - PERSPECTIVES IN PSYCHOLOGY (1-3; 6)

Current theory and practice in psychology. Elective credit.

**PSYC 437 - DEATH AND DYING (OR SOCI, SOWK 437) (3)**

Study of the process of death and dying from four distinct perspectives: cultural, social, personal, and professional.

**PSYC 447 - ADVANCED FORENSIC PSYCHOLOGY (4)**

An advanced course in selected topics in forensic psychology, criminal justice, and criminology. This course focuses on the application and practice of psychology in the areas of police and investigative psychology, family forensic psychology, psychology of crime and delinquency, consulting and correctional psychology.

Prerequisite: PSYC 247 or permission of instructor. Offered even years.

**PSYC 455 - HISTORY AND SYSTEMS OF PSYCHOLOGY (4)**

Historical development of the various systems and theories of psychology.

Prerequisite: PSYC 130 or PSYC 140 and 141.

**PSYC 464 - INTRODUCTION TO COUNSELING (4)**

A systematic, comprehensive, and balanced survey of the leading counseling approaches, including an analysis of each system's perspective on personality, abnormal behavior, clinical methods, and the helping relationship. Course is designed for all those interested in the helping professions. Prerequisite: PSYC 130 or PSYC 140 and 141.

**PSYC 466 - BIOLOGICAL PSYCHOLOGY (4)**

The study of the physiological, developmental and functional explanations of behavior. This includes sensory and motor mechanisms, as well as motivated behaviors, learning, memory and language. The biological basis for mental disorders and the behavioral effects of brain damage are also addressed.

Prerequisites: PSYC 130 or PSYC 140 and 141, BIOL 141 or 121, or permission of instructor.

**PSYC 471 - RESEARCH METHODS I: DESIGN AND STATISTICS (2)**

Study of qualitative and quantitative research design and interpretation of statistics in psychology. Prerequisites: PSYC 140, PSYC 141, MATH 106 or equivalent. Juniors or seniors only.

**PSYC 472 - RESEARCH METHODS II: PROJECT DEVELOPMENT (2)**

The development of a research project in psychology. Includes the review of literature, proposal development, human subjects review, and ethical approval.

Prerequisite: PSYC 471.

**PSYC 473 - RESEARCH METHODS III: RESEARCH PROJECT (2)**

Execution of the research proposal accepted in PSYC 472. Prerequisite: PSYC 472 and permission of instructor.

**PSYC 478 - APPLIED PSYCHOLOGICAL RESEARCH (1-3; 4)**

The student will work with a departmental advisor on research activities such as literature search, preliminary experiments, data collection, data transcription, or data analysis. Prerequisite or corequisite: PSYC 471. Graded S or NC.

**PSYC 492 - ABNORMAL PSYCHOLOGY (4)**

An overview of the major categories of abnormal behavior, including clinical description and classification, as well as recent research on etiology and approaches to treatment. Prerequisites: PSYC 130 or PSYC 140 and 141; PSYC 366.

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### PSYC 493 - PSYCHOLOGY PRACTICUM (1-3; 3)

A volunteer experience utilizing psychological skills structured by the student in conjunction with his/her advisor in a community agency. A weekly requirement of three hours per credit in a social service agency which provides the student with a field experience in a local setting. Prerequisite: Senior status and permission of instructor. Graded S or NC.

### PSYC 495 - COLLOQUIUM: ORIENTATION TO CAREER AND GRADUATE SCHOOL (0)

An overview of career and graduate school options available to psychology majors. A review of typical graduate school and employment prerequisites and application procedures.

### PSYC 496 - SEMINAR (2-3; 6)

In-depth examination of a specific topic in psychology. Topics may include motivation, sensation and perception, mental health, human sexuality, etc. Prerequisite: Upper-division major/minor in psychology or permission of instructor.

### PSYC 498 - SENIOR PROJECT IN PSYCHOLOGY (2)

Exploration of a topic of interest developed while participating in Psychology Practicum. Students will identify a particular need or research question in consultation with the instructor and/or practicum supervisor, and will conduct a literature review in order to address the need or question. The project is summarized in a written report of the findings. Prerequisite: PSYC 473 or permission of the instructor. Signature of the instructor required for registration.

### PSYC 499 - SENIOR THESIS IN PSYCHOLOGY (2)

An original independent research study in psychology. May be based on research completed in PSYC 473. Must be submitted for presentation at a scientific meeting or for publication. Prerequisite: PSYC 473 or permission of the instructor. Graded S or NC.

## **RDNG - READING**

### RDNG 191 - ANALYTICAL READING SKILLS (2)

Study of advanced vocabulary, with emphasis on the student's major field, critical reading and review writing, speed, and specialized study skills.

## **RELB - BIBLICAL STUDIES**

RELB classes that fall into the 300 range are focused on the Old Testament while RELB classes in the 400 range are New Testament.

### RELB 104 - THE MINISTRY OF JESUS (4)

Survey of Christ's life in its historical setting as a basis for determining Christian action. Not open to students with senior standing.

### RELB 105 - THE SERMON ON THE MOUNT (2)

Study of the Sermon on the Mount as it relates to the needs of the Christian. Not open to students with senior standing.

**RELB 106 - THE PARABLES OF JESUS (2)**

Exegetical study of Jesus's parables; considers literary structure, historical context, and relevance for today. Not open to students with senior standing.

**RELB 111 - MESSAGES OF THE OLD TESTAMENT (4)**

Survey of basic themes of the Old Testament. Not open to students with senior standing.

**RELB 231 - EXPLORING THE NEW TESTAMENT (4)**

An introduction to the New Testament Scriptures and the faith of the earliest Christians. The course will focus on Jewish and Greco-Roman background, the nature and message of the gospels, the life and ministry of Jesus and the ministry and theology of Paul, and the later developments that transformed the church from a first-century Jewish sect into a separate movement that spread around the world.

**RELB 274 - STUDY TOUR: THE HOLY LANDS AND ITS PEOPLE (4)**

An examination of the cultural, historical, geographical, and theological dimensions of the Old and New Testament scriptures in conjunction with the Bible Lands Study Tour. Primary attention is given to the teachings of the Old and New Testaments and the significance these scriptures continue to have within Judaism, Christianity, and Islam. Offered odd years during the summer.

**RELB 301 - OLD TESTAMENT HISTORY (3)**

Study of the historical framework in which the religion of Israel developed; considers dominant events and trends in God's saving relationship to His covenant people.

**RELB 302 - PENTATEUCH (4)**

Exegetical examination of significant passages in the first section of the Hebrew Bible (Old Testament); considers the historical setting, authorship, time, circumstance of writing, and other literary and theological questions.

**RELB 303 - OLD TESTAMENT PSALMS, STORIES, AND WISDOM (3)**

Introduction to the third section of the Hebrew Bible; considers authorship, the time and circumstance of writing, and other literary and theological questions.

**RELB 304 - HEBREW PROPHETS (4)**

A study of the ministry and messages of selected pre-exilic, exilic and post-exilic prophets in Israel including consideration of their relevance for today.

**RELB 306 - THE BIBLE AND ITS TRANSLATIONS (2)**

Survey of the history of the Bible from the earliest manuscripts through the science of textual criticism to a comparison of the numerous English versions currently available.

**RELB 307 - CREATION IN THE BIBLE (2)**

A study of the Biblical Creation passages and their contribution to a Christian understanding of God, the purpose and meaning of life, creation care, work, and Sabbath rest. Attention is given to the ancient Near Eastern context of the Biblical texts and interpretation for the contemporary reader.

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### RELB 312 - DANIEL AND JEREMIAH (4)

An exegetical study of selected passages from the prophetic books of Daniel and Jeremiah within their historical and literary contexts with special attention to their significance for Christian Eschatology.

### RELB 313 - REVELATION (3-4)

An exegetical study of the book of Revelation within its historical context, with special attention to its significance for Christian Eschatology. College Place campus: 3 credit hours; Portland campus: 4 credit hours.

### RELB 333 - BIBLICAL PERSPECTIVES ON HEALING (4)

A survey of the various ways biblical writers describe restoration to wholeness of life and of how these biblical views have been understood in prominent Christian traditions down to modern times. Offered on Portland campus. Offered as needed.

### RELB 337 - JESUS AND THE GOSPELS (4)

An examination of the gospels, attending to the background and purpose, literary composition, theology, ethics, and relevance to contemporary issues and life.

### RELB 339 - LUKE-ACTS (4)

An examination of the Gospel of Luke and of Acts with attention to background and purpose, literary composition, theology, ethics, the development of early Christianity, and relevance to contemporary issues.

### RELB 340 - ACTS & NEW TESTAMENT LETTERS (4)

An examination of the life and thought of the early Christian church as found in the book of Acts and in Pauline Epistles, Hebrews, and the General Epistles with attention to background and purpose, literary composition, theology, ethics and relevance to contemporary issues. May be taught with specific emphasis on a particular book or theme.

### RELB 341 - SCRIBES, MANUSCRIPTS, AND THE NEW TESTAMENT (2)

An introduction to the history and present development of the text of the New Testament, including how ancient manuscripts illuminate the social history of early Christianity. Topics include the formation of the Gospels, development of the New Testament canon, the spread of Christianity, doctrinal disputes, the oppression of women, Jewish-Christian relations, as well as differences between modern Bible translations. Credit will not be allowed for both GREK 341 and RELB 341.

### RELB 354 - LITERATURE OF THE BIBLE (OR ENGL 454) (4)

Study of biblical poetry and prose from a literary perspective. Prerequisite: general studies literature or ENGL 234.

### RELB 362 - PAUL AND THE GOSPEL (4)

An examination of I and II Thessalonians, I and II Corinthians, Galatians, and Romans with attention to background and purpose, literary composition, theology, ethics, and relevance to contemporary issues and life.

### RELB 412 - DANIEL & REVELATION (4)

A study of the apocalyptic books of Daniel and Revelation within their historical and literary contexts, with special attention to their significance for Christian Eschatology.

**RELB 421 - INTERPRETING THE BIBLE (4)**

Introduction to different approaches to interpreting the Bible and to the procedures and resources for exegesis of biblical texts with a focus on literary forms. Prerequisite: Complete at least one upper-division RELB course. (Course fees apply.)

**RELB 474 - STUDY TOUR: THE HOLY LANDS AND ITS PEOPLES (4)**

An examination of the cultural, historical, geographical, and theological dimensions of the Old and New Testament scriptures in conjunction with the Bible Lands Study Tour. Primary attention is given to the teachings of the Old and New Testaments and the significance these scriptures continue to have within Judaism, Christianity, and Islam. Offered odd years during the summer.

**RELB 496 - SEMINAR IN BIBLICAL HERMENEUTICS (4)**

Study of biblical interpretation including history, methods, tools and resources, and application of literary genres. Designed to prepare departmental majors for academic writing in the field of religion. Prerequisite: ENGL 327.

**RELH - RELIGIOUS HISTORY****RELH 205 - BIBLICAL ARCHAEOLOGY (4)**

Introduction to the science of archaeology with particular attention to those discoveries which bear on the interpretation of the Biblical text.

**RELH 303 - WORLD RELIGIONS (4)**

Introduction to the greater religions of mankind, such as Hinduism, Buddhism, Confucianism, Shintoism, Islam, and Christianity; considers the historical setting out of which these religions arose, their founders, their basic teachings and rituals, their conceptions of God and mankind, as well as their influence on cultural development.

**RELH 425 - PSYCHOLOGY OF RELIGION (OR PSYC 425) (3)**

Interpretation of religious behavior and motivation from psychological perspectives.

**RELH 455 - EARLY CHURCH HISTORY (3)**

Study of the rise of Christianity with emphasis on the development of theological concepts. Prerequisite: ENGL 327 or permission of instructor.

**RELH 457 - HISTORY OF ADVENTISM (3)**

Study of the rise and development of the Seventh-day Adventist denomination.

**RELH 490 - ARCHAEOLOGICAL FIELDWORK (0-4)**

Participation in an archaeological expedition. Involves all aspects of dig life - stratigraphic excavation employing the most up-to-date methodologies, careful recording and analysis of data in consultation with experts from a wide range of disciplines. Prerequisites: RELH 205 or permission of instructor. Application to the School of Theology is required by March 1 of the year the course is taken. Offered summers of even years. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

## **RELM - MISSIONS**

### **RELM 233 - INTRODUCTION TO CROSS-CULTURAL MINISTRY (3)**

Study of the major issues involved in communicating Christianity in other cultures with the aim of preparing the student for actual field work. This prerequisite for student missionaries is also open to other interested students.

## **RELP - PROFESSIONAL**

### **RELP 131 - INTRODUCTION TO FAITH AND MINISTRY (4)**

Exploration of personal faith and pastoral ministry focusing on spiritual growth, the call to pastoral ministry, the scope of pastoral ministry, and Seventh-day Adventist doctrines. The course includes a required weekend retreat. Open only to theology and religion majors. Not open to students with senior standing. (Course fees apply.)

### **RELP 236 - CHURCH WORSHIP (2)**

A study and application of the theology and choreography of worship. Open only to theology and religion majors. Prerequisite: RELP 131. (Course fees apply.)

### **RELP 336 - CHURCH AND PERSONAL MINISTRY (4)**

A study of the skills needed for personal and public ministry, including pastoral visitation and counseling, and various forms of evangelism. Combines theory and practice on how to minister to people of both genders and all age groups in church and community. Open only to theology and religion majors. Prerequisite: RELP 131.

### **RELP 370 - CHAPLAIN MINISTRY (2-4)**

Study and exposure to chaplaincy as an alternative vocational setting to traditional pastoral assignments. Includes hospital, prison, military, school and industrial chaplain work. The basic 2-hour course includes visits by professionals such as administrators, guards, physicians, nurses, and institutional chaplains. The optional hours include an inductive exploration of chaplain ministry through visitation, small group process, and discussion.

### **RELP 385 - PASTORAL MENTORING PROGRAM (0)**

Theology majors must participate in one school year of working with a local pastor in a church setting, thereby exposing them to active church life and pastoral ministry. This training is typically completed during the student's Junior or Senior school year. Graded S or NC.

### **RELP 482 - PASTORAL CARE (2)**

Introduction to the principles and practice of pastoral care through the application of counseling techniques, the utilization of the spiritual resources of the Christian community, and theological reflection. Open only to theology and religion majors. Includes practicum. Prerequisite: RELP 131.

### **RELP 484 - CHURCH LEADERSHIP SEMINAR I (2)**

Reading, writing, and discussion focused in the personal elements of pastoral life and function typically faced by those in pastoral ministry. Open only to senior theology majors.

**REL 485 - CHURCH LEADERSHIP SEMINAR II (2)**

Reading, writing and discussion focused on the professional leadership elements of pastoral life and function typically faced by those in pastoral ministry. Open only to senior theology majors.

**REL 492 - PUBLIC EVANGELISM I (1-2; 2)**

The theory and methodology of the public outreach of the church; integrating traditional evangelistic techniques, evangelistic preaching, and social ministries. Includes lab experience in actual outreach. Open only to theology and religion majors.

**REL 493 - PUBLIC EVANGELISM II (1)**

Application of the theory and methodology of the public outreach of the church; integrating traditional evangelistic techniques, evangelistic preaching, and social ministries. Open only to theology and religion majors. Prerequisite: REL 492. (Course fees apply.)

**RELT - THEOLOGY****RELT 110 - INTRODUCTION TO SEVENTH-DAY ADVENTIST BELIEF AND PRACTICE (4)**

Designed specifically for students with little or no exposure to Seventh-day Adventist doctrines, this is an introduction to the Adventist community in its historical and contemporary contexts. Adventist students or students graduating from Adventist academies admitted only with prior permission of instructor.

**RELT 202 - CHRISTIAN BELIEFS (4)**

Introductory overview of Christian teachings and doctrines from a Seventh-day Adventist perspective; explores topics such as revelation, God, creation, Sabbath, human beings and sin, the person and work of Jesus, the nature and purpose of the church, salvation, and the Christian hope of the Second Advent. Prerequisite: One college-level religion course or permission of instructor. Students who take RELT 110 are not eligible to take RELT 202 for credit.

**RELT 326 - SPIRITUALITY AND DISCIPLESHIP (4)**

Study of the dynamics of the Christian spiritual life as lived individually, in the church community, and in the world. Prerequisite: 6 hours of religion general studies credit.

**RELT 340 - SPIRITUAL CARE AND NURSING (3-4)**

Study of religion and its major role and function in life along with a practical application of religious ideas and practices as they pertain to people experiencing illness and suffering. Offered on the Portland campus.

**RELT 342 - ISSUES OF GOD AND FAITH (3)**

An intellectual defense of the Christian faith from a Seventh-day Adventist perspective. Students will look at the philosophical and experiential elements that undergird religious belief.

**RELT 342P - ISSUES OF GOD AND FAITH (4)**

An intellectual defense of the Christian faith from a Seventh-day Adventist perspective. Students will look at the philosophical and experiential elements that undergird religious belief.



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### RELT 348 - CHRISTIAN ETHICS (4)

Study of the foundations and application of ethics to contemporary issues such as bioethics, sexuality, economics, violence, discrimination and the environment, with a focus on moral decision-making and behavior. (College Place campus - 4 quarter hours; Portland campus - 3 quarter hours.)

### RELT 348P - CHRISTIAN ETHICS (3)

Study of the foundations and application of ethics to contemporary issues such as bioethics, sexuality, economics, violence, discrimination and the environment, with a focus on moral decision-making and behavior. (College Place campus - 4 quarter hours; Portland campus - 3 quarter hours.)

### RELT 352 - THE CHRISTIAN AND THE ENVIRONMENT (2)

Exploration of issues, interests, strategies, and implications that arise from the intersection of environmental concerns and biblical creationism.

### RELT 356 - UNDERSTANDING CHRISTIAN MARRIAGE (2)

An overview of the subject of marriage in light of biblical principles and teachings pertinent to the subject. The class will look at marriage as an idea, as a process, as a blessing, and as an achievement.

### RELT 402 - HUMAN FORGIVENESS (2)

Biblical Examples, injunctions, invitations and descriptions of forgiving augmented with psychological and relational studies, stories and skills. The course explores the benefits of forgiving, the hazards of not forgiving, and practical suggestions for making forgiveness work.

### RELT 412 - PHILOSOPHY OF RELIGION (OR PHIL 412) (4)

Study of religious thought and practice from a philosophical perspective; considers the arguments for the existence of God, the relationship of faith and reason, the use of religious language, and the problem of evil. See the History and Philosophy section of this bulletin.

### RELT 417 - INSPIRATION AND REVELATION (3)

Study of the concept of inspiration as revealed in the Bible writers as compared to the concept of inspiration in modern times as revealed in the person and writings of Ellen G. White. Credit not allowed for both RELT 417 and 517.

### RELT 456, 457 - SYSTEMATIC THEOLOGY I, II (3, 3)

An inquiry from a Seventh-day Adventist perspective into the major themes of Christian theology; introduces students to the process of theological thinking, including systematic reflection of one's own views. Open only to departmental majors. Prerequisites: RELH 455 or permission of instructor.

### RELT 466 - ISSUES IN RELIGION AND CULTURE (3)

Study and discussion of significant issues circulating in the world of Christian thought and their relevance to human life. Some issues will be those of particular interest to Seventh-day Adventists. Credit not allowed for both RELT 466 and 566.

### RELT 495 - COLLOQUIUM (0)

Lecture series designed to enrich the professional and spiritual development of students in religion and theology, and create a sense of community within the School of Theology. All Religion and Theology majors must satisfactorily

complete twelve colloquiums, at least one of which must be during the senior year. Requirement must be completed at least one quarter before graduation. Graded S or NC. Appropriate adjustments will be made for transfer students.

## **SCDI - SCIENTIFIC DIVING**

### **SCDI 441 - SCIENTIFIC DIVING I (2)**

This course, in combination with Scientific Diving II (SCDI 442), meets the training and performance standards for scientific divers as prescribed by the American Academy of Underwater Sciences. Course includes safety training and introduction to underwater scientific methodology. Activities will occur in classroom, confined water, and open water settings. Will not apply to biology major or minor. Prerequisites: Advanced Open Water certification from an internationally recognized agency, WWU Scientific Diving medical examination, swimming evaluation, and permission of instructor. (Course fees apply.)

### **SCDI 442 - SCIENTIFIC DIVING II (2)**

This course, in combination with Scientific Diving I (SCDI 441), meets the training and performance standards for scientific divers as prescribed by the American Academy of Underwater Sciences. Course includes underwater and surface search and rescue, emergency management, advanced underwater scientific methodology, and small boat operations. Activities will occur in classroom, confined water, and open water settings. Will apply to biology major electives, but will not apply to biology minor. Prerequisite: Scientific Diving I and permission of instructor. (Course fees apply.)

## **SMTF - STUDENT MISSION TASK FORCE**

### **SMTF 100 - EXPERIENTIAL PROGRAM (12)**

Student Missionary Program provides a practical educational experience in a structured environment. Course required for all SM students, but credit will not apply toward class level or graduation requirements. Students with less than 6 hours left to meet degree requirements are not eligible to register for this class. Graded S or NC.

## **SOCI - SOCIOLOGY**

### **SOCI 204 - GENERAL SOCIOLOGY (4)**

Study of the fundamentals of group behavior, social conditions, and dynamics; considers culture, groups, population trends, religions, institutions, social problems, theories, and objectives.

### **SOCI 225 - MARRIAGE AND FAMILY LIFE (OR PSYC 225) (2)**

Study of the physical, economic, and psychological adjustments necessary for happy marriage and parenthood; stresses Christian philosophy and principles; staff members and guest speakers will lecture and lead discussions.

### **SOCI 234 - CURRENT SOCIAL PROBLEMS (4)**

Study of sociological theories, concepts, and terminology to build insight into societal issues. Allows an understanding of social problems within the context of social groups and examines potential solutions. Topics addressed include the economy, overpopulation, health care, education, social class, poverty, race, gender,

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and the environment. The impact of social problems will be viewed in terms of individuals, groups, institutions, organizations, and society. Assists students to become more aware of issues of social justice and informing their view of the complexity of systemic societal problems. Recommended prerequisite: SOCI 204.

### SOCI 236 - PRIVILEGE AND OPPRESSION (4)

Study of the construction of contemporary American social categories including mechanisms of privilege and oppression. Examination of the distribution of social resources to groups and individuals, as well as theoretical explanations of how unequal patterns of distribution are produced, maintained, and challenged. Emphasizes how race, culture, ethnicity, gender, sexuality, age, ability, and religion intersect with social class to produce different life experiences. Course will stress the importance of advocating for social justice and equality. Recommended prerequisite: SOCI 204 or ANTH 225.

### SOCI 394 - DIRECTED READING (1-2; 4)

Independent reading for upper-division students who wish to continue broadening their knowledge of sociology in a particular area by extensive reading.

### SOCI 420 - IMMIGRATION AND IDENTITY (4)

Provides an analysis of the political, social, and economic impact of immigration in the United States. Additionally, the class traces how the immigration process reshapes ethnic identity while simultaneously expanding what it means to be "American." Prerequisite: SOCI 204 or ANTH 225. Offered odd years.

### SOCI 437 - DEATH AND DYING (OR PSYC, SOWK 437) (3)

Study of the process of death and dying from four distinct perspectives: cultural, social, personal, and professional.

### SOCI 438 - SOCIOLOGY OF HEALTH, ILLNESS, AND HEALTHCARE (4)

Examination of the social context of health, illness, and the healthcare system. Attention given to the impact of social, cultural, political, and economic determinants on health, illness and the delivery of medical care in the United States. The course includes but is not limited to social epidemiology, health/illness behavior, medical facilities, healthcare professionals, insurance, and public policy. Includes more in-depth assignments designed for upper division students. Prerequisite: SOCI 204. Offered even years.

### SOCI 451 - RESEARCH METHODS I (3)

Introduction to social science research methods, including qualitative and quantitative practices of inquiry, critical consumption of scholarship, academic writing and ethical dilemmas in the pursuit of knowledge. Statistics highly recommended.

### SOCI 452 - RESEARCH METHODS II (3)

Introduction to social science research methods, including qualitative and quantitative practices of inquiry, critical consumption of scholarship, academic writing and ethical dilemmas in the pursuit of knowledge. Statistics highly recommended. Prerequisites: SOCI 451.

### SOCI 455 - SOCIAL THEORY (4)

Survey of modern social, political, and economic thought. Emphasizes 19th and 20th century theories and models which have directed contemporary research in

the social sciences and have influenced public policy. Prerequisite: SOCI 204. Offered odd years.

#### **SOCI 490 - CAPSTONE INTERNSHIP (1-6; 6)**

Provides students the opportunity to apply theoretical learning to professional experiences in local community organizations. Along with the accrual of clock hours, students will complete a portfolio demonstrating their ability to view experiences through a sociological lens. One credit hour is equivalent to 30 clock hours. Departmental approval and supervision is required.

#### **SOCI 491 - CAPSTONE RESEARCH INTERNSHIP (1-6; 6)**

Students will participate in research activities under the supervision of a research faculty member. This capstone experience will vary based on the availability of research projects and the approval of the supervisory research faculty member. Prerequisite or corequisite: SOCI 451

#### **SOCI 496 - SOCIOLOGY SEMINAR (3; 9)**

An in-depth seminar that focuses on a particular social issue. Specific subjects studied will vary from quarter to quarter on issues such as poverty, gender, social class, economic opportunity, human rights, and social justice. May be repeated for credit when topics vary. Prerequisites: SOCI 204, ANTH 225, or permission of instructor.

### **SOWK - SOCIAL WORK**

#### **SOWK 205 - MENTAL HEALTH FIRST AID (1)**

Provides knowledge and skills in responding to early stage mental illnesses and how to provide assistance in specific situations. Training focuses on providing comfort, the reduction of distress, promotes recovery and encourages seeking appropriate professional help. Students will be eligible to receive a certificate in the Mental Health First Aid USA training model. (Course fees apply.)

#### **SOWK 260- HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT I (3)**

Study of the biological, psychological, and social theories of human development from birth to adolescence. Human development is examined using the underpinning of the ecological system's perspective including the multiple factors that impact development such as; race, class, gender, and religion. Recommended prerequisite: PSYC 130.

#### **SOWK 261-HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT II (3)**

The study of the biological, psychological, and social theories of human development from young adulthood to old age. Human development is examined using the underpinning of the ecological systems perspective including the multiple factors that impact development such as; race, social class, gender, and religion. Recommended prerequisite: PSYC 130.

#### **SOWK 264 - INTRODUCTION TO SOCIAL WORK (4)**

Introduction to the profession of social work including an examination of the knowledge, values, and skills influencing the role of the social worker in a variety of practice settings.

#### **SOWK 266 - HISTORICAL DEVELOPMENT OF SOCIAL WELFARE (4)**

Study of the history and structure of the U.S. social welfare system; examination of current social welfare institutions in terms of political, social, and value systems. Presents the history and social structures that create and maintain

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systems of privilege, oppression, and discrimination. Prerequisite or corequisite: SOWK 264 or SOCI 204 or permission of instructor.

### SOWK 305 - MENTAL HEALTH SEMINAR (3)

Examines historical and contemporary issues in mental health care and the stigma and discrimination associated with mental illness. Students must have an active certificate in Mental Health First Aid to enroll in this course. Prerequisite or corequisite: SOWK 205 or a valid Mental Health First Aid Certificate.

### SOWK 327 - INTRODUCTION TO ALCOHOLISM AND ADDICTION TREATMENT (3)

Comprehensive survey covering the basic aspects of substance use disorders including: etiology, treatment, screening tools and early intervention methods.

### SOWK 371 - SOCIAL WORK PRACTICE WITH INDIVIDUALS (4)

Methods course focusing on the knowledge, values, and skills needed for generalist social work practice with individuals. Major subject areas include values and ethics, interviewing, assessment, intervention, termination, evaluation, and documentation. Skill development in Motivational Interviewing offered as an evidence-based model of practice. Framed with a view of clients and social work practice that honors individual strengths and recognizes the impact of societal forces that create opportunities for some and barriers for others. Course includes practice skills lab. Prerequisites: PSYC 130, SOCI 204, SOWK 264 or permission of instructor.

### SOWK 372 - SOCIAL WORK PRACTICE WITH SMALL GROUPS (4)

Methods course focusing on the knowledge, values, and skills needed for generalist social work practice with groups. Course content includes: assessment of group dynamics, structure, and process, and models of intervention in a variety of settings. Develops an understanding of the typology of groups, the functions and roles of group members, stages of group development, group leadership, and the foundational skills of group facilitation and evaluation. Course includes practice skills lab. Prerequisite: SOWK 371.

### SOWK 373 - SOCIAL WORK PRACTICE WITH COUPLES AND FAMILIES (4)

Methods course focusing on the knowledge, values, and skills needed for generalist social work practice with couples and families. The course provides mezzo skill development for work with this special population. Includes theoretical and historical and contemporary intervention models specifically designed for work with couples and families. Students will develop practice skills through lab setting activities, role play, supervision and observation. Course includes practice skills lab. Prerequisite: SOWK 371.

### SOWK 375 - POLICY AND ADVOCACY PRACTICE FOR SOCIAL JUSTICE (3)

Study of social welfare policy and its impact upon clients, social workers, and social services. Introduces students to the process of policy formulation and acquaints them with different frameworks for policy analysis. Includes a study of legislative advocacy, lobbying, and empowerment of clients through social and political action. Encourages student participation in local and national advocacy organizations that seek to further social justice. Prerequisite: SOWK 266 or permission of instructor.

**SOWK 383 - TOPICS IN GERIATRIC MENTAL HEALTH (2; 4)**

Course examines common mental health issues experienced by older adults. Issues covered will vary from quarter to quarter on topics such as dementia, depression, anxiety, substance abuse, loss, psychopharmacology and physical illness that causes decline in mental functioning. Biopsychosocial assessment and effective treatments will be addressed along with the role of social support and implications for caretaking. May be repeated for credit when topics vary.

**SOWK 384 - TOPICS IN SOCIAL WORK LEADERSHIP AND ADMINISTRATION (2; 4)**

Course designed to provide social workers with theory, knowledge and skills in administration and management of social service organizations. Topics covered will vary from quarter to quarter including ethics and legal issues, financial management and personnel development. May be repeated for credit when topics vary.

**SOWK 394 - DIRECTED READING: (1-2; 4)**

Independent reading for upper-division students who wish to continue broadening their knowledge of social work in a particular area by extensive reading.

**SOWK 437 - DEATH AND DYING (OR PSYC, SOCI 437) (3)**

Study of the process of death and dying from four distinct perspectives: cultural, social, personal, and professional.

**SOWK 460 - SERVICES TO FAMILIES WITH CHILDREN (3)**

Development of child welfare services, their structure and function today, current challenges facing America in the welfare of its children, the role of social work in child abuse investigations, treatment provisions, and regulation. Prerequisite: PSYC 130 or SOCI 204, or permission of instructor.

**SOWK 465 - SOCIAL WORK PRACTICE WITH ORGANIZATIONS AND COMMUNITIES (4)**

Introduction to generalist practice with communities and larger organizations. Study of community organization, organizational analysis, management skills, program planning and evaluation. Enhances students' ability to initiate and implement macro change. Prerequisite: SOWK 371. Prerequisite or corequisite: SOWK 375.

**SOWK 466 - COMPARATIVE THEORIES OF SOCIAL WORK PRACTICE (3)**

Study of intervention strategies, change theories, and therapeutic techniques employed at individual, family, and group levels. Emphasizes criteria for selecting alternative approaches and appropriate intervention activities. Prerequisites: SOWK 371 or permission of instructor.

**SOWK 471 - HUMAN SEXUALITY (OR HLTH 471) (3)**

Study of resources, research, anatomy and physiology, and personal values clarification on human sexuality. Emphasis will be on the interactions between biology, cognition, emotions, socialization, and culture. Prerequisite: PSYC 130 or SOCI 204.

**SOWK 479 - DIRECTED RESEARCH/PROJECTS IN SOCIAL WORK (1-3)**

Directed learning experience in a special area of social work or social welfare of particular interest to the student. Projects may include research which is agency organization based and should be chosen in consultation with the advisor. Written report of research/project is required describing the project, the theoretical base, the

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learning experience and the conclusion. Prerequisites: Social Work Major- SOWK 264, SOWK 371; Social Welfare Minor- SOWK 264, SOWK 266.

### SOWK 490 - FIELD EDUCATION (2-12; 12)

Training is completed under a professional social worker in a social service agency. Field Education is offered in various settings such as: medical, mental health, school, corrections, child welfare, and community organization. Field Education may be taken in one quarter (block) or concurrently with course work over two or more consecutive quarters. Twelve quarter credits (400 clock hours) are required for a social work major. Prerequisites: SOWK 266, 371, acceptance to the B.S.W. program, and permission of instructor. Prerequisite or corequisite: SOWK 372, SOWK 373. Students with two grades of IP in SOWK 490 are not eligible to register for practicum. Open to social work majors only. (Course fees apply.) Graded S or NC.

### SOWK 491 - SOCIAL WORK CAPSTONE (2)

Involves demonstration of professionalism, ethical decision making, critical thinking, enhancement of diversity, advancement of social justice, and application of knowledge of human behavior and the social environment. Integrates this set of knowledge, values, and skills in a process of self-examination, reflection, articulation of professional identity, and development of plans for continued growth and development. Prerequisite or corequisite: SOWK 490. Open to senior social work majors only.

## SPAN - SPANISH

### SPAN 101, 102, 103 - ELEMENTARY SPANISH (4, 4, 4)

Introduction to the study of Spanish with elementary practice in the skills of understanding, speaking, reading, and writing; includes grammatical terminology and the sound system of Spanish, plus basic grammar and vocabulary at the elementary level. This course is designed for non-native speakers of Spanish or students with no Spanish heritage. Language laboratory and tutoring required. Must be taken in sequence.

### SPAN 201, 202 - INTERMEDIATE SPANISH (4, 4)

Intermediate study of Spanish, emphasizing oral, writing, and reading skills, and mastery of grammar; designed to prepare students to use Spanish as a research and cultural tool. Prerequisite: SPAN 103 or equivalent or permission of instructor.

### SPAN 394 - SPANISH DIRECTED READING (1-2; 4)

Assigned readings and reports in Spanish. Prerequisites: permission of instructor.

### SPAN 330 - SPANISH FOR PROFESSIONALS (4)

Study of conversational Spanish for professionals, emphasizing pronunciation, vocabulary, and terminology relevant to a broad variety of professions. Communicative methodology includes presentations and role-play within the context of culture and context of situation. Conducted in Spanish. Prerequisite: SPAN 202 or permission of instructor.

### SPAN 405 - SPANISH LITERATURE ANALYSIS (4)

Examines theories of discourse analysis, and rhetoric. Study of authors, literary schools, genres, themes, stylistics and advanced language grammar. Concentrates

on form and style through analysis of major texts. Prerequisite: Intermediate Spanish or permission of instructor.

#### SPAN 407 - SURVEY OF SPANISH AND LATIN AMERICAN LITERATURE (4)

A study of selected contemporary texts and movements. The course emphasizes communicative skills of learning, reading, speaking, and writing within a social and cultural context, using such themes as personal identity; the family, the individual, and society; and social classes in the Hispanic world. The course also seeks to develop further proficiency in literary analysis and criticism. Prerequisite: Instructor determines if the reading level of the student is sufficient to manage the course. Offered even years.

#### SPAN 408 - CONTEMPORARY LATINO LITERATURE (4)

Designed to analyze significant works and key themes relating to the Latino Experience. This class will examine contemporary Latino literature in the United States. Bilingual instruction: Students speak Spanish or English; instructor addresses them in Spanish. Prerequisite: permission of instructor. Offered odd years.

#### SPAN 409 - SPANISH CULTURE AND CIVILIZATION (4)

Study of the origin and the development of the cultural, social, and political life of the Iberian people as reflected in art, architecture, history, literature, language, music, and philosophy. Examines current challenges of nationalism, immigration, identity, and issues related to European membership. Conducted in Spanish. Prerequisite: permission of instructor.

#### SPAN 410 - LATIN AMERICAN CULTURE AND CIVILIZATION (4)

Study of the origin and the development of the cultural, social, and political life of Hispanics and Latinos as reflected in art, architecture, history, literature, language, music, and philosophy. Examination of current challenges of nationalism, immigration, identity, and other issues. Conducted in Spanish. Prerequisite: permission of instructor.

#### SPAN 490 - INTERNSHIP (0-4; 4)

Students complete an internship in a Spanish speaking community that provides a linguistic and cultural experience that is academically relevant. Departmental approval of internship required.

#### SPAN 496 - SEMINAR IN SPANISH (1-4; 4)

Includes selected readings, studying research methods, giving oral reports, and writing scholarly papers.

### **SPCH - SPEECH**

#### SPCH 101 - FUNDAMENTALS OF SPEECH COMMUNICATION (4)

Introduction to public speaking. Emphasis on acquiring ease, a conversational attitude, and reasonable facility in organizing, writing, and delivering content relevant to the audience.

#### SPCH 107 - VOICE AND ARTICULATION (OR SPPA 107) (4)

Study of and practice in improving the speaking voice. Emphasizes the structure and function of the speech mechanism, quality and effectiveness of voice; stresses



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developing clear enunciation and articulation. As a guide to correct pronunciation, the International Phonetic Alphabet is also included.

### SPCH 207 - SMALL GROUP COMMUNICATION (3)

Study of the nature of group and interpersonal processes; includes leadership, member participation, and general communication strategies in group discussion utilizing the learned skills during the course experience.

### SPCH 211 - ORAL INTERPRETATION (OR DRMA 211) (4)

Study of the various types of interpretative literature with a view toward its understanding for the purpose of public presentation. Includes reading from the printed page with fluency and effectiveness and readers' theatre script preparation and presentation.

### SPCH 310 - INTERPERSONAL AND NONVERBAL COMMUNICATION (3)

Examination of both the process and the messages, verbal and non-verbal, that characterize interpersonal communication; analyzes communication styles of self and others while attending to the skill of adapting communication to a specific individual(s) context; employs readings, discussion, and strategies useful in understanding and improving one's interpersonal interactions.

### SPCH 341 - ARGUMENTATION (4)

Examination of contemporary logic to develop higher critical thinking; includes study of claims, evidence, reasoning, and fallacies; application of logic by analyzing current rhetoric debating contemporary issues, and applying presentational skills for professional use. Prerequisite: SPCH 101. Offered odd years.

### SPCH 381 - BIBLICAL PREACHING: FOUNDATIONS (2)

Preparation and delivery of Biblical sermons with a focus on the foundations of Biblical preaching. Laboratories and Sabbath speaking appointments included. Prerequisite: SPCH 101.

### SPCH 382 - BIBLICAL PREACHING: EXPOSITION (2)

Preparation and delivery of Biblical sermons with a focus on expository preaching. Laboratories and Sabbath speaking appointments included.

### SPCH 394 - DIRECTED READING: (1-2; 3)

Independent reading for students who wish to broaden their knowledge of theater and speech classics and professional literature. Offered alternatively with JOUR 394 and COMM 394.

### SPCH 395 - METHODS OF TEACHING SPEECH COMMUNICATION (3)

Study of the basic principles and practices of teaching speech on the junior high and secondary levels. Special attention given to contemporary methods of presentation in classrooms and therapy sessions; includes observations, demonstration, and class participation. Offered as needed.

### SPCH 407 - ADVANCED SMALL GROUP COMMUNICATION (3)

Study of the nature of group and interpersonal processes; includes leadership, member participation, and general communication strategies in group discussion utilizing the learned skills during the course experience. In addition, students will be required to submit a research paper on the course topic, take a leadership role, and various other in and out of class assignments. Prerequisite: SPCH 101.

**SPCH 443 - PERSUASIVE SPEAKING (4)**

Study of motivation in human persuasion strategies as applied in interpersonal, group, organizational and public context; analysis of persuasive speeches for their emotional, ethical, and logical value; practice in composing and delivering speeches to influence choice. Prerequisite: SPCH 101. Offered even years.

**SPCH 453 - RHETORIC OF WESTERN THOUGHT (3)**

Broad historical scope of rhetorical theory from its inception in the classical world, through the Middle Ages, the Renaissance, and the Enlightenment to the present, including contemporary theories, practices and scholarship. Prerequisite: SPCH 101.

**SPCH 483 - ADVANCED PREACHING SEMINAR (1)**

This class will focus on improving sermon writing and sermon delivery abilities. Prerequisites: SPCH 381, 382, 383, or permission of instructor.

**SPED - SPECIAL EDUCATION****SPED 210 - INTRODUCTION TO SPECIAL EDUCATION AND INCLUSIVE CLASSROOMS (4)**

Understanding diverse populations. Integrates inclusive strategies based upon theory and research in children's classroom learning. Special Education law and ethics are discussed. Pre/Corequisite: EDUC 211.

**SPED 212 - EARLY CHILDHOOD SPECIAL EDUCATION (3)**

Strategies of observation and assessment, identifying strengths, individualizing instructional plans, and adapting classroom environments, curriculum, and instructional methodologies to support highest levels of achievement and development for young children with diverse needs. Field experience required. Pre/Corequisite: SPED 210.

**SPED 213 - CHILDHOOD SPECIAL EDUCATION (3)**

Development of curricula and instructional materials for exceptional elementary learners assuming that a classroom includes students of different physical and cognitive abilities, students of different racial, ethnic, religious, and socio-economic origin, and students who demonstrate a variety of individual learning styles. Field experience required. Pre/Corequisite: SPED 210.

**SPED 214 - ADOLESCENT SPECIAL EDUCATION (3)**

Development of curricula and instructional materials for exceptional adolescent learners, assuming that a classroom includes students of different physical and cognitive abilities, students of different racial, ethnic, religious, and socio-economic origin, and students who demonstrate a variety of individual learning styles. Field experience required. Pre/Corequisite: SPED 210. (Course fees apply.)

**SPED 324 - ADAPTED PHYSICAL EDUCATION (OR PETH 324) (3)**

A study of the classifications of students with special needs and the adjustments to accommodate those children in the physical education setting. The course is designed to provide knowledge related to limiting conditions and the effects of these handicaps upon motor development and the performance of motor activities. Study of common abnormalities found in students which may be helped by proper exercise or movement and considers extent and limitation of the teacher's responsibility in this phase of education. Prerequisite: SPED 210.

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### SPED 422 - METHODS OF TEACHING AND LEARNING IN INCLUSIVE CLASSROOMS (3)

Introduces concepts and skills needed for teachers to be able to include students with exceptional needs in inclusive classrooms. Adapting environment, instruction, and assessment to accommodate the needs of the diverse student populations. Prerequisite: SPED 210.

### SPED 430 - PROFESSIONAL SKILLS IN SPECIAL EDUCATION (4)

Legal aspect of special education, individualized education plans, roles and responsibilities of teachers, collaboration techniques, service delivery/design, and supervision of paraprofessionals. Emphasis is placed on issues related to professionalism and ethical practice, including conducting professional activities in compliance with applicable special education laws and policies/regulations. Prerequisite: SPED 210.

### SPED 436 - TEACHING STUDENTS WITH MILD DISABILITIES (3)

In-depth examination and implementation of effective teaching techniques for students with mild disabilities. Emphasis placed on regular assessment and curriculum modifications and adaptations, and making accommodations following WAC, IDEA, 504, and ADA requirements. Strategies for strengthening family partnerships and for team collaboration are also emphasized. Prerequisite: SPED 210 and Pre/Corequisite: SPED 430.

### SPED 437 - TEACHING STUDENTS WITH AUTISM AND SEVERE DISABILITIES (3)

In-depth examination and implementation of effective assessment and teaching strategies for students with severe disabilities. The candidate will also study classroom set-up for accommodations of these students in the regular classroom. Strategies for strengthening family partnerships and for team collaboration are also emphasized. Prerequisite: SPED 210 and Pre/Corequisite: SPED 430. (Course fees apply.)

### SPED 438 - CONSULTATION, COLLABORATION, AND TRANSITIONS (3)

Candidates will learn school, family, and community partnerships to improve learning for students with disabilities. They will understand and apply knowledge of family systems including cultural and linguistic diversity. Prerequisite: SPED 210.

### SPED 440 - FUNCTIONAL BEHAVIORAL ASSESSMENT (3)

Developing functional assessment in student placement and curriculum modification and adaptation, and making accommodations for special needs students across content areas. Procedures for Functional Behavioral Assessment, manifestation determination, and behavior intervention planning (PBIS) are required. Prerequisite: SPED 210 and Pre/Corequisite: SPED 422. (Course fees apply.)

## **SPPA - SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY**

### SPPA 107 - VOICE AND ARTICULATION (OR SPCH 107) (4)

Study of and practice in improving the speaking voice. Emphasizes the structure and function of the speech mechanism, quality and effectiveness of voice; stresses

developing clear enunciation and articulation. As a guide to correct pronunciation, the International Phonetic Alphabet is also included.

### **SPPA 210 - SURVEY OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY (3)**

Survey of communication disorders with major emphasis given to the etiologies, symptomatologies, and the recognition of speech, language, voice, and hearing disorders. Offered even years.

### **SPPA 250 - SIGN LANGUAGE FOR THE DEAF (3)**

Introduction to the basic signs used in communicating with the hearing impaired; includes group practice in signing letters, words, sentences, and songs. (Offered contingent on sufficient enrollment.)

## **TECH - TECHNOLOGY EDUCATION**

### **TECH 137 - OXYACETYLENE WELDING AND CUTTING (2)**

Study of oxyacetylene and oxyfuel applications and practice in developing skills in oxyacetylene welding and cutting with fuel gases. (Course fees apply.)

### **TECH 138 - SHIELDED METAL ARC WELDING (2)**

Study of shielded metal arc welding theory and hands-on laboratory experiences to develop mastery of arc welding processes. (Course fees apply.)

### **TECH 139 - SPECIALIZED WELDING (2)**

Study of gas tungsten arc welding (TIG), gas metal arc welding (MIG), flux core arc welding, and shielded metal arc pipe welding. Prerequisites: TECH 137 and TECH 138 or permission of instructor. (Course fees apply.)

### **TECH 204 - FUNDAMENTALS OF ELECTRONICS (4)**

Study of fundamentals of electronics technology, including Ohms Law, series and parallel DC circuits, resistive capacitive and inductive AC circuits, motors and generators, and an introduction to semiconductors. Laboratory work will emphasize the use of basic electronic test equipment. Three lectures and one laboratory per week. Prerequisite: MATH 105 or higher. Offered even years. (Course fees apply.)

### **TECH 220 - INTRODUCTION TO BASIC WOODWORKING (2)**

Students will learn basic woodworking techniques and the use of woodworking tools. Course will include hand tools, power tools, and stationary power tools. Example projects will be completed in lab. (Course fees apply.)

### **TECH 223 - INTRODUCTION TO FINE WOODWORKING (2)**

Students will learn skills and techniques for building fine woodworking projects like cabinets and furniture. Laboratory work will include skill building tasks and projects. Prerequisite: TECH 220. (Course fees apply.)

### **TECH 224 - ADVANCED WOODWORKING (2)**

Students will learn skills and techniques for designing and building individual wood projects. Laboratory work will include defining the project design, spacing, and procuring materials, and building the project. Prerequisite: TECH 223. (Course fees apply.)

### **TECH 235 - MATERIALS AND PROCESSES (4)**

An in-depth look into the material selection and manufacturing processes of projects. Students will examine topics concerning material applications,

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manufacturing industries, lifecycle, and ecological impacts. Laboratory experiences focus on commonly shared processes in raw materials and production through field trip experiences and hands-on activities. Included are, basic manufacturing processes and techniques used in the plastics industry. A variety of forming, casting, and reinforced plastic processes will be examined and developed in the lab. Prerequisite: DSGN 121 or permission of instructor. (Course fees apply.)

### TECH 241 - FABRICATION AND MACHINING I (2)

Introduction to machining careers and competitive manufacturing. Survey of shop safety, industrial safety, federal law, dimensional measuring tools, and application of skills to metal lathe and milling equipment, including thread forms and fasteners used in industry. (Lab fees apply.)

### TECH 242 - FABRICATION AND MACHINING II (2)

Machining operations including chip formation speeds and feeds, and selecting machining tools and cutters for machining operations. Instruction and operation of variety of pieces of equipment, including the vertical milling machine, drill press, vertical spindle milling machine, reciprocating horizontal band cut off machines, measurement techniques, blade selection, and hand grinding drill-bits and reaming and sizing holes. (Lab fees apply.)

### TECH 244 - LATHE AND MILLING OPERATIONS (3)

Theory and practice in metal operations, including safety practices, creation, construction, measurement, print reading, engine lathe operations, turning, and threading processes. Submit layout projects, develop improvements using measurement tools, drilling, and milling operations. Design projects are geared toward products relevant to the industrial design and product design industries that utilize both the use of the lathe and milling machine. (Course fees apply.)

### TECH 252 - WEB TECHNOLOGY I (3)

Study of web technologies from a user and/or administrator perspective. Topics include HTML, XML, CSS (Cascading Style Sheets), and audio/video streaming.

### TECH 253 - WEB TECHNOLOGY II (3)

Study of web technologies from a user and/or administrator perspective. Topics include Java Script, PHP, web page editors, Perl and AJAX.

### TECH 254 - WEB TECHNOLOGY III (3)

Study of web technologies from a user and/or administrator perspective. Topics include SQL/Database handling, Intro Apache Server and Web Security.

### TECH 265 - METAL LATHE AND WELDING (2)

Introduction to fabricating, machining and welding metals. Survey of shop safety, industrial safety, federal law, dimensional measuring tools, and application of skills to metal lathe, oxyacetylene welding and cutting with fuel gasses, and/or shielded metal arc welding. Lecture and hands-on laboratory experiences to develop rudimentary skills. (Course fees apply.) Does not apply to Technology majors or minors. (Course fees apply.)

### TECH 280 - PRACTICUM (1-6; 6)

Laboratory work chosen in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit.

**TECH 321 - TECHNOLOGY AND SOCIETY (4)**

An examination of technological change from historical, artistic, and philosophical perspectives and its impact on human needs and concerns. Students will study the transformative interaction between technology and society and enhance their understanding of its nature and cultural significance. Prerequisites: Junior standing, ENGL 223. (Course fees apply.)

**TECH 335 - COMPUTER CONTROLLED PROTOTYPING IN TECHNOLOGY (3)**

A study of the applications of computers and microprocessor board controllers in industrial production and process control. Prerequisite: DSGN 121. (Course fees apply.)

**TECH 343 - FABRICATION AND MACHINING III (2)**

Precision layout practices, including selecting and identification of steels, the practices of hardening, case hardening, tempering, annealing, and stress relieving steels. Instruction on hardness testers, selecting and identification of grinding wheels, truing, dressing grinding operations. Surface grinder and cylindrical grinder, CNC programmable milling machine, including the review of programmable axis and position. Prerequisite: Programmable machining CAD drawing or instructor approval. (Lab fees apply.)

**TECH 380 - SPACE PLANNING AND DESIGN (3)**

The study of planning and organization of technical facilities and space use. Design includes efficiency in traffic flow, space usage, service systems, storage, building structure, environment control, and architectural drawing software application. Aesthetic considerations will be explored. Prerequisite: DSGN 121. (Course fees apply.)

**TECH 398 - MACHINE AND TOOL MAINTENANCE (1-2; 2)**

Methods of care and maintenance of tools, machines, and supplementary equipment. Selection may be made in any field offered. Prerequisite: adequate background in chosen fields. One laboratory per credit per week. One or two hours any quarter; maximum, two.

**TECH 428 - TEACHING TECHNOLOGIES (3)**

Study of technology for teachers, as applied to the elementary and secondary grades, covering the broad areas of project-based learning, design thinking, and the use of CNC and 3D lab equipment. Emphasis on understanding materials and processes and methods of application. Offered summer only, as needed.

**TECH 480 - ADVANCED PRACTICUM (1-6; 6)**

Advanced laboratory work in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit. Prerequisite: Lower division work in chosen area.

**TECH 490 - INTERNSHIP (0-4; 4)**

Individual contract arrangement involving students, faculty, cooperative businesses and organizations to gain experience in a work environment. Allows the student to apply advanced classroom learning. A response paper will be required at the end of the internship experience. A minimum of 30 hours of approved activity/experience must be completed for each credit earned. Internship credit is restricted to the major field of study. See the Internship Program in the Nondepartmental section of

## COURSES

the Bulletin. Prerequisite: Approval by department. Graded S or NC. (Course fees apply for students enrolled for 0 credit.)

### TECH 499 - SENIOR PROJECT (1-3)

A departmental performance experience as part of the Senior Comprehensive Examination. The type of experience is selected by the student in consultation with the advisor and approved by the department faculty. A presentation on completed work may be required. Graded S or NC.

## WRIT - WRITING

### WRIT 324 - CREATIVE NONFICTION WRITING (4)

Techniques of writing creative nonfiction in a range of styles for a variety of audiences. Emphasizes intensive revision and the development of critical writing and thinking. Offered even years.

### WRIT 333 - POETICS (3)

Introduces students to the fundamentals of prosody and poetics. Students read from a range of literary eras and from a variety of poetic forms, studying the commentary of poets, critics, and theorists. Students will practice the forms studied and write critiques of poems. Prerequisite: ENGL 234 or HONR 243. Offered odd years.

### WRIT 334 - POETRY WRITING (4)

A writing course designed to study and apply the basic principles of poetics. Analysis and discussion of student work.

### WRIT 335 - NARRATIVE WRITING (4)

Study of narrative theory and practice in the techniques of narrative writing, including characterization, theme, and plot. Analysis and discussion of student work. Offered odd years.

### WRIT 337 - STYLISTICS (3)

Examines theories of word choice through linguistic and grammatical exercises and discussions. It will also examine a variety of prose texts with an emphasis on what differentiates one style from another. Students will write papers analyzing prose styles and will produce original work based upon traditional stylistic exercises and mimesis. Prerequisite: ENGL 234 or HONR 243. Offered even years.

### WRIT 389 - WRITING THEORY (3)

A study of composition theory and the writing process. Through writing practice, students study the application of this theory to their own work and to the teaching of writing.

### WRIT 424 - DIRECTED CREATIVE NONFICTION WRITING (1-2; 3)

Refinement of essay writing skills through a writing project chosen in consultation with the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: WRIT 324 and a portfolio of creative nonfiction.

### WRIT 426 - DIRECTED DEVOTIONAL WRITING (1-2; 3)

Study and practice in various forms of devotional writing, such as spiritual autobiography, the examen, spiritual journaling, lectio divina, and theological

reflection. Limited enrollment. Admission by permission of instructor. Prerequisite: a portfolio of writing.

**WRIT 434 - DIRECTED POETRY WRITING (1-2; 3)**

Refinement of poetry writing skills through a writing project chosen in consultation with the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: WRIT 334 and a portfolio of poetry. Recommended: WRIT 333.

**WRIT 435 - DIRECTED NARRATIVE WRITING (1-2; 3)**

Refinement of narrative writing skills through a writing project chosen in consultation with the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: WRIT 335 and a portfolio of narrative writing.

**WRIT 496, 497, 498 - SEMINAR IN CREATIVE WRITING (2, 2, 2)**

As the culmination of the writing concentration, this course will guide students through the preparation and completion of their senior writing portfolio of fiction, poetry, and non-fiction. Students may have a general portfolio or one that concentrates on one genre. A bound copy of the senior portfolio remains with the English department. Each student in this course will give a public reading during the student's last quarter.





# FINANCIAL INFORMATION

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The Financial Bulletin is published as a detailed guide to finances at Walla Walla University. It contains information about estimated expenses, course fees, student employment, financial aid applications, scholarships, grants, and loan programs. Students and parents should refer to the Financial Bulletin for more specific information about finances.

## STUDENT FINANCIAL SERVICES

Members of the Student Financial Services staff work with parents, students, the federal and state governments, the University, and others to make financial arrangements for students to receive an education at Walla Walla University. Students and parents are encouraged to phone, write, or stop by the office for answers to questions about financing a college education.

FINANCIAL COUNSELORS provide help in financial planning. They are responsible for approving all financial arrangements and are available to discuss problems if parents or students have difficulty meeting the terms of the payment plan the family has chosen.

FINANCIAL AID COUNSELORS assist with the completion of financial aid applications, and with the administration of scholarship programs.

STUDENT EMPLOYMENT assists students in looking for work both on and off campus. Employment personnel neither hires students nor assigns them to particular jobs, but works with students individually to assist them in their employment search.

STUDENT LOAN CENTER assists current students with completing student loan applications, promissory notes, and obtaining additional loans to finance educational expenses; also works with borrowers in repayment on Federal Perkins, Nursing, or Institutional Loans.

FOR INFORMATION	Call	Toll Free	Email
Financial Counselors	(509) 527-2815	(800) 656-2815	stufin@wallawalla.edu
Financial Aid Counselors	(509) 527-2315	(800) 656-2315	finaid@wallawalla.edu
Student Employment	(509) 527-2357	(800) 656-2357	stuemp@wallawalla.edu
Student Loan Center	(509) 527-2333	(800) 656-2333	student.loans@wallawalla.edu
FAX	(509) 527-2556		

## EXPENSES

This section of the bulletin is designed to help parents and students anticipate the costs connected with receiving a Walla Walla University education. This list identifies many of the expenses a student may incur. Students may have additional expenses for transportation, personal needs, and other necessities and

extras not mentioned here. Parents and students should consider such expenses when making plans to cover the university costs.

In 2017-2018, Walla Walla University awarded over \$45 million in financial aid. The average student received over \$24,000 with over 90% of the student body awarded financial aid. Be sure to refer to the Financial Bulletin for more specific information about our great scholarship programs.

**ESTIMATED UNDERGRADUATE STUDENT BUDGETS**

**For 2019-2020**

**DORMITORY STUDENT**

	<b>Per Quarter</b>	<b>Per Year</b>
Tuition (full-time, 12-16 hours)	\$9,312	\$27,936
General Fee (Includes ASWWU Dues)	315	945
Room Rent	1,465	4,395
Cafeteria (Meal Plan)	1,095	3,285
Books (average)	330	990
Miscellaneous	<u>648</u>	<u>1,944</u>
<b>TOTAL</b>	<b>\$13,165</b>	<b>\$39,495</b>

**NON-DORMITORY STUDENT**

	<b>Per Quarter</b>	<b>Per Year</b>
Tuition (full-time, 12-16 hours)	\$9,312	\$27,936
General Fee (Includes ASWWU Dues)	315	945
Books (average)	330	990
Miscellaneous	<u>648</u>	<u>1,944</u>
<b>TOTAL</b>	<b>\$10,605</b>	<b>\$31,815</b>

**TUITION**

**Undergraduate Student Tuition**

	<b>Cost</b>	<b>Rate</b>
Part-time Tuition (1-11 quarter hours)	\$776	Per Qtr. Hr.
Full-time Tuition (12-16 quarter hours)	\$9,312	Per Quarter
Overload Tuition (above 16 qtr. hours)	\$621	Per Qtr. Hr.

**Audit Tuition**

Undergraduate students are charged for audited hours above or below bracket tuition. Graduate students are charged for all audited credits. The audit tuition rate is \$388 per credit hour for both graduate and undergraduate students. See the Academic Information and Policies section of this bulletin for restrictions on audited classes.

Undergraduate students with a WWU cumulative GPA of at least 3.00 and taking at least 12 hours of non-audited classes pay \$10 for each audited course instead of the “per quarter hour” charge. This fee is non-refundable after the fourth day of the quarter. Students in their first quarter at WWU are not eligible for this option because they do not have a WWU cumulative GPA.

**Student Missionary Tuition** \$15 for 12 credits per quarter

Participants in the Student Missionary and Task Force programs are registered as full-time students in the Experiential Program, SMTF 100, provided they meet the Student Missions Office’s eligibility criteria and receive financial clearance from Student Financial Services. Registration cannot be retroactive. Contact the Student Missions Office for more information.

**Graduate Student Tuition** \$633 per quarter hour

**Extension Tuition (55% of Undergraduate Tuition)** \$424 per quarter hour

Graduate students who meet one of the following categories are eligible for one-third off the regular graduate tuition rate. Acceptance into the graduate Education Program is required. Students are not eligible for WWU grants and scholarships, but may apply for Federal Direct Students Loans. The balance of the tuition not covered by awarded loans must be paid by the financial clearance deadline (no payment plan).

- 1. Full-time teachers employed within driving distance of WWU (200 miles). A copy of the school district’s contract is required.
- 2. Students taking the Special Education Concentration program through August 2020. Students who begin the program before August 2020 are not “Grandfathered” into this tuition rate aft August 2020.

**NPUC Academy Dual Credit Tuition** \$250 per quarter hour

Walla Walla University provides a dual credit program through which qualified North Pacific Union Conference (NPUC) juniors and seniors can enroll in university courses on their own academy campus and simultaneously receive academic credit on the academy transcript and a Walla Walla University transcript.

**WWU High School Enrichment Tuition** \$75 per credit hour, limited to 4 credits per quarter

The High School Enrichment Tuition Program provides qualified high school seniors the opportunity to enroll in Walla Walla University courses on a space-available basis. Dual credit may be earned for both the high school diploma (at the discretion of the high school) and a university degree. Courses will appear on the university transcript. Any class fees or lab fees are the responsibility of the students.

### **Senior Citizen Audit Tuition**

\$100 per quarter

The Senior Citizen Class Program (non-degree seeking) makes it possible for students who are 65 or more years of age to sit in on a class (with the instructor's permission).

### **General Fee—Undergraduate**

\$315 per quarter

All tuition-paying undergraduate students registered for 6 or more hours are required to pay this fee. Taskforce, Student Missionaries and ACA students will be exempt. Besides covering the cost of housing club dues, internet access while on campus, printing the first 100 pages in computer labs, access to the library, gym, and pool, and new technology for classrooms, etc., the General Fee includes the ASWWU dues which provides for student publications and membership in the Associated Students of Walla Walla University (ASWWU).

Students who are charged the General Fee for less than three quarters will need to pay an additional fee if they wish to receive the yearbook. Students who are exempt from paying the General Fee may purchase publications for prices set by the ASWWU editors.

### **General Fee—Graduate**

\$65 per quarter

All tuition-paying graduate students registered for 4 or more hours are required to pay this fee. This fee covers internet access while on campus, new technology for classrooms, graduation fee, etc. Students on the College Place campus also receive access to the library, gym and pool, and printing the first 100 pages in the computer labs.

Since the General Fee for graduate students does not include ASWWU dues, graduate students wanting campus publications such as the Mask and the yearbook may purchase these publications for prices set by the ASWWU editors.

## **INSURANCE**

### **Student Insurance**

All Walla Walla University students must have health insurance while they are enrolled at WWU. Students are responsible for obtaining and maintaining their health insurance. If a student's health insurance lapses while they are a student at WWU, they are responsible for obtaining replacement coverage. All students, and in particular our international students, are encouraged to carefully review their health insurance coverage to ensure that they are covered for services in the Walla Walla valley. If students require assistance in finding a health insurance plan to meet their needs, please go to [wallawalla.edu/insurance](http://wallawalla.edu/insurance) or contact the University Clinic at (509) 527-2425 for assistance.

### **Personal Property Insurance**

Walla Walla University is not responsible for loss of personal property. Students are encouraged to carry their own insurance for coverage of personal belongings.

## **PAYMENT PLANS**

Parents and students may choose one of the following payment plans that is the most convenient for them.

### **Regular Payment Plan**

The quarter's estimated expenses (tuition, required fees, cafeteria meal plan, rent, estimated books and other expenses) plus any previous balance and less any

awarded financial aid are paid before the student receives financial clearance for the new term.

Students and/or parents are billed for actual charges as those charges are incurred.

International (other than Canadian) and Extension students are expected to use the Regular Payment Plan.

Finance charges will accrue on a past due balance.

**Monthly Payment Plan**

The quarter’s estimated expenses (tuition, required fees, cafeteria meal plan, rent, estimated books and other expenses) less any awarded financial aid are divided into three equal payments. The first payment plus any previous balance is due before the student receives financial clearance for registration. The second and third payments are due by set dates during the following two months.

Students and/or parents are billed for actual charges as those charges are incurred.

This plan is not available to international students, except for Canadians, or Extension students.

Finance charges will accrue on a past due balance.

The schedule of payments is as follows:

	<b>Autumn</b>	<b>Winter</b>	<b>Spring</b>
Down Payment + Previous Balance	Registration	Registration	Registration
Second Payment	October 25	January 25	April 25
Third Payment	November 25	February 25	May 25

**Automatic Payment Plan**

Walla Walla University offers two automatic payment plan options. To set up an automatic payment plan, go to [wallawalla.edu/payment](http://wallawalla.edu/payment), sign in, go to the Account Menu, then Payment Plans, then Add a New Payment Plan.

**1 – Amount Due**

The amount due from either the Regular Payment Plan or the Monthly Payment Plan is processed as automatic charges using one of the online payment methods below. These payments are processed around the 25<sup>th</sup> of each month. At the end of the school year (or sooner if a student finishes midyear), a final charge is applied using the payment method.

Many people choose this option because it reduces the time spent arranging payment.

**2 – Recurring Amount**

The same amount is processed each month, on the date of your choosing. When you set this up, you specify the date, dollar amount, and how many times you wish the payment to be processed.

**Financial Clearance, Deadline, and Classes Dropped**

All students must complete financial clearance each quarter. This online process available through myWWU requires students to review contact information (address, phone numbers, email address), choose a meal plan, confirm housing

arrangements, make sure all paperwork for financial aid and loans is completed, make any required down payment, and agree to terms and conditions.

The deadline for autumn, winter, and spring quarters is the Wednesday before the start of classes. The deadline for summer quarter is the first day of summer session. Students missing this deadline will have their classes dropped. Because other students may be waitlisted for one of these classes, students are not guaranteed reinstatement into their scheduled classes after financial clearance is completed.

### **Change in Expenses**

Because of fluctuation in the economy, the University Board of Trustees reserves the right to adjust costs and policies throughout the school year or to supersede statements published in this bulletin.

### **Release of Transcripts or Degrees**

By action of the Board of Trustees of the University, a diploma or transcript (official or unofficial) may not be released until the following criteria are met:

- The student's account is paid in full.

- The student does not have a short-term loan co-signed by WWU.

- The student's Nursing, Perkins, and institutional loans are current.

- The student's loan exit interviews are complete (Diploma only).

To expedite the release of transcripts, diplomas, and other legal documents, a money order, credit card payment, or certified check should be sent to cover the balance of the student's account. Requests for transcripts may be made online through myWWU or in writing and signed by the student, either emailed, faxed, or mailed to the Academic Records Office.

A processing fee will be charged. See Financial Bulletin.

### **Financial Aid**

Families unable to meet the full costs of a Walla Walla University education are encouraged to apply for financial aid from the government and the University. All financial aid applications are evaluated based on the government's standard analysis of need. This analysis determines how much each family can afford to pay for a college education according to federal government guidelines.

Financial aid recipients are then awarded aid packages which typically include a combination of scholarships, grants, low-interest loans, and student employment. Unless otherwise noted, all forms of financial assistance are disbursed one-third each quarter (Autumn, Winter, Spring).

***The total amount of scholarships, grants, and subsidy (from all sources) that a student receives cannot exceed WWU's packaging budget in any given year. If the total does exceed the packaging budget, the award from WWU will be reduced.***

Scholarships are awarded for academic excellence, student leadership, and other accomplishments. They are not awarded based on need and do not have to be repaid. Even though it is recommended that students apply for financial aid, they are not required to do so in order to receive scholarships. **Grants** are awarded on the basis of financial need and do not have to be repaid. **Low-interest loans** are an investment in a student's future, allowing the student to attend university with payments and interest typically being deferred until after the student graduates or withdraws from school. Almost all financial aid award packages include a long-term loan. **Part-time employment** helps students meet the expenses of university life.

In order to receive the maximum financial assistance available, students should plan their finances for the entire academic school year prior to registration and complete their financial aid file by April 30 prior to the school year.

## **INTERNATIONAL STUDENTS**

### **International Student Deposit**

Students who are not citizens or permanent residents of the United States (excluding Canadian students) are required to pay an International Student Deposit with the University before final acceptance can be given and the I-20 form (needed to secure the United States Student Visa) can be issued. To determine ability to meet educational costs, the University requires applicants to submit a declaration of finances before final acceptance is given.

The International Student Deposit will be \$3,000 for Autumn 2019.

### **Interest**

Interest on the deposits use the One-Year Constant Maturity Rate.

### **Insurance**

Walla Walla University requires all international undergraduate and graduate students including Canadians to purchase health insurance while in attendance at the University.

### **Billing**

International students, except Canadian students, will be expected to use the Regular Payment Plan described in this bulletin.

### **Employment**

According to Immigration and Naturalization Services' regulations, international students attending WWU while on student visas are only permitted to work on campus and are limited to a maximum of 20 hours of work per week during periods of enrollment. Spouses and children who are not students may not accept employment under any circumstances.

### **Financial Aid**

International students on student visas do not qualify for the majority of loans and grants described in the Financial Bulletin. These students are eligible to receive scholarships, such as Achievement, Out of Area, Leadership, National Merit, General Studies Honors, Transfer Scholarship, Continuing Student Scholarship, Church Match Grant, if they qualify. Canadian students can find information about other resources at [wallawalla.edu/Canada-aid](http://wallawalla.edu/Canada-aid).

# ADMINISTRATION-STAFF-FACULTY

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## WALLA WALLA UNIVERSITY BOARD OF TRUSTEES

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Terrence Taylor  
Rodney Wehtje  
Ron Wilkinson

## ADMINISTRATION

### **President**

John K. McVay, Ph.D.

### **Vice President for Academic Administration**

Volker R. Henning, Ph.D.

### **Vice President for Financial Administration**

Steven G. Rose, B.S.B.A., C.P.A.

### **Vice President for Student Life**

Douglas Tilstra, Ph.D.

### **Vice President for University Relations and Advancement**

Jodeene Wagner, B.A.

### **Associate Vice President for Academic Administration**

Scott H. Ligman, Ph.D.

### **Associate Vice President for Financial Administration**

E. Kenneth Vyhmeister, M.S.T., C.P.A.

### **Associate Vice President for Graduate Studies**

Pamela Keele Cress, Ph.D.

### **Associate Vice President for Alumni and Advancement Services**

Troy Patzer, M.B.A.

### **Associate Vice President for Marketing and Enrollment Services**

Trevor Congleton, M.S.W.

### **Assistant Vice President of Student Life**

To be Announced



**Assistant to the President for Diversity**  
Pedrito U. Maynard-Reid, Th.D.

## ADMINISTRATIVE STAFF

### ACADEMIC ADMINISTRATION - SCHOOL DEANS

**Business**

Patience Taruwinga, Ph.D.

**Education and Psychology**

Debbie S. Muthersbaugh, Ph.D.

**Engineering**

Brian D. Roth, Ph.D.

**Engineering Associate**

Larry D. Aamodt, Ph.D.

**Nursing**

Lucille Benson Krull, Ph.D.

**Nursing, Associate**

Kari A. Firestone, Ph.D.

**Social Work and Sociology**

To be Announced

**Theology**

Carl Cosaert, Ph.D.

### ACADEMIC ADMINISTRATION - DEPARTMENT CHAIRS

**Art**

Joel Libby, M.F.A.

**Biology**

David Lindsey, Ph.D.

**Chemistry**

Kyle S. Craig, Ph.D.

**Communication and Languages**

Linda Potter Crumley, Ph.D.

**Computer Science**

Jonathan D. Duncan, Ph.D.

**English**

Kellie A. Bond, Ph.D.

**Health and Physical Education**

Rodd L. Strobel, M.Ed.

**History and Philosophy**

Gregory Dean Dodds, Ph.D.

**Mathematics**

Jonathan D. Duncan, Ph.D.

**Music**

Cristian Neacsu, D.M.A.

**Physics**

Thomas B. Ekkens, Ph.D.

**Technology**

Linda M. Felipez, Ed.D.

### ACADEMIC SUPPORT

**Director of Academic Advisement**

Herlinda V. Ruvalcaba, M.Ed.

**Director of Student Development Center**

David Lindstrom, M.A.

**Director of Summer Session**

Scott H. Ligman, Ph.D.

**Director of Technical Support Services**

Karl Thompson, M.S.

**Interim General Manager, KGTS/Positive Life Radio Network**

Sali Miller

**Registrar**

Carolyn Denney, M.A.

**Director of University Libraries**

Carolyn S. Gaskell, M.A.

**Director of Institutional Research and Effectiveness**

Donald Crumley, B.S.

## ALUMNI AND ADVANCEMENT SERVICES

### **Director of Alumni and Parent Relations**

Claudia Santellano, B.S.

### **Advancement Officers**

Karen Murcia, M.Ed.

Nathan Shields, M.S.A.

### **Director of Gift Planning**

Dorita Tessier, B.S., CFRE

## FINANCIAL ADMINISTRATION

### **Controller**

Eric James, B.S., C.P.A.

### **Director of Facility Services**

George Bennett

### **Director of Human Resources**

Jennifer Carpenter, J.D.

### **Director of Student Financial Services**

Cassie Ragenovich, B.S.

### **Director of Information Technology**

Scott McFadden, B.S.

## MARKETING AND ENROLLMENT SERVICES

### **Director of Admissions and International Student Liaison**

Dale Milam, M.S.

### **Director of Marketing and University Relations**

To be Announced

## STUDENT SERVICES

### **Lead Campus Chaplain**

Albert Handel, M.Div.

### **Director of Athletics**

Eric Cantrell, M.P.A.

### **Director of Resident Life and Housing**

Kristen Taylor, M.S.

### **Dean of Students**

To be Announced

### **Director of Counseling and Testing Center**

Michelle Naden, Ph.D.

### **Director of Food Service**

Sandra Williams, B.S.

### **Director of Security**

Courtney Bryant, B.B.A.

### **Director of University Clinic**

Denise Hickerson, M.S.

## AUXILIARY

### **Manager of University Bookstore**

Matt Heinrich, B.S.

### **Manager of Dairy Express**

Hugh Daley, B.B.A.

## PRESIDENTS OF WALLA WALLA UNIVERSITY

*William Prescott	1892-1894
*Edward A. Sutherland	1894-1897
*Emmett J. Hibbard	1897-1898
*Walter R. Sutherland	1898-1900
*Edwin L. Stewart	1900-1902
*Charles C. Lewis	1902-1904
*Joseph L. Kay	1904-1905
*Marion E. Cady	1905-1911
*Ernest C. Kellogg	1911-1917
*Walter I. Smith	1917-1930
*John E. Weaver	1930-1933
*William M. Landeen	1933-1938
*George W. Bowers	1938-1955
*Percy W. Christian	1955-1964
*William H. Shephard	1964-1968
*Robert L. Reynolds	1968-1976
N. Clifford Sorensen	1976-1985
*H. J. Bergman	1985-1990
Niels-Erik Andreasen	1990-1994
W. G. Nelson	1994-2001
John C. Brunt	2001
N. Clifford Sorensen	2001-2002
Jon L. Dybdahl	2002-2006
John K. McVay	2006-

\*deceased

## FACULTY

**Larry D. Aamodt**, *Professor of Engineering and Computer Science (1983-87; 1989)*

B.S.E. 1977, Walla Walla College

M.S.E.E. 1990; Ph.D. 1999, Washington State University

P.E. 1981, State of California, State of Washington

**Terrie Dopp Aamodt**, *Professor of History and English (1979)*

B.A. 1976, Columbia Union College

M.A. 1978, The College of William and Mary

Ph.D. 1986, Boston University

**Alma Alfaro**, *Professor of Languages (2004)*

B.A. 1998, Occidental College

M.A. 2000, Ph.D. 2004, University of California at Santa Barbara

**Shirley J. Wilson Anderson**, *Professor of Health (1999)*

B.S.N. 1976, Loma Linda University

M.S.N. 1978, University of Alabama

Ed.D. 1991, University of Virginia

**Austin C. Archer**, *Professor of Psychology and Education (1991)*

B.S. 1980; M.A. 1984, Andrews University

Ph.D. 1993, Indiana University

**Johanna Retana Atttoh**, *Associate Professor of Economics (2014)*

B.S. 2008, National University of Costa Rica

M.S. 2009, East Carolina University

M.A. 2014; Ph.D. 2016, Western Michigan University

**Cindee M. Bailey**, *Professor of Social Work and Sociology (1991)*

B.S. 1980; M.P.H. 1982, Loma Linda University

M.S.W. 1994, Walla Walla College

Ph.D. 1987, Oregon State University

**Maria Bastien**, *Assistant Professor of Education (2017)*

B.S. 2004, Pacific Union College

B.A. 2010; M.A. 2011, University of Windsor

Ph.D. 2017, University of Ottawa

**W. Brandon Beck**, *Associate Professor of Music (2000)*

B.S. 1985, Walla Walla College

M.Mus. 1988, VanderCook College of Music

**Brent Bergherm**, *Assistant Professor of Technology (2007)*

B.A. 1999, Walla Walla College

M.A. 2010, Savannah College of Art and Design

**Brant Berglin**, *Associate Professor of Biblical Studies (2013)*

B.A. 1995, Walla Walla College

M.Div. 2001, Andrews University

**Conna L. Bond**, *Associate Professor of Business (2013-2017; 2019)*

B.A. 1990, Whitman College

J.D. 2003, University of Florida

**Kellie A. Bond**, *Associate Professor of English (2004)*

B.A. 1993, Walla Walla College

- M.A. 1998; Ph.D. 2002, University of Oregon
- James D. Boyd**, *Professor of Social Work and Sociology* (2002)  
 B.A. 1987; M.S.W. 2000, Walla Walla College  
 Ph.D. 2015, Capella University
- Joseph A. Brannaka**, *Associate Professor of Chemistry* (2015)  
 B.S. 2009, Southern Adventist University  
 Ph.D. 2014, University of Florida
- Cecilia J. Brothers**, *Assistant Professor of Biology* (2018)  
 B.S. 2010; M.S. 2012, Walla Walla University  
 Ph.D. 2016, University of Alabama
- Susan Bungard**, *Instructor in Religion* (2004)  
 B.A. 1981, Walla Walla College  
 M.A. 2012, Walla Walla University
- Emilie Butler**, *Assistant Professor of Nursing* (2013)  
 B.S. 2010, Walla Walla University  
 M.S.N. 2015, Washington State University
- Roy K. Campbell**, *Professor of Physics* (2001)  
 B.S. 1978, Southern Adventist University  
 Ph.D. 1986, Florida State University
- Eldon Preston Carman, Jr.**, *Assistant Professor of Computer Science* (2017)  
 B.S. 2003, Walla Walla College  
 M.B.A. 2006, La Sierra University  
 M.S. 2014, University of California, Riverside
- Karen Clausen-Brown**, *Associate Professor of English* (2013)  
 B.A. 2007, Walla Walla College  
 Ph.D. 2015, University of Notre Dame
- Bryce E. Cole**, *Professor of Engineering* (1995)  
 B.A., B.S.E. 1987, Walla Walla College  
 M.S.C.E. 1989, University of Massachusetts  
 Ph.D. 1995, University of Notre Dame
- Mark J. Copsey**, *Associate Librarian* (1984)  
 B.A. 1981, Andrews University  
 A.M.L.S. 1983, University of Michigan
- Carl P. Cosaert**, *Professor of Biblical Studies: Greek and New Testament* (2005)  
 B.A. 1989, Union College  
 M.Div. 1993, Andrews University  
 M.A. 2000, Nazarene Theological Seminary  
 Ph.D. 2005, University of North Carolina at Chapel Hill
- David L. Cowles**, *Professor of Biology* (2001)  
 B.S. 1978; M.S. 1981, Walla Walla College  
 Ph.D. 1987, University of California, Santa Barbara
- Kyle S. Craig**, *Professor of Chemistry* (2003)  
 B.S. 1997, Andrews University  
 M.S. 2014, Walla Walla University

- Ph.D. 2003, University of British Columbia
- Pamela Keele Cress**, *Professor of Social Work and Sociology* (1996)  
 B.S.W. 1990; M.S.W. 1994, Walla Walla College  
 Ph.D. 2004, Andrews University
- Linda Potter Crumley**, *Professor of Communication* (2017)  
 B.A. 1988, Pacific Union College  
 M.A. 1991, University of California, Davis  
 Ph.D. 2002, University of Texas, Austin
- Cheris B. Current**, *Professor of Social Work and Sociology* (2007)  
 B.A. 2002, Southern Adventist University  
 M.A. 2005; Ph.D. 2007, Washington State University
- Hilary E. L. Dickerson**, *Professor of History* (2018)  
 B.A. 2002, Walla Walla College  
 M.A. 2004; Ph.D. 2011, Washington State University
- Gregory Dean Dodds**, *Professor of History* (2000)  
 B.A. 1997, Walla Walla College  
 M.A. 2000; Ph.D. 2004, Claremont Graduate University
- Andrew Dressler, III**, *Associate Professor of Business* (1965-68; 1997)  
 B.A. 1965, Walla Walla College  
 C.P.A. 1966, State of Washington  
 M.Acct. 1967, University of Idaho
- Jonathan D. Duncan**, *Professor of Mathematics and Computer Science* (2002)  
 B.S.; B.A. 1997, Walla Walla College  
 M.A. (Math); M.S. (Cptr. Sci) 2001, Indiana University  
 Ph.D. 2007, Indiana University
- Paul B. Dybdahl**, *Professor of Mission and New Testament* (2000)  
 B.A. 1992, Walla Walla College  
 M.Div. 1995; Ph.D. 2004, Andrews University
- Thomas B. Ekkens**, *Professor of Physics* (2004)  
 B.S. 1991, Andrews University  
 M.S. 1995, Ph.D. 1999, University of Notre Dame
- Lynelle Ellis**, *Associate Professor of Communication* (2015)  
 B.A. 1990, Walla Walla College  
 M.A. 2009, Spring Arbor University
- Karen Emerson**, *Assistant Professor of Social Work* (2004)  
 B.A. 1973, St. Ambrose University  
 M.S.W. 1992, Eastern Washington University
- Frank M. Fabian**, *Assistant Professor of Chemistry* (2019)  
 B.S. 1999, Universidad Nacional del Centro del Peru  
 M.S. 2012, University of Nebraska
- Linda M. Felipez**, *Professor of Technology* (1998)  
 B.A. 1980; B.S. 1982; M.S.Ed. 1983, Eastern Illinois University  
 Ed.D. 1990, West Virginia University

- Kari A. Firestone**, *Professor of Nursing* (2009, 2014)  
 B.S. 1994, Walla Walla College  
 M.S. 2006, Loma Linda University  
 Ph.D. 2016, Oregon Health and Science University
- James G. Foster**, *Assistant Professor of Computer Science* (2018)  
 B.A. 1980, Walla Walla College  
 J.D. 1983, University of California, Los Angeles  
 M.S. 2006, North Dakota State University  
 M.B.A. 2015, Southern Adventist University
- John Foster**, *Associate Professor of Mathematics* (2013)  
 B.S. 2007, Walla Walla College  
 M.S. 2009; Ph.D. 2013, University of Oregon
- Mathilde Frey**, *Professor of Biblical Studies* (2015)  
 B.A. 1992, Seminar Marienhöhe  
 M. Div. 2004; Ph.D. 2011, Andrews University
- Rob Frohne**, *Professor of Engineering* (1988)  
 B.S.E. 1983, Walla Walla College  
 M.S.E.E. 1984; Ph.D. 1988, Purdue University  
 P.E. 1998, State of Washington
- Robert Wayne Gardner**, *Professor of Sociology* (1970-1990; 2016)  
 B.A. 1969, Pacific Union College  
 M.A. 1971, Loma Linda University  
 Ph.D. 1977, University of Utah
- Susan A. Gardner**, *Professor of English* (1987-1990; 2016)  
 B.S. 1970, Walla Walla College  
 M.A. 1975, University of Utah  
 Ph.D. 1985, University of Michigan
- Carolyn S. Gaskell**, *Librarian* (1978)  
 B.A. 1976, Pacific Union College  
 M.A. 1977, University of Denver
- Peter Gleason**, *Associate Professor of Psychology* (2017)  
 B.A. 2004, Atlantic Union College  
 M.A. 2009; Ph.D. 2011, Loma Linda University
- Phil Glendrange**, *Instructor in Aviation* (2017)  
 B.S. 2011, Walla Walla University
- Timothy Joseph Golden**, *Professor of Philosophy* (2015)  
 B.S. 1990, West Chester University of Pennsylvania  
 J.D. 1993, Texas Southern University  
 M.A. 2006, West Chester University of Pennsylvania  
 Ph.D. 2011, University of Memphis
- Jean-Paul Grimaud**, *Associate Professor of Languages* (2000)  
 Licence en Theologie 1995, University of Strasbourg  
 Maitrise en Francais 1997, University of Grenoble

- Kevin D. Grussling**, *Associate Professor of Social Work (1992)*  
B.S.W. 1986; M.S.W. 1990, Walla Walla College
- Deisy E. Haid**, *Assistant Professor of Social Work (2017)*  
B.S.W. 2010; M.S.W. 2011, Walla Walla University
- Randi Hankins**, *Assistant Professor of Social Work (1996)*  
B.S. 1975, Central Washington University  
M.S.W. 1979, Eastern Washington University
- Brian D. Hartman**, *Assistant Professor of Education (2016)*  
B.S. (Biology); B.S. (Bioengineering) 1993, Walla Walla College  
M.A.T. 1996, Andrews University  
Ph.D. 2016, Oregon State University
- Jerrold W. Hartman**, *Professor of Communication (2003)*  
B.A. 1999, Walla Walla College  
M.F.A. 2008, National University
- Michael Hellie**, *Assistant Professor of Health and Physical Education (2018)*  
B.S. 1983, Walla Walla College  
M.A. 1990, California State University, Chico
- Robert D. Holm**, *Assistant Professor of Technology (2003)*  
B.S. 1996, Walla Walla College  
M.S. 2006, Purdue University
- Jefre Humbert**, *Instructor in Product Design (2017)*  
B.S. 1984, Walla Walla College
- Linda L. Ivy**, *Professor of Psychology (2006)*  
B.S. 1999, M.S. 2001, Ph.D. 2005, University of Oregon
- Benjamin Jackson**, *Associate Professor of Mathematics (2015)*  
B.A. 2001, Texas A&M University  
M.S. 2003, Washington State University  
Ph.D. 2015, Montana State University
- Ronald L. Jolliffe**, *Professor of English (1989)*  
B.A. 1971, Walla Walla College  
M.Div. 1974, Andrews University  
M.P.H. 1980, Loma Linda University  
M.A. (Religion) 1988; M.A. (Film) 2007, Claremont Graduate University  
Ph.D. 1990, Claremont Graduate University
- Lucille Benson Krull**, *Professor of Nursing (1996)*  
B.S. 1986, Pacific Union College  
M.S. 1988, Sonoma State University  
Ph.D. 1995, University of Texas at Austin
- Curtis Z. Kuhlman**, *Assistant Professor of Health and Physical Education (1983)*  
B.S. 1981, Loma Linda University  
M.S.T. 1988, Portland State University
- Daniel A. Lamberton**, *Professor of English (1981-1983, 1987)*  
B.A. 1971, Walla Walla College  
M.A. 1981, University of Montana



- M.F.A. 1997, University of Washington
- Debbie Lampson**, *Assistant Professor of Nursing* (2009, 2011)  
 B.S. 1982, Walla Walla College  
 M.S. 2010, Walden University
- Amanda Lewis**, *Assistant Professor of Social Work* (2018)  
 B.S. 2003, Montana State University  
 M.S.W. 2007, Walla Walla College
- Nerissa Lewis**, *Assistant Professor of Chemistry* (2017)  
 B.S. 2007, University of the West Indies, St. Augustine  
 M.S. 2011, University of Southern Mississippi  
 Ph.D. 2017, Louisiana State University, Baton Rouge
- Joel Libby**, *Assistant Professor of Art* (2013)  
 B.A. 2004, Walla Walla College  
 M.F.A. 2016, Academy of Art University
- Frederic Liebrand**, *Professor of Physics* (1990)  
 B.S. 1985, Southern College  
 M.S. 1987; Ph.D. 1990, Purdue University
- Scott H. Ligman**, *Professor of Biology* (1989)  
 B.S. 1980; M.S. 1982, Andrews University  
 Ph.D. 1989, Oregon State University
- David F. Lindsey**, *Professor of Biology* (1997)  
 B.S. 1981, Southwestern Adventist College  
 Ph.D. 1992, University of Texas, Austin
- Deanna Ludwig-Bos**, *Assistant Professor of Nursing* (2016)  
 B.S.N. 2011, Washington State University  
 M.S.N. 2014, Kaplan University
- Qin Ma**, *Professor of Engineering* (2005)  
 B.S. 1987, M.S. 1994, Chongqing University  
 M.S. 1999, Florida International University  
 Ph.D. 2004, Carnegie Mellon University
- Ross Magi**, *Associate Professor of Mathematics* (2014)  
 B.S. 2007, Walla Walla College  
 M.S. 2009; Ph.D. 2014, University of Utah
- Pedrito U. Maynard-Reid**, *Professor of Biblical Studies and Missiology* (1990)  
 B.Th. 1970, West Indies College  
 M.A. 1973; M.Div. 1975; Th.D. 1981, Andrews University  
 Th.M. 1995, Fuller Theological Seminary
- Douglas McClay**, *Assistant Librarian, Level II* (2015)  
 B.S. 2002, Pacific Union College  
 M.L.S. 2010, Drexel University
- Janice McKenzie**, *Associate Professor of Bioengineering* (2011)  
 B.S. 2001, Montana State University  
 Ph.D. 2006, Purdue University

- John K. McVay**, *Professor of Theology* (2006)  
 B.A. 1980, Southern Adventist University  
 M.Div. 1983, Andrews University  
 Ph.D. 1995, University of Sheffield
- Kendrick F. Mensink**, *Visiting Assistant Professor of Engineering* (2019)  
 B.S.E. 2012, Walla Walla University
- Mihail Motzev**, *Professor of Business* (2004)  
 M.Sc. 1981, Higher Institute of Economics, Bulgaria  
 Ph.D. 1987, University of National and World Economic, Bulgaria
- Eunice Muriu**, *Assistant Professor of Nursing* (2018)  
 B.S. 2007, Bethel College  
 M.S. 2010, University of Michigan
- Debbie S. Muthersbaugh**, *Professor of Education* (2010)  
 B.S. 1980, Walla Walla College  
 M.Ed. 2009; Ph.D. 2012, University of Idaho
- Cristian Neacsu**, *Assistant Professor of Music* (2018)  
 B.A. 2008, Andrews University  
 M.M. 2010, University of Cincinnati  
 D.M.A. 2016, University of Illinois, Urbana-Champaign
- Curtis A. Nelson**, *Professor of Engineering* (1982-83; 1988)  
 B.S.E. 1978, Walla Walla College  
 M.S.E.E. 1986, Washington State University  
 Ph.D. 2004, University of Utah  
 P.E. 1982, State of Washington-inactive
- James R. Nestler**, *Professor of Biology* (1990)  
 B.S. 1984, M.S. 1986, Walla Walla College  
 Ph.D. 1990, University of Colorado, Boulder
- Kirt Onthank**, *Associate Professor of Biology* (2013)  
 B.S. 2006, Walla Walla College  
 M.S. 2008, Walla Walla University  
 Ph.D. 2013, Washington State University
- Jinhyang Park**, *Assistant Professor of Music* (2016)  
 B.A. 2004, Sahmyook University  
 M.M. (Piano Performance) 2009, Boston Conservatory  
 M.M. (Solo Piano) 2010, University of South Florida  
 M.M. (Collaborative Piano) 2012, New England Conservatory  
 D.M.A. 2018, Boston University
- Michaelynn R. Paul**, *Professor of Nursing* (2000)  
 B.S. 1987, Walla Walla College  
 M.S.N. 2004, Oregon Health and Science University  
 D.N.P. 2017, Walden University
- Kayleith Pellandini**, *Instructor in Social Work* (2015)  
 B.S. 1997; M.S.W. 1998, Andrews University

- George Perez**, *Assistant Professor of Business* (2018)  
 B.S. 1994, Universidad Del Valle De Mexico  
 M.S. 1998, Andrews University
- Pamela Bing Perry**, *Associate Professor of Social Work* (2009)  
 B.S. 1984, Union College  
 M.B.A. 1988, University of Kansas  
 M.S. 2003; D.M.F.T. 2009, Loma Linda University
- Delvin E. Peterson**, *Associate Professor of Engineering* (2004)  
 B.S.E. 2001, Walla Walla College  
 M.S.M.E. 2004; Ph.D. 2012, Oregon State University
- Matthew Pierce**, *Assistant Professor of Art* (2015)  
 B.A. 1989, Walla Walla College  
 M.F.A. 2015, Academy of Art University
- Joan M. Redd**, *Professor of Biology* (1992)  
 B.S. 1979; M.S. 1981, Walla Walla College  
 Ph.D. 1989, University of Denver
- Heather L. Rodriguez**, *Assistant Professor of Social Work* (2015)  
 B.S.W. 1999, M.S.W. 2000, Walla Walla College
- Brian D. Roth**, *Professor of Engineering* (2008)  
 B.S.E. 2001, Walla Walla College  
 M.S. 2003, Purdue University  
 Ph.D. 2008, Stanford University
- Christy A. Scott**, *Assistant Librarian, Level II* (2004)  
 B.S. 2001, Union College  
 M.L.S. 2003, University of Missouri-Columbia
- Kraig S. M. Scott**, *Professor of Music* (1986)  
 Associateship (Piano) 1978, The Royal Conservatory of Toronto  
 B.Mus. 1984, Walla Walla College  
 M.Mus. 1986, University of Oregon  
 M.A.; D.M.A. 1993, Eastman School of Music, University of Rochester
- Richard W. Scott**, *Assistant Librarian Level II* (2008)  
 B.A. 1990, Union College  
 M.L.S. 1991, University of Kentucky
- Melodie A. Selby**, *Associate Professor of Engineering* (2009)  
 B.S.E. 1986, Walla Walla College  
 M.S.E. 1994, Washington State University  
 P.E. 1989, State of California  
 P.E. 1991, State of Washington
- Nancy L. Semotiuk**, *Professor of Communication* (1989)  
 B.A. 1979, Walla Walla College  
 M.A. 1992, Norwich University  
 Ph.D. 2019, Union Institute and University
- Deborah Silva**, *Professor of Communication* (2000)  
 B.A. 1996, Walla Walla College  
 M.A. 1998; Ph.D. 2007, Washington State University

- Susan B. Smith**, *Professor of Social Work and Sociology* (1997)  
 B.S. 1981, Southern Adventist University  
 M.S.W. 1989, Florida International University  
 Ph.D. 2004, Andrews University
- Rodd L. Strobel**, *Assistant Professor of Physical Education* (2015)  
 B.S. 1987, M.Ed. 2007, Walla Walla College  
 M.A. 2018, Columbia University
- Ann C. Szalda-Petree**, *Associate Professor of Social Work* (2005)  
 B.S. 1987, Seattle University  
 M.A. 1991, Ph.D. 1993, University of Montana
- Patience Taruvinga**, *Associate Professor of Business* (2017)  
 B.S. 1999, University of Zimbabwe  
 MBA 2003; M.S. 2008, Indiana University South Bend  
 D.B.L. 2012, University of South Africa
- Karen B. Tetz**, *Professor of Nursing* (1985)  
 B.S. 1977, Walla Walla College  
 M.S. 1983, Loma Linda University  
 Ph.D. 2003, Oregon Health and Science University
- David E. Thomas**, *Professor of Practical Theology and Apologetics* (2001)  
 B.A. 1975, Atlantic Union College  
 M.Div. 1978; D.Min. 1999, Andrews University
- Alden L. Thompson**, *Professor of Biblical Studies* (1970)  
 B.A. 1965, Walla Walla College  
 M.A. 1966; B.Div. 1967, Andrews University  
 Ph.D. 1975, University of Edinburgh
- Douglas Thomsen**, *Associate Professor of Engineering* (2018)  
 B.S.E. 1993, Walla Walla College  
 M.S.E. 1996; Ph.D. 1999, Purdue University
- Timothy L. Tiffin**, *Professor of Mathematics* (1992)  
 B.S. 1985, Pacific Union College  
 M.S. 1988; D.A. 1995, Idaho State University
- Emily Tillotson**, *Assistant Professor of Social Work and Sociology* (2008)  
 B.S.W. 1997, M.S.W. 2000, Walla Walla College
- Matthew Toelke**, *Instructor of Technology* (2015)  
 B.S. 2009, Walla Walla University
- Bruce J. Toews**, *Professor of Business* (1994)  
 B.B.A. 1987, Pacific Union College  
 M.B.A. 1991, California State University, San Bernardino  
 C.P.A. 1995, State of Washington  
 D.B.A. 2015, Walden University
- Monique Vincent**, *Assistant Professor of History* (2018)  
 B.A. 2007, Walla Walla College  
 M.A. 2009; Ph.D. 2016, University of Chicago

**Heather R. Vonderfecht**, *Associate Professor of Social Work (1994)*

B.S. 1984, Juniata College

M.A. 1986, Wake Forest University

M.S.W. 2001, Walla Walla College

Ph.D. 1992, Washington University, St. Louis

**Lynn R. Wagner**, *Associate Professor of Nursing (1994)*

B.S. 1977; M.S. 1983, Loma Linda University

**Laurellé C. Warner**, *Associate Professor of Social Work (2014)*

B.S. 1983, Atlantic Union College

M.S.W. 1985, University of Connecticut

Ph.D 2019, Loma Linda University

**Jody E. Washburn**, *Assistant Professor of Biblical Studies (2016)*

B.A. 2005, Walla Walla College

M.A.; M.A. 2010, Andrews University

M.A. 2013; Ph.D. 2016, University of California, Los Angeles

**Cynthia Westerbeck**, *Professor of English (2017)*

B.A. 1990, Walla Walla College

M.A. 1992; Ph.D. 2000, Washington University, St. Louis

**Louie L. Yaw**, *Professor of Engineering (1992-93; 2000)*

B.S.E. 1992, Walla Walla College

M.S. 1996; Ph.D. 2008, University of California at Davis

P.E. 1996; S.E. 2000, State of California

P.E., S.E. 2001, State of Washington

## EMERITI

**Norman L. Anderson, J.D.**  
*Professor Emeritus of Accounting*

**Beverly G. Beem, Ph.D.**  
*Professor Emeritus of English*

**Darold Bigger, Ph.D.**  
*Professor Emeritus of Religion and Social Work*

**Roland R. Blaich, Ph.D.**  
*Professor Emeritus of History*

**Chester D. Blake, Ed.D.**  
*Professor Emeritus of Technology*

**David A. Bullock, Ph.D.**  
*Professor Emeritus of Communication*

**Jon A. Cole, P.L.S.**  
*Professor Emeritus of Engineering*

**Ralph M. Coupland, Ed.D.**  
*Associate Professor Emeritus of Education*

**Carlton E. Cross, Ph.D.**  
*Professor Emeritus of Engineering*

**Richard F. Daley, Ph.D.**  
*Professor Emeritus of Chemistry*

**Donald Dawes, M.Ed.**  
*Associate Professor Emeritus of Technology*

**C. Loren Dickinson, Ph.D.**  
*Professor Emeritus of Communication*

**Jon L. Dybdahl, Ph.D.**  
*Professor Emeritus of Biblical Studies*

**Thomas J. Emerson, M.F.A.**  
*Professor Emeritus of Art*

**Joseph G. Galusha, Jr., Ph.D.**  
*Professor Emeritus of Biology*

**James C. Hannum, M.A.**  
*Associate Professor Emeritus of Communication*

**Gordon B. Hare, Ph.D.**  
*Professor Emeritus of Mathematics*

**Wilma M. Hepker, Ph.D.**  
*Professor Emeritus of Social Work and Sociology*

**Bruce C. Johanson, D.Th.**  
*Professor Emeritus of Biblical Studies*

**Melvin S. Lang, Ph.D.**  
*Professor Emeritus of Mathematics*  
*Associate Vice President Emeritus for Academic Administration*

**Carlyle Manous, D.M.A.**  
*Professor Emeritus of Music*

**Martha F. Mason, M.F.A.**  
*Professor Emeritus of Art*

**Bruce McClay, M.A.**  
*Librarian Emeritus*

**Walter Meske, M.A.**  
*Vice President Emeritus for Student Administration*

**Harold T. Ochs, Ed.D.**  
*Professor Emeritus of Education*

**Janet D. Ockerman, Ph.D.**  
*Professor Emeritus of Social Work and Sociology*

**Tamara L. Randolph, Ph.D.**  
*Professor Emeritus of Education*

**Donald W. Rigby, Ph.D.**  
*Professor Emeritus of Biology*

**Donnie Thompson Rigby, M.A.**  
*Professor Emeritus of Communication*

**Gail Rittenbach, Ph.D.**  
*Professor Emeritus of Education*

**Carolyn Stevens Shultz, Ph.D.**  
*Professor Emeritus of English*

**Dan M. Shultz, M.Mus.**  
*Professor Emeritus of Music*

**Glenn E. Spring, D.M.A.**  
*Professor Emeritus of Music*

**R. Lee Stough, Ph.D.**  
*Professor Emeritus of Psychology*

**Alden L. Thompson, Ph.D.**  
*Professor Emeritus of Biblical Studies*

**Thomas M. Thompson, Ph.D.**  
*Professor Emeritus of Mathematics*

**Fred W. Troutman, Ph.D.**  
*Professor Emeritus of Nursing*

**Verlie Y. F. Ward, Ph.D.**  
*Professor Emeritus of Education*

**Melvin K. West, Mus.A.D.**  
*Professor Emeritus of Music*

**JoAnn Y. Wiggins, Ph.D.**  
*Professor Emeritus of Business*

**Ken Wiggins, Ph.D.**  
*Professor Emeritus of Mathematics*

**Robert F. Wood, Ph.D.**  
*Professor Emeritus of Engineering*

**Helen Ward Thompson Zolber, Ph.D.**  
*Professor Emeritus of English*

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204 S. College Ave. · College Place, WA 99324

(509) 527-2811 · *fax* (509) 527-2574

*toll-free* (877) 527-2811 · [wallawalla.edu](http://wallawalla.edu)

