Walla Walla University

Undergraduate Bulletin

2011-2012

Walla Walla University Undergraduate Bulletin 2011-2012

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Walla Walla University

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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 degree program, Bachelor of Arts degree Business Administration program.)
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (Bachelor of Science in Engineering degree program)
Council on Social Work Education (Bachelor of Social Work and Master of Social Work degree programs)
National League for Nursing Accrediting Commission. (Bachelor of Science Nursing program)
National Association of Schools of Music
Washington State Board of Education for Teacher Certification

a member of

American Association of Collegiate Registrars and Admissions Officers
American Association of Higher Education
American Society for Engineering Education
Accreditation Council for Business Schools and Programs (ACBSP)
National League for Nursing
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 Association of Summer Sessions
Washington Friends of Higher Education

approved by

The Attorney General of the United States for non-immigrant students
The Washington State Higher Education Coordinating Board's State Approving Agency (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 State Higher Education Coordinating Board's State Approving Agency 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

Walla Walla University maintains a policy of equal educational opportunity for all applicants without regard to gender, race, color, national and/or ethnic origin, age or sensory disability and while administering its educational and admissions policies, financial aid, employment programs, student life and services, or any other university-administered programs.

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.

WALLA WALLA UNIVERSITY BULLETIN
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This issue is a revised copy of the 2010-2012 Bulletin.

WALLA WALLA UNIVERSITY

General Telephone Number	509/527-2615
General Fax Number	509/527-2253
Toll Free (Continental U.S.A. and Canada)	1-800-541-8900
Worldwide Web Site	http://www.wallawalla.edu

ENROLLMENT

Vice President	Jodeene Wagner
Application Forms for Admission	509/527-2327
Bulletins	Fax: 509/527-2397
General Information	Email: info@wallawalla.edu

ACADEMIC RECORDS

Registrar	Carolyn Denney
Academic Information	509/527-2811
Transcripts and Transcript Evaluation	Fax: 509/527-2574
Transfer Student Information	Email: registrar@wallawalla.edu
Veteran Information	509/527-2491

STUDENT FINANCIAL SERVICES

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

STUDENT LIFE

Vice President	Ken Rogers
Automobile Registration	Email: ken.rogers@wallawalla.edu
Off-Campus Housing	509/527-2511
Student Life	Fax: 509/527-2674

RESIDENCE HALL LIVING

Dean of Men	John Foote
General Information	Sittner Hall/Meske Hall
Room Reservations	509/527-2111
Dean of Women	Misty D. Puymon
General Information	Foreman/Conard Hall
Room Reservations	509/527-2531
Portland Residence Hall Dean	Eileen Stuart
General Information	Portland Campus
Room Reservations	503/251-6118

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 Art (B.A.)

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  *Commercial Art p. 75
  *Fine Art p. 74
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Business Administration p. 91
Chemistry p. 103
Computer Science p. 129
English p. 174
  *Writing p. 175
Environmental Studies p. 218
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  *Human Thought and Culture p. 219
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Bachelor of Business Administration (B.B.A.)

  *Accounting p. 88
  *Entrepreneurship and Small Business Management p. 89
  *Finance p. 89
  *Health and Senior Care Management p. 98
  *International Business p. 90
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Bachelor of Music (B.Mus.)

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Bachelor of Science (B.S.)

Automotive Management p. 209
Automotive Service p. 288
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  *Preparation for Teaching p. 188
  *Pre-physical Therapy p. 190
Physics p. 257
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Web Design p. 294

Bachelor of Science in Engineering (B.S.E.)

  *Civil Engineering p. 164
  *Computer Engineering p. 164
  *Electrical Engineering p. 165
  *Mechanical Engineering p. 165

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

Social Work p. 279

**Indicates concentration available*

ASSOCIATE DEGREES (TWO YEAR PROGRAMS)

Automotive Technology p. 295
Aviation Technology p. 296
Business p. 93
Computer Programming p. 131
Graphic Communications p. 296
Pre-Dental Hygiene p. 191
Pre-Nutrition and Dietetics p. 192
Pre-Occupational Therapy p. 194
Pre-Physical Therapy p. 193

ACADEMIC MINORS

Art Department
Art

Biology Department
Biology

School of Business
Business
Economics
Marketing

Chemistry Department
Chemistry

Communications and Languages Department
Communications
Drama
Journalism
Photojournalism
Speech Communication
French
German
Spanish

Computer Science Department
Computer Science

School of Education and Psychology
Education
Psychology

English Department
English
Film Studies

Health and Physical Education Department
Athletic Coaching
Health
Physical Education

History and Philosophy Department
History
Philosophy

Interdisciplinary Programs
Environmental Studies
Information Systems

Mathematics Department
Mathematics

Music Department
Music

Physics Department
Physics

School of Social Work and Sociology
Social Welfare
Sociology

Technology Department
Aviation
Graphic Arts
Photography
Technology
Web Design and Development

School of Theology
Biblical Languages
Religion

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 adviser.

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.

Chiropractic p. 263 (2)*
Cytotechnology p. 263 (2)
Dental Hygiene p. 265 (2)
Dentistry p. 264 (3)
Emergency Medical Care/ Cardiopulmonary Sciences p. 266 (2)
Health Information Administration p. 266 (2)
Law p. 267 (4)
Medical Technology p. 268 (4)
Medicine p. 268 (4)
Nutrition and Dietetics p. 269 (2)
Occupational Therapy p. 270 (2)
Occupational Therapy Assistant p. 271 (1)
Optometry p. 272 (2)
Osteopathy p. 272 (3)
Pharmacy p. 273 (2)
Physical Therapy p. 273 (3)
Physical Therapy Assistant p. 274 (1)
Physician Assistant p. 274 (2)
Public Health p. 275 (4)
Radiological Technology p. 275 (1)
Respiratory Therapy p. 276 (1)
Speech-Language Pathology and Audiology p. 277 (2)
Veterinary Science p. 278 (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 in Education)
Specializations:
- Curriculum and Instruction
- Educational Leadership
- Literacy Instruction
- Students-at-Risk

Master of Arts (MA in Counseling Psychology)

Master of Arts in Teaching (MAT)
Specializations:
- Curriculum and Instruction
- Educational Leadership
- Literacy Instruction
- Instruction with Certification (Elementary)
- Instruction with Certification (Secondary)
- Students-at-Risk

Master of Science (MS in Biology)

Master of Social Work (MSW)

Master of Education (MEd)
Specializations:
- Curriculum and Instruction
- Educational Leadership
- Literacy Instruction
- Students-at-Risk

ACADEMIC CALENDAR 2011-2012

AUTUMN QUARTER

September	19-24	M-S	Freshman Experience and Orientation
	25	S	Registration
	26	M	Instruction Begins
	29	R	Last Day to Register
October	7	F	Last Day for Registered Students to Add a Class or Change to Audit
November	15	T	Last Day to Withdraw from Classes
	20	S	Thanksgiving Vacation Begins
	27	S	Thanksgiving Vacation Ends (10:00 p.m.)
December	12-14	MTW	Final Exams
	30	F	Autumn Quarter Degrees Conferred

WINTER QUARTER

January	2	M	Registration
	3	T	Instruction Begins
	6	F	Last Day to Register
	16	M	Last Day for Registered Students to Add a Class or Change to Audit
February	21	T	Last Day to Withdraw from Classes
March	12-14	MTW	Final Exams
	23	F	Winter Quarter Degrees Conferred

SPRING QUARTER

March	25	S	Registration
	26	M	Instruction Begins
	29	R	Last Day to Register
April	6	F	Last Day for Registered Students to Add a Class or Change to Audit
May	15	T	Last Day to Withdraw from Classes
June	4-6	MTW	Final Exams
	10	S	Commencement (8:30 a.m.)

SUMMER QUARTER

June	18	M	Instruction Begins
July	4	M	Independence Day Holiday
August	10	F	Eight-week Session Ends
	24	F	Summer Quarter Degrees Conferred

OUR MISSION

VISION
A community of faith and discovery committed to

- 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

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 School of Social Work and Sociology; one in Missoula (two historic buildings at Fort Missoula) and the other in the historic south side of Billings. These campuses serve the needs of students enrolled in the Master of Social Work program.

PORTLAND CAMPUS. Walla Walla University provides academic and residence hall facilities in Portland, Oregon for sophomore and upper-division nursing students. Classrooms, library, skills laboratory and faculty offices are housed in the academic building. The residence hall provides living accommodations for 134 students.

ROSARIO BEACH MARINE LABORATORY. Walla Walla University maintains 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 kitchen and assembly hall, shop and cabins for student and staff housing.

OUR HERITAGE

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 1958. 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 masters program (M.S.W.) in the late 1980s, expanding eventually to campuses in Montana~to Missoula in 1996; 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 accounting and human resources. 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 formation; 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.

SPIRITUAL LIFE AND MISSION. At Walla Walla University, there is a network of leaders, programs, and opportunities for the spiritual enrichment of the students, faculty, and staff. Student leadership is encouraged as well as involvement in the various areas of worship, service, music, and much more.

CHAPEL EXPERIENCE. The chapel experience at WWU—known as University Comm*Unity*—includes Tuesday chapel and an occasional assembly. Other events included in the "chapel" experience 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. All undergraduate students are required to participate.

WORSHIPS. Providing programs conducive to academic and spiritual growth is the reason Walla Walla University exists. To help preserve this distinctive objective, selected worship attendance is required.

CAMPUS MINISTRIES. Campus Ministries is a student-operated organization promoting religious understanding and activity on and off campus. Typical activities include Friday evening programs, worship and fellowship events, 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 spend up to one year away from the WWU campus in volunteer service settings around the world.

CABL (COLLEGIATE ADVOCATES FOR BETTER LIVING). CABL emphasizes positive healthy lifestyle choices through a variety of informational, social, inspirational, recreational, and outdoor programs and activities.

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.

SABBATH AFTERNOON ACTIVITIES. Involvement is the key objective of the Sabbath Afternoon Activities team, who plan religious programs and Christian outreach activities.

SERVANTS OF THE MASTER. This organization provides fellowship and worship experiences for returned and prospective student missionaries and their friends.

SMALL GROUPS. Encouraging 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 GROUP. A daily prayer group meets for a time of singing, praying, and spiritual support.

VISION DRAMA COMPANY. This touring Christian drama group provides inspirational programs to churches and groups throughout the Northwest as well as on campus.

BEYOND WWU NETWORK. *Beyond WWU* is a program that provides a network for graduates of Walla Walla University. Graduating seniors can sign up for this program and WWU will help them become connected to communities and to church families where the graduates are re-locating for jobs or graduate schools.

SOCIAL OPPORTUNITY

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 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* student directory, The *Collegian* weekly student newspaper, and the *Mountain Ash* yearbook. Student editors of these publications are appointed by the ASWWU Media Board. The ASWWU is co-sponsored by the Vice-President for Student Life and the Student Activities Director.

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; Epsilon Mu Sigma (EMS), married students; Omicron Pi Sigma (OPS), residence hall men; and Village Singles Club.

STUDENT ACTIVITIES. A variety of activities are planned through the Student Activities office to meet the social needs of the students. Concerts, weekend activities, and mid-week stress relief events enable students to socialize outside the classroom.

REGIONAL OPPORTUNITIES. In addition to on-campus social activities, WWU students take advantage of a variety of regional 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, softball, volleyball; Men's sports: basketball, 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.

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 136 quarter hours completed, are required to live in a residence hall. Requests for exceptions are processed through the Student Life Office. Others are welcome as space allows. 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 400 men, this residence hall includes lounges, a recreation room, and health club facilities.

Meske Hall. Meske Hall occupies the front wing of Conard Hall, and accommodates 100 upper-division men. The second floor houses several student service departments: Campus Health and Wellness, Counseling and Testing Center, and Multicultural Services.

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 200 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 University Village Life and Apartment Housing Office is located at 26 N. College Avenue, College Place, WA; telephone: (509)527-2109. Information on apartments in the community can also be obtained at the above office.

STUDENT SERVICES

ACADEMIC ADVISEMENT. Academic Advisement is an important part of a student's progress through a chosen program of study at WWU. Academic advisers assist students in their consideration of life goals and in developing an educational plan to meet those goals. Academic advisers 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 adviser works with the student to develop a plan to achieve academic success.

All degree seeking undergraduate students are expected to have an academic adviser at all times. Freshmen are assigned specially selected academic advisers to assist them in making the most of their university experience. Preprofessional students are assigned academic advisers who are familiar with specific professional programs.

Adviser approval is required for class registration. Adviser signatures are required on Change of Registration forms for undergraduate students. In the event of temporary unavailability of the assigned adviser, 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 adviser of the action.

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 adviser and/or 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 http://www.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).

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

INFORMATION SERVICES. Information Services operates computer systems for the use of faculty, staff, and students of WWU. All systems are connected to a campus-wide computer network; consequently all computer systems are available from many locations on campus. Students have access to three PC labs located in Winters Education Complex, Kretschmar Hall, and Rigby Hall. Scientific and engineering computing is supported on a network of Sun SPARC and UltraSPARC workstations located in Kretschmar Hall.

A wide variety of software applications are available for the use of faculty, staff and students including several popular programs for word-processing, spreadsheets, databases, programming languages, graphics, computer-aided design, communications, mathematical computation, and email.

The University is connected to the Internet. Students as well as faculty and staff can use the services of the Internet for a wide variety of activities including Internet email, remote computing, research, file sharing, and the World Wide Web.

Use of campus computer facilities and software are provided free of charge to all WWU students.

VETERAN'S 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 veteran's policies, please contact the Veteran's Administration coordinator in the Academic Records Office (509) 527-2491.

ACADEMIC SERVICES

Career Counseling. The Career Center provides services that assist students with the process of self-assessment to determine a major, investigate potential careers, and develop the skills necessary to secure employment. Assessment tools such as the Myers Briggs Type Indicator and Strong Interest Inventory are used to assess interests and personality. A Career Values Card Sort is used to identify career values. Students are encouraged to select occupations to explore through job shadow and informational interview experiences. Connections are made through the Career Network database to facilitate the process of exploring careers. The Career Center hosts a Graduate School Fair, a Career Fair, and other events that give students the opportunity to network with professionals and learn more about potential career paths. The yearly Etiquette Dinner is another opportunity to develop skills and knowledge that will benefit career development. For more information, contact the Career Center at 527-2664.

Placement Services. Each quarter the Career Center coordinates visits from graduate schools and professional programs, providing the opportunity for students to participate in interviews for acceptance to these programs without the necessity of traveling long distances. Students have the opportunity to receive assistance with the job search process by attending workshops presented or hosted by the Career Center. The topics include: resume writing, job search skills, interview techniques, and applying to graduate school. In partnership with Alumni Relations the Career Center maintains a Career Network program that provides the opportunity for alumni and students to connect. This database was developed with the goal of assisting students and alumni in the process of career development. For more information, contact the Career Center.

Cooperative Education. The University provides a cooperative education program that integrates academic learning with a work environment. Students receive academic credit for a pre-arranged work experience. (See listing under specific departments/schools for credit and grading applicable to that major.) Department co-op advisors and students determine an appropriate work site in collaboration with the Cooperative Education Coordinator. The Coordinator then monitors the students' paperwork and progress throughout the quarter. For more information, contact the Career Center at 527-2664.

Service Learning. Many academic courses offer opportunities for students to participate in volunteer work in the community.

COUNSELING AND TESTING. Counseling and Testing Services (CTS) provides counseling and testing services for WWU students.

Counseling Services. The services provided by CTS are designed to help students deal with the pressures of university life. Students can receive help in dealing with personal problems, learning more about themselves, and in planning their future.

The counselors on staff are qualified to discuss a wide variety of issues, including loneliness, depression, stress, time management, test anxiety, study skills, relationship problems, eating disorders, incest and rape survival, dysfunctional family situations, and marital and premarital counseling. Issues may be worked through on an individual basis or in a group setting, and all counseling is strictly confidential.

Testing Services. Counseling and Testing Services 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 to be paid by the student directly to the testing company. Registration materials are available at the CTS Office. Tests administered at CTS include:

ACAT (Art majors)
American College Testing (ACT) Residual Test
College-Level Examination Program (CLEP)
Correspondence/Distance Learning Tests
English Placement Tests and Language Placement Tests
Graduate Record Examination (GRE) (subject tests only)
Law School Admission Test (LSAT)
Major Field Test (MFT)
Miller Analogies Test (MAT)
PRAXIS and Certified Health Education Specialist (CHES) Test

Addictive Programs. Counseling and Testing Services also provides services for students who are dealing with substance-use problems (alcohol, drugs, tobacco, etc.). University policy prohibits the use of tobacco, alcohol, and other drugs. Recognizing that not all students make choices consistent with this philosophy, CTS provides individualized assessment, testing, counseling, and referral services as well as a prevention program. Counseling and Testing Services works closely with residence hall deans and the Vice President for Student Life and Mission to insure that students receive adequate help and support to remain substance-free.

Services are also provided for students with other addictive behaviors including: eating, gambling, computer (internet, gaming, etc.), relationship, etc.

Fees and Scheduling. Most services offered by Counseling and Testing Services are free to students, with the exception of a few tests. Students requesting counseling services are asked to complete a short information form before a session is scheduled. The forms are available at CTS on the main floor of Meske Hall or at the CTS web site. If students have any questions they are free to call CTS at 527-2147 during office hours.

KGTS/Positive Life Radio is federally licensed as an educational, community-service station. At Positive Life Radio our mission is to be a community of believers promoting positive values through Christian music

radio. We accomplish by; 1. Stirring listeners toward a deeper relationship with Christ, 2. Equipping WWU students to impact their community through broadcast training, 3. Serving the Pacific Northwest through 5 partner stations and 13 translators. Owned by Walla Walla University and operated as an Academic Support department the station serves the Communications and Languages Department and others by training students in broadcasting, management, audio production, sales and development, engineering and research. KGTS/Positive Life Radio is funded primarily by listeners and local businesses with support from WWU.

The Positive Life Radio Network serves other Northwest radio stations with Christian music and programs 24 hours each day. Students receive practical experience in network programming and management.

LIBRARY. The combined WWU libraries contain over 200,000 book, video, DVD, e-book, and journal volumes. An average of 3,000 volumes is added each year. Access is provided to over 47,160 periodicals, mostly through full-text databases but also in print and microform.

Peterson Memorial Library. Research at WWU starts at the WWU Libraries home page (library.wallawalla.edu). The online catalog, along with over 120 databases to which the Library subscribes, can be searched from here. Many of the databases provide access to full-text journal articles. Links to web pages for students at the Portland and Montana campuses are also located on the library's home page.

Using the online catalog, students can search collections at the Peterson Memorial Library, Curriculum Library, Rosario Beach Marine Laboratory, MSW sites in Missoula and Billings, and the branch Nursing Library in Portland, Oregon.

Databases selected to support the University's curriculum are available from Articles under *Search and Find*, on the library's home page. They include such key resources as *Academic Search Premier, ProQuest, PsychInfo, SocIndex with Full Text, Computer and Applied Sciences Complete, Compendex, JSTOR Arts and Sciences 1-4 and Biological Sciences collections*, E.G. White Writings online, and the *SDA Periodical Index*. In addition, we are one of the smallest libraries to subscribe to the *Early English Books Online* database. Off-campus access to these databases is available, via an authentication process, to current students, faculty and staff of Walla Walla University. Subscriptions for many of the library's databases is made possible by membership in library consortia such as the Adventist Library Information Cooperative (ALICE) or the Orbis Cascade Alliance.

Individual and group study areas are available to meet a variety of study needs. Microform readers make accessible microforms of scholarly material and several TV/VCR/DVD units, located throughout the library, provide viewing points for media materials. A PC lab with twelve computers, one scanner, and a printer allow students to do library research and write papers all at one location. Additional computers are available in Peterson's lobby area. Peterson also offers two laptops for use within the library and wireless networking throughout the building.

The Summit Borrowing program, made available through membership in the Orbis Cascade Alliance, offers direct borrowing access to over 28 million books, sound recordings, films, and video tapes held by 34 other academic libraries in Washington and Oregon. Patrons request books directly through the Summit Catalog (summit.orbiscascade.org). Materials may be requested for pickup at the Peterson or Portland libraries and are delivered within three to four days. Unfortunately, at this time the Summit service is not available to the Montana MSW sites. Materials not available from any of the Walla Walla University Libraries or from Summit may be procured through Interlibrary loan.

Curriculum Library. Located in Smith Hall, this library contains professional literature on education, K-12 textbooks, children's literature, magazines, standardized tests, math and science manipulatives, games, and curriculum guides.

Portland Campus Library. This facility serves the specific needs of nursing students on WWU's Portland, Oregon campus.

Montana Libraries. Small site collections are available in Billings and Missoula to meet the needs of students enrolled in the MSW program at those locations.

Rosario Beach Marine Laboratory. A small collection of books is located at the marine laboratory. It provides some basic resources to students enrolled in summer biology classes there.

CAMPUS HEALTH AND WELLNESS

Main Campus
An on-campus University clinic with a highly qualified staff provides acute and some chronic care services for students requiring medical attention. Campus Health and Wellness personnel will assist with insurance billing as needed. 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
Adventist Health Ventura Park provides an evaluation of acute health care for students on the Portland Campus. 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.

TEACHING LEARNING CENTER. The Teaching Learning Center (TLC) 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, and reading and study skills classes are offered to improve those specific academic skills. Disability support services are available for students with documented disabilities.

DISABILITY SUPPORT SERVICES. Walla Walla University provides access to programs, services, facilities, and activities to "otherwise qualified" students with disabilities in accordance with the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and state laws. The Disability Support Services (DSS) office receives disability documentation, determines reasonable accommodations, and provides academic accommodations and support services for students with documented disabilities.

Examples of accommodations are: test accommodations, access to alternate formats of books, equipment and technology access, classroom relocation, note takers, and other services. Documentation is not a guarantee of service. Documentation should be submitted six weeks in advance, and services must be requested through the DSS office.

The DSS office is located in the lower level of Village Hall. For more information contact: Disability Support Services, Walla Walla University, 204 S. College Ave., College Place, WA 99324. Phone: 509-527-2366. Web: www.wallawalla.edu/resources/student-support-services/disability-support-services www.wallawalla.edu/resources/student-support-services/disability-support-services/

STUDENT RIGHTS AND RESPONSIBILITIES

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.*

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:

a. Performing a task that is specific in his or her job description or by a contract agreement; or
b. Performing a task related to a student's education; or
c. Providing a service or benefit relating to the student or student's family, such as health care, counseling, job placement, or financial aid.
d. To officials of another school, upon request, in which a student seeks or intends to enroll.
e. To 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.
f. In connection with 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.
g. If required by a state law requiring disclosure that was adopted before November 19, 1974.
h. To organizations conducting certain studies for or on behalf of the University
i. To accrediting organizations to carry out their functions.
j. To comply with a judicial order or a lawfully issued subpoena.
k. To appropriate parties in a health or safety emergency.
l. To 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 redisclosed, 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. E-mail 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

Walla Walla University welcomes to its school family any student who wishes 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.

Walla Walla University maintains a policy of equal educational opportunity for all applicants without regard to gender, race, color, religion, national and/or ethnic origin, age, physical or sensory disability while administering its educational and admissions policies, financial aid, employment programs, student life and services, or any other university-administered program.

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 Office of Enrollment or on the WWU web page at www.wallawalla.edu. Application should be made BY THE PREFERRED DEADLINE FOR EACH QUARTER. THE PREFERRED DEADLINES ARE: FALL QUARTER, **SEPTEMBER 1**; WINTER QUARTER, **DECEMBER 1**; SPRING QUARTER, **MARCH 1**; SUMMER QUARTER, **JUNE 1**. TO QUALIFY FOR PREREGISTRATION FOR FALL 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 and Freshmen Transfer Students
Students who have completed studies at the secondary level or are transferring with less than 36 ***transferable*** *quarter credits at the post-secondary level.* Minimum requirements for admission include:

1. A minimum grade-point average of 2.5.
2. Transcripts from the island territories of Federated States of Micronesia, American Samoa, Palau, and Puerto Rico must have a grade-point average of 3.30 or higher.
3. Graduation and official transcript from an accredited secondary school or the completion of the GED exam. GED scores must show a score of 45 or higher for each section of the exam and an average score of 50 or higher.
4. Official transcripts from each post-secondary institution attended.
5. Completion of the ACT and/or SAT test if transferring less than 30 quarter hours. These tests are required for academic advisement.
6. 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. Recommendation forms may be submitted online.
7. Official copies of your TOEFL test scores if English is not your first language. Ask the Testing Service to send these scores directly to the Walla Walla University Office of Enrollment.

Students with United States system secondary school background should present the following semester credits for admission:

	Semester Credits
English	40
History	20
Algebra I	10
Algebra II	10
Geometry	10
Science	10
Laboratory Science	10

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. Any student admitted with a grade-point average below 2.5 is required to enroll in GNRL 100, Principles of Systematic Study, a non-college-credit preparation course.

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 obtained 36 or more transferable quarter credits at the post-secondary level. Minimum requirements for admission include:

1. A grade-point average of 2.00.
2. Transcripts from the island territories of Federated States of Micronesia, American Samoa, Palau, and Puerto Rico need to have a grade-point average of 3.30 or higher.
3. Graduation and official transcript from an accredited secondary school or the completion of the GED exam. GED scores must show a score of 45 or higher for each section of the exam and an average score of 50 or higher. (Transfer students who have junior or senior status are not required to supply WWU with an official high school transcript.)
4. 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.
5. Official transcripts from all post-secondary institution attended.

6. 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.
7. Official copies of your TOEFL test scores if English is not your first language. Ask the Testing Service to send these scores directly to the Walla Walla University Office of Enrollment.

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

Accredited Colleges. Applicants who have attended North American 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 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 36 quarter hours, 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 Office of Enrollment.

Returning Students

Students who have attended Walla Walla University, but were not enrolled the preceding quarter (excluding summer quarter) are classified as returning students. Minimum requirements for readmission include:

1. A grade-point average of 2.00 on course work taken at Walla Walla University or a cum 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 Enrollment 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.

Special Students

Students who are currently enrolled as a senior in secondary school and who have permission from their principal, may register for selected Walla Walla University courses. Special students are not eligible for financial aid. Application needs to be made through the Office of the Vice-President for Academic Administration.

ADMISSION PROCEDURES

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

Application and Application Fee

Applications must be completed entirely, printed in *ink* or typed, and signed by the applicant to begin the admissions process. Applications may also be submitted on-line at www.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 the registrar of each institution attended and have them sent directly to the Enrollment 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. Transfer student who are entering WWU are not required to supply an official high school transcript if they have junior or senior level status. 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've been out of high school for 5 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 adviser, 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 http://www.wallawalla.edu/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 from the Office of Enrollment or online at http://www.wallawalla.edu/enrollment/apply/references.pdf.

TOEFL 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 following TOEFL scores are required for entry into Walla Walla University:

A score of 79 or higher on the internet-based exam.
A score of 213 or higher on the computer-based exam.
A score of 550 or higher on the written exam

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 Enrollment Office, prompt notification of acceptance is sent. Some applicants may be provisionally accepted if they have met the admission requirements but still have an official transcript outstanding. **Applicants should not consider themselves accepted (and should not plan to reside or work on campus) until an official letter of acceptance is received.** Applicants may check on the status of their application by calling 1-509-527-2327, 1-800-541-8900 or by consulting the WWU system.

Room Deposit

A $175 deposit is required to reserve a residence hall room. Upon the student's departure, a refund of up to $115 may be applied to the student's account. Charges for delayed departure, an uncleaned or damaged room, or failure to return keys are also applied. Should the student not enroll, the entire deposit is refunded. See the Financial Information section of this bulletin for residence hall costs.

Medical Information

The Campus Health and Wellness office is directed by a registered nurse practitioner. Students are required to complete an insurance form and a Personal Health Assessment record, inclusive of immunization status. Forms are available from Campus Health and Wellness or on-line (www.wallawalla.edu).

Immunization documentation required for admission includes: (a) tetanus-diphtheria (DT or Td) booster within the past 9 years; and (b) two measles-mumps-rubella (MMR) vaccines. Also recommended are 4 or more oral polio vaccines (OPV). MMR and Td are available for a fee through Campus Health and Wellness.

ADMISSIONS 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:

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

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://www.wallawalla.edu/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 Office of Enrollment, Walla Walla University. International transcripts will be evaluated in conjunction with published guidelines for each country.

5. Official copies of your TOEFL test scores. Ask the Testing Service to send these scores directly to the Walla Walla University Office of Enrollment.

Prior to acceptance into any program and before an I-20 form is issued to international students, a $6,000 (U.S.) deposit is necessary (except Canadian and specified U.S. Trust Territory students). See International Students 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.**

ACADEMIC INFORMATION AND POLICIES

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 are upper classmen. Continuing lower classmen 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 end of the second day of classes will have their registration cancelled and will have to re-register on a space available basis. Faculty advisers are available to assist students with registration and in planning academic programs.

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 Enrollment 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.

FRESHMAN EXPERIENCE. All freshmen are expected to attend the JumpStart Program, (Freshmen 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 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 Fee Section of the *Financial Bulletin*.

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 adviser; there is also a fee for each course added or dropped. **Courses may not be added after the tenth day of any quarter.**

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.

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 adviser. 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.

WHITMAN COLLEGE RECIPROCAL AGREEMENT. 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.

ADMISSION TO UPPER-DIVISION STATUS. A student may register for upper-division courses **provided that he/she has completed a general studies mathematics course, ENGL 121, 122, and has completed or is currently registered for 223, or 323 (College Writing or its equivalent) and has completed 45 quarter hours of university course work.**

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.

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 Fee section of the student *Financial Bulletin*.

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)

SPECIAL STUDENTS. Students who are currently enrolled as students in secondary school and who have permission from their principal to take certain college-level courses are classified as special students.

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.

Violation of academic integrity 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.

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.** The AU, I, IP, NC, S, W and X are disregarded in computing the grade-point average.

A report of grades is available on the WWU web-site for students (and parents of dependent 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

In the case of incomplete work due to justifiable cause, the instructor may assign a grade of Incomplete, allowing the student an extension of time to complete the course requirements. The Incomplete is not a permanent grade. The instructor for the course also submits a default grade for the course that the student will be assigned if no further work is done in the allotted time, taking into account all the course requirements.

Submission of all required work is due to the teacher three weeks before the close of the following term (excluding summer session for undergraduates). Extraordinary appeals should be directed to the Associate Vice President for Academic Administration/Graduate Studies.

I* — Standing Incomplete

IP — In Progress

IP grading approved for undergraduate approved courses, particularly courses that extend beyond regular grading periods. Courses to receive IP grading will be approved by Curriculum Committee.

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.

AU — Audit

GRADE ERRORS AND CORRECTIONS. Grades will be processed and posted to the Web for viewing at the close of each quarter. Upon viewing grades via the secured web site, 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.

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 adviser.

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-Present for Academic Administration. A copy of the letter is also provided to each student's academic adviser. 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.
2. 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.
3. A biweekly conference with the academic adviser is expected.
4. The student may be required to participate in a special mentoring program at the discretion of the Associate Vice-President for Academic Administration. A fee for this service will be charged to the student's account.

5. Courses outside the University, such as correspondence or online courses, are not permitted.
6. Participation in the University Athletics Program or Adventist Colleges Abroad is not permitted.
7. Extracurricular activities which necessitate class absences are not permitted.
8. The student is not permitted to hold office in any student organization or serve as a student missionary or taskforce worker.

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 Fee section of the *Financial Bulletin*.

TRANSCRIPTS. Official transcripts are issued from the Academic Records Office. Transcript requests must be in writing using a transcript request form or personal letter. Forms are available in the Academic Records Office or online at www.wallawalla.edu/academics/forms/records/transcript.pdf. Letters must include the student's ID number or Social Security number, birth date, dates *of attenda*nce, signature and return address. Requests for faxed transcripts must include the following statement, "I realize my privacy may not be maintained." Faxed transcripts are not official transcripts. Transfer credit is not recorded after a student has ceased attendance at the University.

Note: A student receiving financial aid must also meet satisfactory progress standards adopted by Student Financial Services. See the Financial Policies section of the *Financial Bulletin* for details.

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 G.P.A. above 3.75 appear on the Dean's List of Distinguished Students.

GRADUATION WITH HONORS. Candidates for the baccalaureate degree with the appropriate G.P.A. 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 Special Fees in the Academic Fee 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. A maximum of 24 quarter hours by examination may be counted toward a baccalaureate degree and a maximum of 12 quarter hours may be counted toward an associate degree excluding validation examinations.
5. Grades are issued as on normal test scores, and all grades are recorded on the permanent record of the student.
6. Examinations may not be repeated.
7. Repeat course work and F grades are not open to credit by examination.
8. Students may not take challenge or waiver examinations on courses they have audited.
9. Examinations must be taken prior to the last 3 weeks of any quarter.
10. 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, 142, 143. AP credit for Biology may not be accepted by some professional programs.

Chemistry 141, 142, 143 General Chemistry
Students receiving a score of 3 or greater on the AP Chemistry examination will be granted credit for 12 quarter hours of CHEM 141, 142, 143. 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 Introduction to Programming and 142 Data Structures, Algorithms, and Objects
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 142.

English 121, 122 College Writing I, II
Students obtaining a 3 on the Advanced Placement Language and Composition examination will be awarded 3 quarter hours as a substitute for ENGL 121. Those obtaining a 4 or 5 will be awarded 6 quarter hours as a substitute for ENGL 121 and 122. All students must take ENGL 223 or 323. Advanced placement credit may not be applied to HONR 141 or HONR 142.

English 121, College Writing, and 204 Introduction to Literature
Students obtaining a 3 on the Advanced Placement Literature and Composition examination will be awarded 4 quarter hours as a substitute for ENGL 204. Those obtaining a 4 or 5 will be awarded 7 quarter hours as a substitute for ENGL 204 and ENGL 121. All students must take ENGL 122 and ENGL 223 or 323. Advanced placement credit may not be applied to HONR 141 or HONR 142.

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.

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).

Mathematics 181 Analytic Geometry and Calculus I
Students obtaining a score 3 or 4 on the AB test will receive 4 quarter hours for MATH 181.

Mathematics 181, 281 Analytic Geometry and 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 281.

Mathematics 181, 281, 282 Analytic Geometry and Calculus I, II, III
Students obtaining a score of 5 on the BC test will receive 12 quarter hours for MATH 181, 281, and 282

COLLEGE-LEVEL EXAMINATION PROGRAM (CLEP). Walla Walla University grants credit for selected undergraduate college courses. For dates and specific information candidates should consult Counseling and Testing Services (Meske Hall, phone #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 English Composition With Essay Examination will receive credit for ENGL 121. All students must take ENGL 122, or HONR 142, followed by ENGL 223 or 323 or HONR 243.

History 221, 222 History of the United States
Students who earn a scaled score of 50 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 117 Accelerated Precalculus
Students obtaining a scaled score of 55 in the Precalculus Test will receive 5 quarter hours, which will fulfill the basic general-studies mathematics requirement.

Mathematics 121 Precalculus Mathematics I
Students obtaining a scaled score of 55 in the College Algebra test will receive 4 quarter hours, which will fulfill the basic mathematics requirement.

Mathematics 181 Analytic Geometry and 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 40-44 will receive 4 quarter hours in level 101. Students obtaining a scaled score of 45-49 will receive 8 quarter hours in levels 101 and 102. Students obtaining a scaled score of 50 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 Child and Adolescent Development
Students who earn a score of 50 on the Human Growth and Development exam will receive 4 quarter hours for PSYC 215.

French Examinations
Students obtaining a scaled score of 44-48 will receive 4 quarter hours in level 101. Students obtaining a scaled score of 49-53 will receive 8 quarter hours in levels 101 and 102. Students obtaining a scaled score of 54 and above will receive 12 quarter hours in levels 101, 102 and 103.

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 repeat a course in which credit has been granted and grades have been received; however, academic credit may be earned only once. Regardless of the number of times a course is repeated, only the best grade will be computed in the grade-point average, though all grades will remain on the permanent record. This repeat work must be taken in a regularly offered class. Challenge examinations and independent or directed study arrangements are not allowed for repeat course work. Repeat course work for which an F has been received must be completed in residence unless permission to do otherwise is granted by the Academic Standards Committee.

DISTANCE LEARNING

Distance Learning courses taken through accredited institutions of higher education are acceptable as transfer credit by the University. Students not enrolling in a WWU Distance Learning Program must obtain prior approval from their major department chair and Academic Standards Committee in order to be dually enrolled in a distance learning program. Seniors must have all distance learning completed prior to the beginning of their last quarter in residence.

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 an organization in 1967 for the purpose of providing opportunities for qualified students to study abroad while completing the requirements of their programs. The ACA program allows students to immerse themselves in the culture and life of the host country and to become conversant in the language. Presently, students may take a full year at:

Brazil Adventist University, Sao Paulo, Brazil	(Portuguese)
Friedensau Adventist University, Sachsen-Anhalt, Germany	(German)
Saleve Adventist University, Collonges-sous-Saleve	(French)
Seminar Schloss Bogenhofen, Braunau, Austria	(German)
Istituto Avventista Villa Aurora, Florence, Italy	(Italian)
Colegio Adventista de Sagunto, Sagunto, Spain	(Spanish)
Universidad Adventista del Plata, Entre Ríos, Argentina	(Spanish)

Prerequisites for admission to a year of study abroad through ACA are:

1. Admission as a regular student of Walla Walla University.

2. Competence in the language (minimum: one year of college language or two years of secondary study).
3. A grade-point average of 3.00 in the language and an overall grade-point average of 2.50.
4. A good citizenship record.
5. Application to the Academic Records Office on the special ACA application form.
6. Ability to meet the financial requirements.

Students planning to study under this program must submit a completed ACA application with a $100 refundable deposit by July 15, as there are usually more applications than spaces available. Information and applications may be obtained from the Academic Records Office or online at 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 Communications 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.**

ACADEMIC PROGRAMS AND GRADUATION REQUIREMENTS

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 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 Education (M.Ed.)
Master of Arts in Teaching (M.A.T.)
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 Office of Enrollment 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, international business, management, and marketing. For specific requirements, see the School of Business 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 approved by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc., requiring 200 quarter hours of course work. It is designed to prepare students for entry into the profession of engineering and for life long learning including programs of advanced study in civil, computer, electrical and mechanical engineering or associated fields. For the modified general studies program and other specific requirements, see the 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 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 adviser. It is best if a major would 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 adviser.

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. **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, must register for GNRL 401. A fee will be charged 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 each quarter. All course work must be completed, transcripts received, comprehensives taken and acceptable grades received before the degree will be awarded.

Degree conferral dates for the 2011-2012 school year are:

Autumn	December 30, 2011
Winter	March 30, 2012
Spring	June 10, 2012
Summer	August 24, 2012

Commencement Exercises

Commencement exercises are held once a year in June. Students who have completed their requirements summer, autumn or winter quarter may participate in the following June commencement exercises. Those anticipating the completion of an approved degree program during the upcoming summer quarter may apply to the Academic Records Office requesting 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. A minimum cumulative GPA of 2.00 for all university work.
2. An approved degree application (Senior Outline) on file in the Academic Records Office showing a completion date for summer.
3. No more than twelve (12) credits to complete after spring quarter, including summer courses and outstanding "I"s and "IP"s.
4. Remaining credits must meet residency requirements.

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

Graduations 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 several majors or minors, but credit will apply to only one unless otherwise stated. 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.**
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 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.

1. **Transcripts and Correspondence Work.** Seniors must have all transfer transcripts on file in the Academic Records Office prior to the end of the final quarter in residence to avoid delay of graduation.
2. **Second Baccalaureate Degree.** Two baccalaureate degrees with majors from different disciplines may be conferred concurrently or sequentially if the candidate has met all the requirements, completed a total of 237 quarter hours, and has spent a minimum of three quarters (36 quarter hours) in residence. See requirements 2 and 3 regarding majors.
3. **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.
4. **Academic Profile Examination.** In order to assist the University in its assessment program, all seniors graduating with a baccalaureate degree are required to take the Academic Profile Examination before graduation.

STUDENT RESPONSIBILITY FOR MEETING DEGREE REQUIREMENTS

While your adviser 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
- 237 quarter hours for second degree (or for two 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 adviser and the Records Office to be sure the credits satisfy requirements needed.

___ Residency requirements:

Final 3 quarters and final 36 credits must be on campus.
20% of major credits (including 9 upper-division) must be on campus
20% 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 adviser 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 MISSION

In keeping with the mission of the University, the educational program at Walla Walla University assists students in becoming responsible, contributing participants in church and society. As part of the educational program, the general studies requirements provide a balanced education through course offerings that encourage students to develop a breadth of knowledge covering many disciplines. General studies courses have few, if any, prerequisites and thus are readily available to all students.

The following specific objectives have been determined for the general studies program at Walla Walla University and will provide opportunities for students to achieve the broader general studies goals through a diversity of experience:

Students will enhance their understanding of:

God

- Students will develop an understanding of God, as revealed in Jesus Christ, His Word, His Creation, and His engagement with human beings.

Human Beings

- Students will gain exposure to various cultures in a social, historical, and geographical context.
- Students will become familiar with the behavior and responsibilities of individuals and societies.
- Students will explore the world of artistic and literary expression and integrate it into personal experience.
- Students will develop an understanding of wholistic approaches to personal wellness and human relationships.

The Natural World

- Students will develop an integrated understanding of science and technology and their roles in society.
- Students will develop an understanding of stewardship and ethical responsibility toward the environment.

Students will improve their skills in:

Critical and Creative Thinking

- Students will develop the skills for reflection, analysis, criticism, synthesis, and an openness conducive for philosophical thinking.
- Students will learn to obtain and evaluate information.

Mathematical Reasoning

- Students will develop problem-solving skills and gain an appreciation for the beauty and utility of mathematics.

Communication

- Students will learn to formulate, organize, and communicate ideas and information effectively and responsibly.

Collaboration

- Students will learn to engage in collaborative endeavors.

Following is an outline of the general studies requirements for the various degrees. A full description and a listing of general education courses follow in the section dealing with specific required courses.

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 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.

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

GENERAL STUDIES - SPECIFIC REQUIRED COURSES

The range of hours for each area below indicates the minimum number of hours that must be chosen from that area and the maximum number of hours from that area that may count toward the total requirement. Some areas are subdivided, with ranges from each subdivision indicating the minimum that must be taken from that subdivision and the maximum that may count toward that area requirement. Credits earned beyond the listed maximum may be counted as general electives.

Engineering majors should consult the engineering section for general studies requirements.

HEALTH and PHYSICAL EDUCATION **2-6**

Courses should introduce the student to health principles and, by stressing both theory and activity, emphasize the pursuit of healthful living. (No more than 4 quarter hours from any one area will count toward the requirement.)

Activity Courses: 2-4

ALL PEAC 107-195 Activity Courses

Theory Courses in Health: 0-4

HLTH	110	Wellness for Living	3
HLTH	208	Drugs and Society	3
HLTH	220	Human Nutrition	4

HISTORY and SOCIAL SCIENCE **12-20**

Courses in history and social science should help the student understand the forces that have shaped the individual in his culture and society.

History courses should 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.

Social science courses should contribute to the student's understanding of the ideas, logic, and methods of the scientific study of human relations.

History: 8-12

HIST	120, 121, 122	History of Western Civilization	4, 4, 4
HIST	221, 222	History of the United States	4, 4
HIST	242	Modern East Asian History	4
HIST	254	History of Christianity	4
HIST	274, 275	History of England	4, 4
HIST	283	Spain and Latin America	4
HIST	305	The Ancient Near East	4
HIST	306	Classical Greece and Rome	4
HIST	354	American History and Visual Culture	4
HIST	357	The African-American Experience	4

Social Science: 4-12*

(Must include at least one of the following: ANTH 225, PSYC 130, PSYC 344, or SOCI 204)

ANTH	225	Cultural Anthropology	4
COMM	145	Mass Communication Media	4
ECON	204	Fundamentals of Economics	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
EDUC	210	Foundations of Education	3
**ENVI	385	Environmental Stewardship	4
GBUS	361	Business Law I	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	3
SOCI	204	General Sociology	4
SOCI	225	Marriage and Family Life	2
SOCI	234	Current Social Problems	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

* If more than one course is selected from list, courses chosen must be from two or more subject areas.

** Only two hours will apply toward the social science requirement; the other two hours will apply to natural science.

HUMANITIES **12-16**

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

Fine Arts: 0-8

ART	251	Introduction to Art	4
ART	312	Aesthetics and Photography	4
ART	324, 325, 326	History of World Art	3, 3, 3
MUHL	124	Introduction to Music	4
MUHL	134	World Music	4
ENGL/DRMA	363	History of Theatre	4

Literature: 0-8

ENGL	204	Introduction to Literature	4
*ENGL	210, 211, 212	Survey of English 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	312	Development of Film Literature	4
FILM	315	Genre Film Survey	4
FILM	318	Film Studies:	4
FILM	319	American West in Document and Film	4
FREN	370	Survey of French Literature	4
FREN	407	Survey of French and Francophone Literature	4
FREN	408	Contemporary French and Francophone Literature	4
SPAN	370	Survey of Spanish Literature	4
SPAN	407	Survey of Spanish and Latino Literature	4
SPAN	408	Contemporary Spanish and Latino Literature	4

*Registration requires permission of instructor.

Philosophy: 0-8

EDUC	410	Philosophy of Education	3
PHIL	204	Essentials of Critical Reasoning	4
PHIL	205	Introduction to Philosophy	4
PHIL	305	Moral Philosophy	4
PHIL	306	History of Philosophy I: Ancient	4
PHIL	307	History of Philosophy II: Medieval-Early Modern	4
PHIL	407	Philosophy of Science	4
PHIL	410	Philosophy of Education	3
PHIL	412	Philosophy of Religion	4
SPCH	341	Argumentation	4

LANGUAGE ARTS **13-21**

Courses should 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.

College Writing: 9

ENGL	121, 122	College Writing I, II	3, 3
ENGL	223	Research Writing	3
ENGL	323	Writing for Engineers	3

Speech and Writing: 0-12

The first course in the speech and writing area must be selected from speech courses.

ENGL	184	Grammar and Style	3
JOUR	245	Media Writing	4
JOUR	341	Magazine Article Writing	4

SPCH	101	Fundamentals of Speech Communication	4
SPCH	207/407	Advanced Small Group Communication	3
SPCH	443	Persuasive Speaking	4
WRIT	324	Creative Nonfiction Writing	3
WRIT	334	Poetry Writing	3
WRIT	335	Narrative Writing	3
WRIT	336	Drama Writing	3

Foreign Language: 0-12

12 credits of elementary (1 quarter of Introduction and 2 quarters of elementary) or 8 credits of intermediate (2 quarters each).

All B.A. students are required to complete a foreign language sequence of:

- 12 quarter hours
- or 8 quarter hours at the intermediate level

FREN	101,102, 103	Elementary French	4, 4, 4
FREN	201, 202	Intermediate French	4, 4
GREK	231, 232, 233	Greek I	3, 3, 3
GREK	331, 332	Greek II	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
LATN	311, 312, 313	Latin II	4, 4, 4
SPAN	101,102, 103	Elementary Spanish	4, 4, 4
SPAN	201, 202	Intermediate Spanish	4, 4

MATHEMATICS and NATURAL SCIENCE 12-16

Courses in mathematics should emphasize mathematical thought and practice and the relationship of mathematics to other disciplines. Courses in science should emphasize methods of measurement and discovery and should help the student to understand through theory and practice how hypotheses are developed, tested, and applied. (A minimum of 8 quarter hours must be taken from one course sequence in a laboratory science area.)

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.

Mathematics: 4-8

MATH	105	Finite Mathematics	4
MATH	112, 113	Mathematics for Elementary Teachers	3, 3
MATH	117	Accelerated Precalculus	5

MATH	121, 122	Precalculus Mathematics I, II	4, 4
MATH	123	Survey of Calculus	4
MATH	181, 281	Analytic Geometry and Calculus I, II	4, 4
MATH	206	Applied Statistics	4
MATH	282, 283	Analytic Geometry and Calculus III, IV	4, 4

Natural Science: 8-12*

ASTR	141, 142, 143	General Astronomy	3, 3, 3
ASTR	144, 145, 146	General Astronomy Laboratory	1, 1, 1
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
BIOL	407	Philosophy of Science	4
CHEM	101, 102	Introductory Chemistry	4, 4
CHEM	141, 142, 143	General Chemistry	3, 3, 3
CHEM	144, 145, 146	General Chemistry Laboratory	1, 1, 1
ENGR	310	Sustainable Energy Systems	2
ENVI	151	Environmental Principles	4
**ENVI	385	Environmental Stewardship	4
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

*Eight hours must be taken from one course sequence.

**Only two hours will apply toward the natural science requirement; the other two hours will apply to social science.

RELIGION and THEOLOGY **16-20**

Courses in religion and theology should 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	Seventh-day Adventist Belief and Practice
RELT	202	Christian Beliefs
RELT	417	Inspiration and Revelation
RELH	457	History of Adventism

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 SDA 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 SDA 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 SDA 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: 6-20

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	312	Daniel and Jeremiah	4
RELB	321	Interpreting the Bible	4
RELB	333	Biblical Perspectives on Healing	4
RELB	406	The Bible and Its Translations	2
RELB	413	Revelation	3
RELB	437	Matthew, Mark and John	4
RELB	439	Luke-Acts	4
RELB	441	Scribes, Manuscripts, and the New Testament	2
RELB	454	Literature of the Bible	4

RELB	462	Sin, Salvation, and The Writings of Paul	4
RELB	467	Conflict and Hope in The Later New Testament Letters	4

Religion or Theology: 0-14

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	201	The Christian Way of Salvation	4
RELT	202	Christian Beliefs	4
RELT	204	Contemporary Issues in Adventist Thought	4
RELT	326	Spirituality and Discipleship	4
RELT	340	Spiritual Care and Nursing	4
RELT	342	Issues of God and Faith	3
RELT	348	Christian Ethics	4
RELT	352	The Christian and The Environment	2
RELT	412	Philosophy of Religion	4
RELT	417	Inspiration and Revelation	3
SOCI	449	Sociology of Religion	3

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

1. **If the student has a degree from WWU:**
   a. The student must meet all general studies bulletin requirements for the second degree.
   b. The student must complete an additional 45 credits to reach a minimum total of 237 credits (245 credits if one of the degrees is engineering).
   c. A minor is not required.
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.

HONORS GENERAL STUDIES PROGRAM

The Honors General Studies Program offers a group of interdisciplinary courses stressing independent research, writing, and discussion.

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. 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 the Honors Program Director for specific details and scholarship amounts. At graduation, students who complete the Honors Program requirements will be designated as "Honors General Studies Graduates."

Admission Requirements. The Honors Admissions Committee considers high school G.P.A., 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. Students whose grades fall below a cumulative G.P.A. of 3.0 or an Honors core/cognate G.P.A. of 2.75 for two consecutive quarters will be dropped from the program. 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.

For B.B.A., B.S., and B.S.W.: Honors core, honors core cognates, and additional honors electives to total 68 hours.

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

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

Core Requirements:

HONR	131, 132, 133	Western Thought	12
HONR	141, 142	*Honors Writing I, II	6
HONR	243	Honors Research Writing	3
HONR	281	The Bible and Its Environments	4
HONR	310, 311	Science and The Arts	8
HONR	348	Topics in World Religious Thought	4
HONR	349	Religion in a Social Context	4
HONR	496, 497, 498	Honors Seminar: Faith and Learning	3

Honors Core Cognates:

PEAC		Two activity courses	2
MATH	123	Survey of Calculus	
or			4
MATH	181	Analytic Geometry and Calculus I (Strongly Recommended)	

Select one of the following sequences, 8 credits:

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

*All Honors students are required to take HONR 141, 142. Honors students who have achieved a 3 on the AP Language and Composition Exam will be awarded 3 hours of elective credit (ENGL 121). Honors students who have achieved a 4 or 5 on the AP Language and Composition Exam will be awarded 6 hours of elective credit (ENGL 121, ENGL 122). Honors students who have achieved a 4 or 5 on the AP Literature and Composition Exam will be awarded 3 hours of elective credit (ENGL 121). Honors students who have obtained credit for the equivalent of ENGL 121 and/or ENGL 122 will be awarded 3-6 hours of elective credit. 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.

Honors Electives for B.A., B.B.A., B.S., and B.S.W. Degrees:

Choose additional courses from the following list. Courses that are part of the student's major or minor do not apply to this category.

Study Tours/archaeology field work/Oxford program/Council of Christian Colleges and Universities Program*

ART	312	Aesthetics and Photography	4
ART	324, 325, 326	History of World Art	3-9
COMM	357	Communication Law and Ethics	4
DRMA/ ENGL	363	History of Theatre	4
ENGL	313	Image and Text	4

ENGL/ HIST	357	The African-American Experience	4
ENGL	358	Classical Literature	4
ENGL	359	World Literature	4
ENVI	385	Environmental Stewardship	4
HIST	305	The Ancient Near East	4
HIST	306	Classical Greece and Rome	4
HIST	354	American History and Visual Culture	4
HIST	460	Science and the Enlightenment	4
HONR	394	Honors Directed Reading	1-3
HMNT	496, 497	Seminar: History of the Human Body	1-3
PHIL	204	Essentials of Critical Reasoning	4
PHIL	305	Moral Philosophy	4
PHIL	407	Philosophy of Science	4
RELB/ ENGL	454	Literature of the Bible	4
RELM	233	Introduction to Cross-Cultural Ministry	3
RELT	342	Issues of God and Faith	3
RELT	348	Christian Ethics	4
RELT/ PHIL	412	Philosophy of Religion	4
RELT	417	Inspiration and Revelation	3
SOCI	236	Privilege and Oppression	4
SOCI	420	Immigration and Identity	4
SOCI/ PSYC/ SOWK	437	Death and Dying	3
TECH	321	Technology and Society	4
WRIT	324	Creative Nonfiction Writing	3

*Must be approved by the Honors Program director before enrollment.

HONORS COURSES (HONR)

HONR 131, 132, 133 and HONR 141, 142, 243 are prerequisite to all upper-division honors courses.

The Honors Program requires the completion of HONR 141, 142, and 243. ENGL 121, 122, 223, 323, AP credit, IB credit, or CLEP credit may not be substituted. Students transferring into the Honors Program from other institutions will be asked to provide a portfolio of writing assignments and may be asked to fulfill an Honors Directed Writing requirement in preparation for Honors Research Writing.

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 131 is a prerequisite to HONR 132 and HONR 133.

HONR 141 HONORS WRITING I **3**

Emphasizes scholarly methods of reading and writing about texts. (Course fees apply.)

HONR 142 HONORS WRITING II **3**

Presents exercises in style, in the practice of prose, and the refinement of voice and clarity in writing. Assignments focus on methods of holding to a subject, hearing language, and practicing the traditional rhetorical forms. The course concludes with an approved proposal and research plan for the papers to be written in HONR 243. Prerequisite: HONR 141. (Course fees apply.)

HONR 143 DIRECTED HONORS COLLEGE WRITING **1-2;2**

Provides additional practice in scholarly methods of reading and writing about texts. Permission of instructor required.

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 HONR 141 and 142. Public presentation of the final papers is required. Prerequisite: HONR 141, 142. (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, 311 SCIENCE AND THE ARTS **4, 4**

Study of science in its historical context and its relationship to the humanities. Laboratory included. Completion of both quarters satisfies 4 hours laboratory science and 4 hours humanities (fine arts); completion of one quarter satisfies 4 hours laboratory science or 4 hours humanities (fine arts). Prerequisites: HONR 131, 132, 133; math and lab science cognates.

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 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. Prerequisites: HONR 132 or HONR 133 and HONR 243.

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.

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.

General Studies Requirements for the Associate Degree:

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

	Hours Min/Max in specific subject areas	Hours Min/Max in general areas
Health and Physical Education		**0-2**
History and Social Science		**0-8**
History	0-8	
Social Science	0-8	
Humanities		**0-8**
Fine Arts	0-4	
Literature	0-4	
Philosophy	0-4	
Language Arts		**9-13**
ENGL 121, 122, 223	9	
Speech and Writing	0-4	
Foreign Language	0-4	
Mathematics and Natural Science		**0-8**
Mathematics	0-8	
Natural Science	0-8	
Religion and Theology		**6-8**
Biblical Studies	4-8	
Electives in Religion or Theology	0-4	
	Total Required	**32**

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 (Fall to Summer) is designated "odd" or "even" by the beginning year of Fall 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; 6**

Short-term, concentrated experiences which require a minimum of out-of-class assignments and are usually conducted in large blocks of time. These courses are approved by Curriculum Committee as a one-time offering. 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 adviser on research activities such as literature search, preliminary experiments, data collection, data transcription, or data analysis. Graded S/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.

494 COOPERATIVE EDUCATION **0-12; 12**

Practical experience in the major in an off-campus setting. Departmental approval required. See individual departments for specific course description.

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

Tom Emmerson, Chair; Martha Mason.

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 commercial art. Commercial art is designed to develop skills in working with the printed word and visual communication; fine art will prepare the student as a professional artist or art teacher or will provide preprofessional training in allied fields.

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 Art Gallery; the show is to be completed with the approval and coordination of the art faculty. All senior art majors are also to prepare a slide portfolio of their art work as part of the senior comprehensive. The slides should consist of 20 images in either traditional transparency format or any digital format such as cross-platform CD-ROM is acceptable. All senior art majors are also required to complete an assigned 5-page paper and take an art major field test (ACAT).

ART MAJOR CORE REQUIREMENTS:

ART	161, 162, 163	Design	9
ART	184, 185, 186	Introduction to Drawing I, II, III	6
ART	324, 325, 326	History of World Art	9
Select 12 credits from the following options:			12
ART	194, 195, 196	Introduction to Painting I, II, III	
ART	264, 265, 266	Introduction to Sculpture I, II, III	
ART	284, 285, 286	Introduction to Pottery I, II, III	
ART	294, 295, 296	Introduction to Printmaking I, II, III	
			36

FINE ART CONCENTRATION

ART	344, 345, 346	Advanced Design	9
Electives chosen from courses listed below (limited to 5 areas):			*14
ART	194, 195, 196	Introduction to Painting I, II, III	
ART	201	Calligraphy	
ART	264, 265, 266	Introduction to Sculpture I, II, III	
ART	284, 285, 286	Introduction to Pottery I, II, III	
ART	294, 295, 296	Introduction to Printmaking I, II, III	
ART	307, 308, 309	Drawing IV, V, VI	
ART	317, 318, 319	Printmaking IV, V, VI	
ART	334, 335, 336	Painting IV, V, VI	
ART	364, 365, 366	Sculpture IV, V, VI	
ART	374, 375, 376	Pottery and Ceramic Sculpture IV, V, V	
			23

*Six hours must be upper-division.

Cognates: Fine Art

ENGL	358	Classical Literature	4
HIST	120, 121	History of Western Civilization	8
RELH	303	World Religions	
or			4
ENGL	313	Image and Text	
SOCI	236	Privilege and Oppression	
or			4
PHIL	205	Introduction to Philosophy	

COMMERCIAL ART CONCENTRATION

ART	244, 245, 246	Commercial Art	6
ART	344, 345, 346	Advanced Design	9
Select 8 credits from the following options:			*8
ART	194, 195, 196	Introduction to Painting I, II, III	
ART	201	Calligraphy	
ART	294, 295, 296	Introduction to Printmaking I, II, III	
ART	307, 308	Drawing IV, V	
ART	317, 318	Printmaking IV, V	
ART	334, 335, 336	Painting IV, V, VI	
			23

*Four hours must be upper-division.

Cognates: Commercial Art

GRPH	255	Graphic Design and Layout	4
HIST	120, 121	History of Western Civilization	8
PHTO	156	Principles of Photography	3
PHTO	256	Digital Photography	3

ART MINOR

A student minoring in art must complete 33 quarter hours:

ART	161, 162, 163	Design	9
ART	184, 185, 186	Introduction to Drawing I, II, III	6
ART	324, 325, 326	History of World Art	9
		Electives	9
			33

Approval of art adviser required.

ART COURSES (ART)

ART 161, 162, 163 DESIGN **3, 3, 3**

Intensified study of the basic elements of design aimed to develop cognizance of visual organization.

ART 184, 185, 186 INTRODUCTION TO DRAWING I, II, III **2, 2, 2**

Experience in the use of line in representational and nonfigurative approaches, with application to still life and portraiture.

ART 194, 195, 196 INTRODUCTION TO PAINTING I, II, III **2, 2, 2**

Introduction to painting with the media chosen by the instructor from among water, acrylic, and oil-based pigments. Includes instruction in design and drawing.

ART 201 CALLIGRAPHY **2**

Introduction to italic handwriting with emphasis on the creative aspects of page layout and design and on developing a beautiful style. Includes individual study of selected hands chosen from foundational, uncial, chancery cursive, or gothic hands.

ART 244, 245, 246 COMMERCIAL ART **2, 2, 2**

Introduction to the various processes and media of commercial art, with emphasis on layout, design, new directions, and craftsmanship. First quarter covers the basic principles of proportion and design applied to letters of the alphabet.

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 264, 265, 266 INTRODUCTION TO SCULPTURE I, II, III **2, 2, 2**

The study and application of three-dimensional forms in space using varied media such as clay, plaster, plasticene, and paper. (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, 295, 296 INTRODUCTION TO PRINTMAKING I, II, III **2, 2, 2**

Introduction to the art of printmaking, emphasizing the relief method linoleum cut, woodcut, and wood engraving. Includes an introduction to the intaglio method. (Course fees apply.)

ART 307, 308, 309 DRAWING IV, V, VI **2, 2, 2**

Advanced study using the basic principles of drawing in various experimental approaches and advanced techniques. Prerequisites: ART 184, 185, 186.

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 only.

ART 317, 318, 319 PRINTMAKING IV, V, VI **2, 2, 2**

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.

ART 334, 335, 336 PAINTING IV, V, VI **2, 2, 2**

Advanced study of aesthetic enjoyment and understanding. Designed to develop the application of paint, including oil, casein, or tempera. Prerequisites: ART 184, 185, 186; ART 194, 195, 196.

ART 344, 345, 346 ADVANCED DESIGN **3, 3, 3**

Application of a wide variety of design principles relating to the needs of the commercial and fine artist. Prerequisites: ART 161, 162, 163.

ART 364, 365, 366 SCULPTURE IV, V, VI **2, 2, 2**

Advanced study of basic three-dimensional design principles, using metal, fiberglass, wood, and stone, emphasizing experimentation in direction, media, and techniques. Prerequisites: ART 264, 265, 266. (Course fees apply.)

ART 374, 375, 376 POTTERY AND CERAMIC SCULPTURE IV, V, VI **2, 2, 2**

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**

Principles of design and exploration of materials appropriate for primary and intermediate- grade children. Methods of the intelligent use of art materials for the child of elementary-school age. Will not apply toward a major or minor in art. (Course fees apply.)

ART 494 COOPERATIVE EDUCATION **0-4**

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. Prerequisite: Approval by department.

BIOLOGICAL SCIENCES

Bob Cushman, Chair; David Cowles, Joe Galusha, Scott Ligman, David Lindsey, Janice McKenzie, Jim Nestler, 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.

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 62 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	211	Introduction to Biological Research I	2
BIOL	250	Biostatistics	4
BIOL	296	Current Topics in Biology	1
BIOL	305	General Ecology	4
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	483	Philosophy of Origins and Speciation	3
BIOL	495	Colloquium (6 quarters required)	0
BIOL	496	Senior Seminar	2
		*Electives	26
			62

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

*Electives must include at least one course from each of the following five categories. A course may be used to fulfill more than one category.

Animal Biology:

BIOL	403	Ornithology
BIOL	405	Natural History of Vertebrates
BIOL	417	Behavior of Marine Organisms
BIOL	420	Sociobiology
BIOL	450	Paleobiology
BIOL	462	Ichthyology
BIOL	464	Animal Physiology
BIOL	468	Comparative Physiology
BIOL	475	Marine Invertebrates

Environmental Biology:

BIOL	360	Plant Biology
BIOL	403	Ornithology
BIOL	405	Natural History of Vertebrates
BIOL	410	Limnology
BIOL	417	Behavior of Marine Organisms
BIOL	420	Sociobiology
BIOL	426	Systematic Botany
BIOL	450	Paleobiology
BIOL	458	Marine Biology
BIOL	460	Marine Ecology
BIOL	462	Ichthyology
BIOL	463	Marine Phycology
BIOL	475	Marine Invertebrates

Functional Biology:

BIOL	430	Molecular Biology Techniques
BIOL	435	Developmental Biology
BIOL	440	Human Anatomy
BIOL	445	Advanced Microbiology
BIOL	449	Vertebrate Histology
BIOL	464	Animal Physiology
BIOL	466	Immunology
BIOL	468	Comparative Physiology

Marine Biology:

BIOL	417	Behavior of Marine Organisms
BIOL	458	Marine Biology
BIOL	460	Marine Ecology
BIOL	462	Ichthyology
BIOL	463	Marine Phycology
BIOL	468	Comparative Physiology
BIOL	475	Marine Invertebrates

Plant Biology:

BIOL	360	Plant Biology
BIOL	426	Systematic Botany
BIOL	463	Marine Phycology

Cognates:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
MATH	117	Accelerated Precalculus	5
or			
MATH	121, 122	Precalculus Mathematics I, II	8
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Laboratory	3

(MATH 181, Analytic Geometry and Calculus I, strongly recommended.)

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 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 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 of this bulletin.

ENVIRONMENTAL SCIENCE MAJOR (Bachelor of Science)

The environmental science major is a joint program in Natural Resources Conservation and Management offered through the collaboration of the following departments/schools: Biological Sciences, Chemistry, Engineering, English, History, Humanities, and Religion. See the Interdisciplinary Programs section of this bulletin.

BIOLOGY MINOR

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

BIOL	141, 142, 143	General Biology	12
		*Biology electives (at least 8 credits must be upper division)	15
			27

*Approval of biology adviser required.

BIOLOGY COURSES (BIOL)

BIOL 105, 106 CONTEMPORARY BIOLOGY **4, 4**

Introduction to biological concepts and information for nonscience majors. Information is presented in context of discussion 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. Prerequisite for BIOL 106 is BIOL 105, or BIOL 141, or BIOL 121. Will not apply on 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, circulatory, and respiratory systems. Third quarter focuses on digestive, urinary, and reproductive systems. Must be taken in 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 211 INTRODUCTION TO BIOLOGICAL RESEARCH I **2**

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 and scientific writing. 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: CHEM 101, 102 or 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.

BIOL 296 CURRENT TOPICS IN BIOLOGY **1**

An informal study of current topics in biology. Students will read scientific articles and lead and participate in weekly discussions. Limited to sophomore and junior biology majors and minors. Prerequisites: BIOL 143 and permission of instructor. Graded S or NC.

BIOLOGICAL SCIENCES UPPER DIVISION PREREQUISITES

BIOL 141, 142, 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 adviser on research activities such as a literature search, preliminary experiments, data collection, or data analysis. May be repeated with a different research adviser, or continued with the same research adviser. Prerequisite: BIOL 250 and permission of research adviser. Graded S or NC.

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.

BIOL 392 CELL BIOLOGY **4**

Study of eukaryotic cells. Topics include structural and functional diversity of membranes, energy and information flow, and structure and function of chloroplasts, mitochondria, ribosomes, and cytoskeleton. Priority will be given to biology majors, followed by bioengineering and health science majors and biology minors. One laboratory per week. Corequisite: CHEM 321 and permission of department.

BIOL 393 GENETICS **4**

Study of the principles of inheritance in plants and animals. Laboratory work consists of both descriptive and experimental analysis of heredity. One laboratory per week. Prerequisites: BIOL 250, 392 and CHEM 321; or permission of department.

BIOL 403 ORNITHOLOGY **4 OR 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 only. (Course fees apply.)

BIOL 405 NATURAL HISTORY OF VERTEBRATES **4 OR 5**

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 only. (Course fees apply.)

BIOL 410 LIMNOLOGY **4 OR 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.)

BIOL 416 RESEARCH IN BIOLOGY **1-4; 4**

The student will work with a departmental adviser on an independent basis. Research may include data collection and analysis and must include a written manuscript. May be repeated with a different research adviser or continued with the same research adviser. Prerequisite: BIOL 316 and permission of research adviser.

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 426 SYSTEMATIC BOTANY **4 OR 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 OR 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 393, CHEM 323, 326. (College Place campus - 4 quarter hours; Rosario Beach Marine Laboratory - 5 quarter hours). Offered even years only.

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 392, 393 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 only.

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 only.

BIOL 464 ANIMAL PHYSIOLOGY **4**

Study of animal physiology with emphasis on integration of vertebrate organ systems. One laboratory per week. Prerequisite: BIOL 392. PHYS 213, 216 strongly recommended. Offered as needed.

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. BIOL 392 is recommended.

BIOL 466 IMMUNOLOGY **4**

Study of the molecular and cellular bases of the immune response including clinical applications. One laboratory per week. Prerequisites: BIOL 392, 393.

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 123 or MATH 181 or permission of instructor.

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 494 COOPERATIVE EDUCATION/RESEARCH **0**

Specialized field or laboratory experience at an off-campus academic, industrial, or government site. A contractual arrangement between student, faculty adviser, and off-campus representative is required before work begins. Prerequisite: approval of major adviser.

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, 142, 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 annual Rosario Beach Marine Laboratory Bulletin. * Qualifies as a marine-oriented course.

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 392.

BIOL 475 MARINE INVERTEBRATES* **5**

A study of the biology of selected groups of marine invertebrates.

GRADUATE BIOLOGICAL SCIENCES COURSES

Please see the *Graduate Bulletin* for a listing of Biological Science graduate courses.

SCHOOL OF BUSINESS

JoAnn Wiggins, Dean; Norman Anderson, Andrew Dressler, Josefer Montes, Mihail Motzev, Dana Thompson, Bruce Toews, Yew-Chong Wong.

The School of Business is nationally accredited by the Accreditation Council for Business Schools and Programs to offer the following business degrees:

- Bachelor of Business Administration degree with concentrations in Accounting, Entrepreneurship and Small Business Management, Finance, International Business, Management, Marketing, and Health and Senior Care Management.
- Bachelor of Science degree in Automotive Management
- Bachelor of Science degree in Aviation Management.
- Bachelor of Science degree in Information Systems.
- Bachelor of Science degree with a major in Business Administration.
- Bachelor of Arts degree with a major in Business Administration.

Within the Walla Walla University community of faith and discovery, the mission of the School of Business is to provide a wholistic environment where students:

- Learn to evaluate and apply business knowledge and skills.
- Commit to Christian values, especially stewardship, integrity, and service.
- Resolve to practice business ethically.

The objectives are:

- To stimulate the development of students' religious, moral, and ethical values, especially stewardship, integrity, and service;
- To provide students the skills and knowledge needed to successfully pursue careers and/or graduate studies;
- To develop in students the capacity to think independently, analytically, and creatively;
- To encourage students to have a commitment to life-long learning;
- To enhance students' abilities to communicate clearly and effectively;
- To help students acquire an understanding and appreciation of global cultures and practices;
- To inspire students to become responsible and contributing members of society;
- To prepare students for positions of service within a wide variety of businesses and nonprofit organizations, including those associated with the Seventh-day Adventist Church.

Degrees Offered. The Bachelor of Business Administration (BBA) degree is a professional degree designed for students planning to enter the job market upon completing their baccalaureate or to enter graduate programs. Students have the opportunity to concentrate in the areas of accounting, entrepreneurship and small business management, finance, international business, management, marketing, or health and senior care management. No minor is required.

A Bachelor of Science (BS) degree in Business Administration is designed to provide 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. No minor is required.

A Bachelor of Science (BS) degree in Automotive Management is jointly offered by the School of Business and the Technology Department. The degree combines automotive technology and business to prepare students for managing automotive businesses. No minor is required.

A Bachelor of Science (BS) degree in Aviation Management is jointly offered by the School of Business and the Technology Department. The degree combines aviation technology and business to prepare students for managing aviation businesses. No minor is required.

A Bachelor of Science (BS) degree in Information Systems is jointly offered by the School of Business and the Computer Science Department. This degree combines computer technology and business to prepare students for positions as programmers, systems analysts, and network administrators. No minor is required.

A Bachelor of Arts (BA) degree with a major in Business Administration is available to the student who wishes a broader liberal arts preparation than that provided by the BBA. A minor from outside the School of Business and foreign language study are required for the BA degree.

An Associate of Science degree is available for those students who, for a variety of reasons, may find it impossible to complete a four-year program without an interruption. This program provides students an opportunity to gain the basic knowledge and skills required for initial job placement.

Minors are available in business, economics, information systems, and marketing.

A maximum of 12 credit hours applied to one business major, minor, or concentration may also be applied to a second business major, minor, or concentration.

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.

Candidacy Requirements for all Baccalaureate Degrees in Business. To be admitted into candidacy for all baccalaureate business degrees (not including interdisciplinary business degrees), students must successfully complete pre-candidacy courses and a satisfactory candidacy portfolio.

Pre-Candidacy Courses:

ACCT	201	Principles of Accounting	4
ENGL	121, 122	College Writing I and II	3,3
ENGL	223	Research Writing	3
MATH	123	Survey of Calculus	
or			4
MATH	181	Analytic Geometry and Calculus I	
SPCH	101	Fundamentals of Speech Communication	4

CIS	140	Computer Business Applications	4
GBUS	161	Business Basics*	2
GBUS	263	Business Statistics	4

*GBUS 160 Introduction to Business may substitute for GBUS 161.

Candidacy Portfolio:

1. Complete an Application for Candidacy.
2. Write an essay addressing (a) Why did you come to WWU? (b) Why have you chosen a business major? (c) What are your future goals in terms of careers and accomplishments?
3. Submit a current resume.

Privileges of Candidacy:

After satisfactory completion of pre-candidacy courses and portfolios, candidates are eligible to:

- Enroll in the following upper division courses: GBUS 463 and MGMT 489.
- Apply for scholarships and awards granted by the School of Business.
- Be recommended for entry into Delta Mu Delta, an international honor society in business administration.
- Run for office in any clubs sponsored by the School of Business.

BACHELOR OF BUSINESS ADMINISTRATION (B.B.A.)

A student seeking the BBA degree must complete 68 quarter hours of core requirements and a 36-quarter hour concentration in one area of business. 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.

Bachelor of Business Administration Core and Cognate Requirements:

Core Requirements:

Lower Division Courses:

ACCT	201, 202, 203	Principles of Accounting	10
CIS	140	Computer Business Applications	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
GBUS	161	Business Basics*	2
GBUS	263	Business Statistics	4

Upper Division Courses:

CIS	301	Management Information Systems	4
FINA	351	Managerial Finance	4
GBUS	361, 362	Business Law I, II	8
GBUS	366	Operations Management and Production	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

*GBUS 160 Introduction to Business may substitute for GBUS 161

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

Cognates:

MATH	123	*Survey of Calculus	
or			4
MATH	181	*Analytic Geometry and Calculus I	
PSYC	130	**General Psychology	4
SPCH	101	Fundamentals of Speech Communication	4

*Prerequisites Required

**SOCI 204, General Sociology, is the substitute cognate for those taking the Health and Senior Care Management Concentration.

ACCOUNTING CONCENTRATION (BBA)

ACCT	321, 322, 323	Intermediate Accounting	11
ACCT	331	Managerial Cost Accounting	4
ACCT	335	Personal Income Tax	4
ACCT	430	Auditing	5
ACCT	494	Cooperative Education/Internship	0
		(minimum of 90 hours of co-op required)	

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
			36

Certified Public Accountant Examination

In most states, 225 quarter (150 semester) hours are required to write the 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):

ACCT	321	Intermediate Accounting	3
ACCT	335	Personal Income Tax	4
ACCT	341	Accounting Information Systems	4
MGMT	275	Management of Small Business	4
MGMT	373	Organizational Behavior	4
MGMT	374	Human Resource Management I	4
MGMT	375	Human Resource Management II	4
MGMT	475	Entrepreneurship	4
		*Electives	5
			36

*Electives must be approved by the School of Business adviser.

FINANCE CONCENTRATION (BBA)

ACCT	321, 322	Intermediate Accounting	7
FINA	441	Financial Markets and Institutions	4
FINA	451	Investments	4
FINA	488	International Trade and Finance	4
ACCT		* Upper-division ACCT Electives	4

Select 8 credits from the following:

FINA	365	Risk and Insurance	4
FINA	367	Real Estate Principles	4
FINA	460	Methods of Forecasting	4
		*Electives	5
			36

*Electives must be approved by the School of Business adviser.

HEALTH AND SENIOR CARE MANAGEMENT CONCENTRATION (BBA)

ACCT	331	Managerial Cost Accounting	4
HSCM	201	Introduction to Health and Senior Care Management	4
HSCM	202	Practicum in Health and Senior Care Management	1-2
HSCM	472	Management of Health and Senior Care Organizations	4
HSCM	473	Contemporary Issues in Health and Senior Care	4
HSCM	481	Internship	4
MGMT	374	Human Resource Management I	4
		*Electives	10-11
			36

*Electives must be approved by the School of Business adviser and chosen from the following:

PSYC	216	Adult Development and Aging	3
SOCI	438	Sociology of Health, Illness, and Healthcare	4
SOWK	261	Human Behavior and The Social Environment II	3
SOWK	435	Social Gerontology	3
SOWK	437	Death and Dying	4

INTERNATIONAL BUSINESS CONCENTRATION (BBA)

(One quarter of continuous study or work in a country other than the U.S. or Canada is required.)

FINA	488	International Trade and Finance	4
MGMT	488	Global Management and Marketing	4
		Foreign Language	8-12
		12 credits of elementary (1 quarter of introduction and 2 quarters of elementary) or 8 credits of intermediate (2 quarters each). Credits must be from the same language.	
		*Electives	16-20
			36

*Electives must be approved by the School of Business adviser and may be chosen from RELH 303, RELM 233, SOCI 204; any political science, geography or history (excluding U.S. history); business, and modern language. At least four (4) credits must be business and at least four (4) credits must be other than business.

MANAGEMENT CONCENTRATION (BBA)

MGMT	373	Organizational Behavior	4
MGMT	374	Human Resource Management I	4
MGMT	375	Human Resource Management II	4
MGMT	476	Motivation and Leadership	4
MGMT	488	Global Management and Marketing	4
MGMT	494	*Cooperative Education/Internship	0-4
		**Electives (12 must be upper-division)	12-16
			36

*A minimum of 120 hours is required for the Cooperative Education/Internship requirement regardless of number of credits.

**Electives must be approved by the School of Business adviser.

MARKETING CONCENTRATION (BBA)

MKTG	383	Principles of Advertising	4
MKTG	384	Consumer Behavior	4
MKTG	451	Market Research Methods	4
MKTG	481	Public Relations	4
MKTG	487	Marketing Management	4
MKTG	488	Global Management and Marketing	4
		*Electives	12
			36

*Electives must be approved by the School of Business adviser and may be chosen from business, communications, art, psychology and graphics courses.

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	Computer Business Applications	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
GBUS	161	Business Basics*	2
GBUS	263	Business Statistics	4

Upper Division Courses:

FINA	351	Managerial Finance	4
GBUS	361, 362	Business Law I, II	8
GBUS	366	Operations Management and Production	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
		***Electives (4 must be upper division)	12
			76

*GBUS 160 Introduction to Business may substitute for GBUS 161

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

***Electives must be approved by the School of Business adviser.

Cognates:

MATH	123	Survey of Calculus*	
or			4
MATH	181	Analytic Geometry and Calculus I*	
PSYC	130	General Psychology	
SPCH	101	Fundamentals of Speech Communication	4

*Prerequisites Required

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 from outside the School of Business, 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	Computer Business Applications	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	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	495	Colloquium**	0
MGMT	371	Principles of Management	4
MGMT	489	Strategic Management	4
MKTG	381	Principles of Marketing	4
		***Electives (4 must be upper division)	6
			62

*GBUS 160 Introduction to Business may substitute for GBUS 161

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

***Electives must be approved by the School of Business adviser.

Cognates:

MATH	123	Survey of Calculus*	
or			4
MATH	181	Analytic Geometry and Calculus I*	
PSYC	130	General Psychology	4
SPCH	101	Fundamentals of Speech Communication	4

*Prerequisites Required

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 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 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 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 Requirements:

ACCT	201, 202, 203	Principles of Accounting	10
CIS	140	Computer Business Applications	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 (2 quarters required)	0
		**Electives	20
			46

*GBUS 160 Introduction to Business may substitute for GBUS 161

**Electives must be approved by the School of Business adviser.

Cognates:

MATH	105	Finite Mathematics	
or			
MATH	117	Accelerated Precalculus	4-5
or			
MATH	121	Precalculus Mathematics I	

BUSINESS MINOR

ACCT	201, 202, 203	Principles of Accounting	10
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
GBUS	161	Business Basics*	2
		**Electives (8 must be upper division)	10
			30

*GBUS 160 Introduction to Business may substitute for GBUS 161

**Electives must be approved by the School of Business adviser.

ECONOMICS MINOR

ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
ECON	441	Financial Markets and Institutions	4
ECON	488	International Trade and Finance	4
FINA	451	Investments	4
GBUS	161	Business Basics*	2
		**Electives (4 must be upper division)	8
			30

*GBUS 160 Introduction to Business may substitute for GBUS 161

**Electives must be approved by the School of Business Adviser.

INFORMATION SYSTEMS MINOR

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

MARKETING MINOR

GBUS	161	Business Basics*	2
MKTG	381	Principles of Marketing	4
MKTG	383	Principles of Advertising	4
MKTG	384	Consumer Behavior	4
MKTG	487	Marketing Management	4
MKTG		Electives	4
		**Electives (6 must be business)	8
			30

*GBUS 160 Introduction to Business may substitute for GBUS 161

**Electives must be approved by the School of Business adviser. Electives may be chosen from business, communications, art, psychology and graphics.

ACCOUNTING COURSES (ACCT)

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 by management 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 203.

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 203, 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 203. Offered odd years only.

ACCT 421 ADVANCED ACCOUNTING 4

Preparation of consolidated financial statements, partnership accounting, foreign currency transactions, and translation of foreign currency financial statements. Prerequisite: ACCT 323. Offered even years only.

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 only.

ACCT 494 COOPERATIVE EDUCATION/INTERNSHIP 0-4

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. No credit will be allowed toward the major for the BA or BS in Business. A reaction paper is required. See the Cooperative Education information in the Nondepartmental section of the Bulletin. Prerequisites: ACCT 321, 322 and approval by School of Business faculty. Graded S or NC.

COMPUTER INFORMATION SYSTEMS COURSES (CIS)

CIS 140 COMPUTER BUSINESS APPLICATIONS 4

Studies spreadsheet application with emphasis on problem solving for business using Microsoft Excel; and introduces database software using Microsoft Access. Prerequisite: working knowledge of personal computers and Microsoft Office.

CIS 150 INTERMEDIATE DATABASES 1

Studies database functions, including design of database tables, queries, forms, and reports using Microsoft Access. Prerequisite: CIS 140.

CIS 240 ADVANCED SPREADSHEETS 1

Studies advanced spreadsheet functions, including statistical methods, modeling, simulations, decision-making, optimizing, troubleshooting, and creating applications using Microsoft Excel and Visual Basic. Prerequisite: CIS 140.

CIS 250 ADVANCED DATABASES 1

Studies advanced database functions, including creating and maintaining databases, enhancing tables, and advanced queries and reports using Microsoft Access. Prerequisite: CIS 150.

CIS 301 MANAGEMENT INFORMATION SYSTEMS **4**

An analysis of information systems as the operational mechanism of the management process. The technology used, the systems development process and the application of information systems to the major business cycles are all investigated. Topics include the history of computers, information technology, managerial and ethical issues, structure, analysis, development and implementation of information systems that support a wide range of organizational functions. Prerequisite: CIS 140.

CIS 330 E-BUSINESS **4**

Introduces the information content, implementation, operational, managerial, business and ethical issues that are essential to doing business on-line. It also examines the use of information systems both inside and outside of the firm in the context of the highly dynamic e-commerce business environment. Prerequisite: CIS 301. Offered even years only.

ECONOMICS COURSES (ECON)

ECON 204 FUNDAMENTALS OF ECONOMICS **4**

Deals with basic concepts in economics for the liberal arts and social sciences. Topics covered include the basic financial system, fiscal and monetary policy of the U.S. government, income distribution, poverty, education, and environmental concerns. Course does not apply toward the fulfillment of the economics requirement for business majors.

ECON 211 PRINCIPLES OF MACROECONOMICS **4**

Deals with basic concepts of macroeconomics. Topics covered 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 examines fiscal and monetary policies of the U.S. government and their impact on the economy.

ECON 212 PRINCIPLES OF MICROECONOMICS **4**

Deals with 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. Prerequisite: ECON 211 or equivalent.

ECON 441 FINANCIAL MARKETS AND INSTITUTIONS (OR FINA 441) **4**

Study of the functional activities of the institutions and markets that comprise the American financial system; emphasizes the nature and functions of money, credit and banking. Prerequisites: ECON 211 and FINA 351.

ECON 460 METHODS OF FORECASTING (OR FINA 460) **4**

Introduces the methodology and techniques used in business forecasting (both qualitative and quantitative). It covers modeling, statistical estimation and hypothesis testing, and simulation of economic and financial relationships. Prerequisites: ECON 212, GBUS 263 or equivalent. Offered odd years only.

ECON 488 INTERNATIONAL TRADE AND FINANCE (OR FINA 488) **4**

Study of alternative theories on trade, analyzes theoretical impact of trade on employment, economic growth and welfare, and the implications of protectionism on the economy; also studies the foreign exchange systems, and the conduct of monetary policy in an open economy. Prerequisites: ECON 211, 212, GBUS 263 or permission of instructor. Offered even years only.

FINANCE COURSES (FINA)

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 fundamental principles of financial policy in the organization and management of corporate enterprises. Prerequisite: ACCT 202; CIS 140 or permission of instructor.

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 only.

FINA 367 REAL ESTATE PRINCIPLES **4**

Study of the principles of real estate ownership, acquisition, sales, financing, valuation, investment, and property management. Recommended FINA 351, GBUS 361, 362. Offered even years only.

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; emphasizes the nature and functions of money, credit, and banking. Prerequisites: ECON 211 and FINA 351.

FINA 451 INVESTMENTS **4**

Study of the principles of making sound investments in the securities markets, managing investment portfolios, and evaluating securities; the function of speculation, the hedging operation, and the evaluation of market risks. Recommended: FINA 351.

FINA 460 METHODS OF FORECASTING (OR ECON 460) **4**

Introduces the methodology and techniques used in business forecasting (both qualitative and quantitative). It covers modeling, statistical estimation and hypothesis testing, and simulation of economic and financial relationships. Prerequisites: ECON 212, GBUS 263 or equivalent. Offered odd years only.

FINA 488 INTERNATIONAL TRADE AND FINANCE (OR ECON 488) **4**

Study of alternative theories on trade, analyzes theoretical impact of trade on employment, economic growth and welfare, and the implications of protectionism on the economy; also studies the foreign exchange systems, and the conduct of monetary policy in an open economy. Prerequisites: ECON 211, 212, GBUS 263 or permission of instructor. Offered even years only.

FINA 494 COOPERATIVE EDUCATION/INTERNSHIP **0-4**

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. No credit will be allowed toward the major for the BA or BS in Business. A reaction paper is required. See the Cooperative Education information in the Nondepartmental section of the Bulletin. Prerequisites: FINA 351 and one other business course approved by the School of Business faculty. Graded S or NC.

GENERAL BUSINESS COURSES (GBUS)

GBUS 160 INTRODUCTION TO BUSINESS **4**

Introductory course designed to acquaint students with the varied activities and diverse roles that make up the American business system. Includes glimpses of many business career opportunities. Not open to senior business majors. Credit will not be allowed for both GBUS 160 and GBUS 161.

GBUS 161 BUSINESS BASICS **2**

Overview of the functional business areas and career opportunities in business. Not open to senior business majors. Credit will not be allowed for both GBUS 160 and GBUS 161.

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). Prerequisites: CIS 140, MATH 121.

GBUS 359 THE AMERICAN ECONOMY (OR HIST 359) **4**

An examination of the 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 even years.

GBUS 361 BUSINESS LAW I **4**

An introduction to the judicial system, sources of law, and the legal environment in which individuals and business must operate. Subjects covered include contracts, agency, property, credit, bankruptcy, wills and estates.

GBUS 362 BUSINESS LAW II **4**

Continues the study of the legal environment with emphasis on business and the Uniform Commercial Code. Subjects covered include sales, commercial paper, international business law, business organizations, and governmental regulation of business. Prerequisite: GBUS 361.

GBUS 366 OPERATIONS MANAGEMENT AND PRODUCTION **4**

The application of management principles and mathematical techniques to production problems and decisions faced in both manufacturing and service organizations. Topics include planning and decision making, forecasting, design, production scheduling, inventory management, network models, quality control, layout and project management problems. 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 463 BUSINESS ETHICS **4**

Introduces students to the various bases from traditional philosophical and Christian sources for ethical decision making. These bases are applied to various ethical issues that organizations must address. Open only to students with senior standing.

GBUS 495 COLLOQUIUM **0**

Lecture series on current business practice. Graded S or NC.

HEALTH AND SENIOR CARE MANAGEMENT COURSES (HSCM)

HSCM 201 INTRODUCTION TO HEALTH AND SENIOR CARE MANAGEMENT **4**

Introduces students to current topics in health and senior care management in a broad context. Topics include staffing, supervision, the professional requirements, evaluation of staff, health information needs, customer service excellence, program planning, cost control, financial management, budgeting, and legal issues, along with the roles of care providers, medical staff and government agencies.

HSCM 202 PRACTICUM IN HEALTH AND SENIOR CARE MANAGEMENT **1-2**

Provides on-the-job introduction to the selected area of student interest of senior care center or health care setting. The student will complete 40 hours of practicum, along with classwork assessing the practicum experience. Prerequisite: HSCM 201.

HSCM 472 MANAGEMENT OF HEALTH AND SENIOR CARE ORGANIZATIONS **4**

Emphasizes delivery, financing and evaluation of the healthcare and senior living systems. Key concepts and topics include the health and senior care financing and regulation, delivery models, quality assessment and their interrelated effects on patients, providers, and payers.

HSCM 473 CONTEMPORARY ISSUES IN HEALTH AND SENIOR CARE **4**

Provides the unique knowledge and skills necessary to understand and effectively manage the finances, individuals, and groups in healthcare organizations and senior living facilities. Students are expected to develop a conceptual idea of the systems in which the organizations operate and the relationship between the organization and its environment, in terms of regulation, reimbursement, and increased governmental regulation of health services. Skills and knowledge introduced earlier in the curriculum are used to analyze current issues.

HSCM 481 INTERNSHIP **4**

The residency program provides field experience in a health or senior care organization under the supervision of a selected executive and a university faculty member. The student is oriented to the total operations of the institution and participates in administrative activities in preparation for major administrative responsibilities. Students will prepare three reports during the residency to demonstrate the integration and application of theory and management skills to practical problems of their institutions.

MANAGEMENT COURSES (MGMT)

MGMT 275 MANAGEMENT OF SMALL BUSINESS **4**

Studies the ownership, startup, organization, finance, marketing, business plans, taxation, and exit strategies of small business enterprises. Recommended: ACCT 203.

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 interpersonal skills.

MGMT 373 ORGANIZATIONAL BEHAVIOR (OR PSYC 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.

MGMT 374 HUMAN RESOURCE MANAGEMENT I **4**

Emphasizes the importance of human resource management within organizations. Students are introduced to core functions and develop an understanding of the following areas: strategic human resource management; ethical, legal and social considerations; staffing; training and development; and performance appraisal and management. Prerequisite: MGMT 371 or permission of instructor.

MGMT 375 HUMAN RESOURCE MANAGEMENT II **4**

Emphasizes core human resource functions and develops student understanding of the following areas: compensation and benefits; safety, health, and legal issues in the work environment; employee and labor relations, along with internal employee relations; and global human resource management. Prerequisite: MGMT 374, or permission of instructor.

MGMT 472 TRAINING AND DEVELOPMENT **4**

This class examines needs and characteristics of organizations' employees and the role of business training. Students will develop, implement, and evaluate training seminars. Offered odd years only.

MGMT 475 ENTREPRENEURSHIP (OR MKTG 475) **4**

Studies the entrepreneurial process. Topics include how to assess the feasibility of ideas, define a market, meet financing requirements, pitch business ideas, and develop an entrepreneurial team. The integration of previous coursework and a business idea into the creation of a viable business plan is required. Students will assess the appropriateness of entrepreneurship as their career choice. Prerequisites: MGMT 275, MGMT 371, MKTG 381.

MGMT 476 MOTIVATION AND LEADERSHIP **4**

Advanced topics dealing with individual and organizational factors affecting employee motivation, performance, and satisfaction. Specific attention given to group dynamics, reward systems, and leadership roles. Case studies. Recommended: MGMT 371. (Course fees apply.)

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, MKTG 381.

MGMT 489 STRATEGIC MANAGEMENT **4**

A study of business operations from an integrated viewpoint. Knowledge from the functional areas of business is applied to strategic issues and problems found in several organizational settings. Library research, business simulations, in-depth case analyses, and formal presentations required. Open to students with senior standing only. (Course fees apply).

MGMT 494 COOPERATIVE EDUCATION/INTERNSHIP **0-4**

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. No credit will be allowed toward the major for the BA or BS in Business. A reaction paper is required. See the Cooperative Education information in the Nondepartmental section of the Bulletin. Prerequisites: MGMT 371 and one other business course approved by School of Business faculty. Graded S or NC.

MARKETING COURSES (MKTG)

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. Prerequisite: ECON 212 or permission of instructor. (Course fees apply.)

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 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. Prerequisites: GBUS 263, MKTG 381.

MKTG 475 ENTREPRENEURSHIP (OR MGMT 475) **4**

Studies the entrepreneurial process. Topics include how to assess the feasibility of ideas, define a market, meet financing requirements, pitch business ideas, and develop an entrepreneurial team. The integration of previous coursework and a business idea into the creation of a viable business plan is required. Students will assess the appropriateness of entrepreneurship as their career choice. Prerequisites: MGMT 275, MGMT 371, 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 486 MARKETING FOR NOT-FOR-PROFITS 2

An examination of the unique marketing needs of not-for-profit institutions and the application of various strategic marketing methods. Various segments of not-for-profit organizations will be the focus; fine arts, health care, education, social services or churches. Offered even years only.

MKTG 487 MARKETING MANAGEMENT 4

An application of and expansion upon principles covered in the basic marketing course. Emphasis is on the four themes of customer relationship management, technology/internet revolution, brand building, and global marketing. Prerequisite: MKTG 381.

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 494 COOPERATIVE EDUCATION/INTERNSHIP 0-4

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. No credit will be allowed toward the BA or BS in Business. A reaction paper is required. See the Cooperative Education information in the Nondepartmental section of the Bulletin. Prerequisites: MKTG 381 and one other business course approved by School of Business faculty. Graded S or NC.

CHEMISTRY

Steven Lee, Chair; Kyle Craig, Richard Daley, J. Anthony Smith.

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 Arts and Bachelor of Science degrees.

CHEMISTRY MAJOR (Bachelor of Arts)

A student majoring in chemistry must complete 55 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. A minor must be chosen for the Bachelor of Arts 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.

Major Requirements:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	264	Chemical Equilibrium and Analysis	4
CHEM	265	Analytical Instrumental Methods I	4
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	335, 336	Microscale Organic Laboratory	4
CHEM	350, 352, 353	Physical Chemistry	9
CHEM	354, 355, 356	Physical Chemistry Laboratory	3
CHEM	479	Directed Research/Project	
or			2
CHEM	494	Cooperative Education	
CHEM	496, 497, 498	Chemistry Seminar	3
		*Electives	3
			55

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

Cognates:

MATH	181, 281	Analytic Geometry and Calculus I, II	8
MATH	206	Applied Statistics	
or			4
MATH	315	Probability and Statistics	
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	

CHEMISTRY MAJOR (Bachelor of Science)

A student majoring in chemistry must complete 67 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.

Major Requirements:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	264	Chemical Equilibrium and Analysis	4
CHEM	265	Analytical Instrumental Methods I	4
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	335, 336	Microscale Organic Laboratory	4
CHEM	350, 352, 353	Physical Chemistry	9
CHEM	354, 355, 356	Physical Chemistry Laboratory	3
CHEM	479	Directed Research/Project	
or			3
CHEM	494	Cooperative Education	
CHEM	496, 497, 498	Chemistry Seminar	3
		*Electives	14
			67

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

Cognates:

MATH	181, 281-283	Analytic Geometry and Calculus, I-IV	16
MATH	206	Applied Statistics	
or			4
MATH	315	Probability and Statistics	
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	

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 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, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
		*Electives	3
			28

*Approval of department chair required.

CHEMISTRY COURSES (CHEM)

CHEM 101, 102 INTRODUCTORY CHEMISTRY **4, 4**

Introduction to chemistry, covering the fields of inorganic, organic, and biochemistry. Does not apply toward a major or minor. Must be taken in sequence. 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 264 CHEMICAL EQUILIBRIUM AND ANALYSIS **4**

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. One laboratory per week. Prerequisite: CHEM 143.

CHEM 265 ANALYTICAL INSTRUMENTAL METHODS I **4**

Primary emphasis is on electrochemistry, optical spectroscopies, and separations techniques. Consideration is given to both the instrumentation and techniques of interest in chemical analysis. One laboratory per week. Prerequisite: CHEM 264.

CHEM 321 ORGANIC CHEMISTRY **4**

Study of principles of organic chemistry and their applications to the preparation, properties, and reactions of organic compounds. Prerequisite: CHEM 143.

CHEM 322, 323 ORGANIC CHEMISTRY **4, 3**

Study of principles of organic chemistry and their applications to preparation, properties, and reactions of organic compounds. Spectroscopic analysis of organic compounds. Prerequisite: CHEM 321. Corequisite: CHEM 325, 326 or CHEM 335, 336.

CHEM 325, 326 INTRODUCTION TO ORGANIC LABORATORY **1, 1**

Introduction to microscale techniques of preparation, purification, and identification of organic compounds. Includes spectroscopic techniques. Intended for non-majors. One laboratory per week. Corequisite: CHEM 322, 323. (Course fees apply.)

CHEM 335, 336 MICROSCALE ORGANIC LABORATORY **2, 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 322, 323. (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 264.

CHEM 354, 355, 356 PHYSICAL CHEMISTRY LABORATORY **1, 1, 1**

Laboratory integrated with CHEM 350, 352, 353. Corequisite: CHEM 350, 352, 353.

CHEM 427 ORGANIC STRUCTURE AND MECHANISMS **3**

In-depth study of the structures of organic molecules and the theories of reaction mechanisms. One laboratory per week. Prerequisite: CHEM 323. Offered odd years only.

CHEM 429 ORGANIC STRUCTURAL PROBLEMS **3**

Application of nuclear magnetic resonance, mass and other spectroscopies to organic structural determination. One lecture and two laboratories per week. Prerequisite: CHEM 323. Offered even years only.

CHEM 431, 432, 433 FOUNDATIONS OF BIOCHEMISTRY **4, 4, 2**

A first course in biochemistry emphasizing the 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 also included. Priority will be given to biochemistry, chemistry, and pre-professional students whose programs require it. Prerequisite: CHEM 323; Recommended BIOL 392.

CHEM 436 BIOCHEMISTRY LABORATORY **2**

A laboratory course emphasizing research techniques in biochemistry. Two laboratories per week. Prerequisite: CHEM 326 or CHEM 336; Corequisite: CHEM 431.

CHEM 442 INORGANIC CHEMISTRY **4**

Study of the physical and chemical properties of inorganic and coordination compounds. Emphasis is placed on the use of molecular orbital, ligand field and crystal field theories as tools to understanding the structure and reactivity of inorganic compounds. One laboratory per week. Prerequisites: CHEM 143, 350 or permission of instructor. Offered even years only. Offered as needed.

CHEM 461 ANALYTICAL INSTRUMENTAL METHODS II **4**

The study of mass spectrometric, nuclear magnetic resonance and surface or thermal analysis techniques for analytical studies. One laboratory per week. Prerequisite: CHEM 265. Offered odd years only.

CHEM 479 DIRECTED RESEARCH/PROJECT **1-3**

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.

CHEM 494 COOPERATIVE EDUCATION **0-3**

Chemical research conducted at an off-campus site, usually in an industrial, academic, or government laboratory. A contractual arrangement involving the student, faculty adviser, and the off-campus site is required before work begins. If taken for credit, the student must submit a written report of the research upon completion of the work. Prerequisite: Approval of the department.

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 264, CHEM 323 or permission of instructor.

COMMUNICATIONS AND LANGUAGES

Nancy Semotiuk, Chair; Alma Alfaro, David Bullock, David Crawford, Jean-Paul Grimaud, Jerrold Hartman, Deborah Silva.

The department's programs are designed to help students develop their talents as Christian communicators who are prepared to enter communication-related professions and to develop competence in the ability to understand, speak, read, and write a foreign language. While studying languages, students will also gain a better understanding of the literature and culture of other people.

With the expansion of global economy, new horizons are opening up in international politics, environmental issues, technology, and culture. Strong communication and language skills will provide students with a breadth of experience and a powerful advantage for meeting professional opportunities in our changing world.

In the area of communications, the department offers both bachelor of arts and bachelor of science degrees with three majors and five minor programs of study. Languages offer majors in French and Spanish and minors in French, German, and Spanish.

COMMUNICATIONS

The Bachelor of Arts degree in Mass Communication integrates a strong core of communication study with areas of specialization, a minor in an area of the student's choosing, and foreign language study to provide a breadth of experience in communication and related disciplines. Concentrations are available in media, photojournalism, journalism, and public relations, preparing graduates for positions in news and feature editorial, photojournalism, radio, television, and video production, internet publishing as well as public relations and fund-raising. The bachelor of arts graduate will possess the potential for advancement to media managerial positions and will be prepared for further graduate study.

The Bachelor of Science degree in Mass Communication allows students to focus on courses related to their major interests in communication. Because no minor is required, this degree is an immersion in a range of communication offerings, yet provides for depth within a specific area of interest. The B.S. degree, while not requiring a foreign language, provides opportunities for students to choose from department offerings, as well as related courses from other majors on campus, and to create an extensive and competitive professional portfolio.

The Bachelor of Arts degree in International Communication integrates a strong core of communication study 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 and related disciplines. Graduates of this program would be 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, and media outlets.

The speech communication major is designed to assist students in developing strong public, small group and interpersonal communication skills. Graduates in speech communication are prepared for a variety of career opportunities in areas where leadership abilities and clear communication skills are essential. Career options include pre-professional paths (including law, dentistry, and medicine), fund-raising, teaching, human resources, counseling, theatre, business (both profit and non-profit), broadcasting, youth service, mediation, and public relations. Graduates are also prepared to seek additional graduate or professional education.

INTERNATIONAL COMMUNICATION MAJOR (Bachelor of Arts)
A student majoring in International Communication must complete the major core requirements and one emphasis for a total of 67 hours (plus concentration cognates), the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

Core Requirements:

COMM	110	Seminar: International Communication	1
COMM	145	Mass Communication Media	4
COMM	325	Multicultural Communication	3
COMM	357	Communication Law and Ethics	4
COMM	475	Communication Theory	2
COMM	487	Senior Project	1
COMM	494	+Cooperative Educ/Practicum in Mass Media	0
COMM	495	Colloquium (four colloquia required)	0
COMM	496, 497	Seminar in Mass Media	2, 1
JOUR	245	Media Writing	4
LANG	406	Language and Culture	4
PREL	481	Public Relations	4
SPCH	310	Interpersonal and Nonverbal Communication	3
SPCH	453	Rhetoric of Western Thought	4
		*Electives	10
			47

+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:**

COMM	235	Introduction to Video	4
DRMA	242	Acting	4
JOUR	257	Introduction to Photojournalism	3
JOUR	345	Specialized Writing: Advertising	3
JOUR	345	Specialized Writing: Opinion Writing	3
PREL	333	Strategies for Fundraising	4
PREL	350	Writing for Public Relations	3
SPCH	407	Advanced Small Group Communication	3
SOCI	420	Immigration and Identity	4
ENGL	485	Linguistics	3

Cognates:

ANTH	225	Cultural Anthropology	4
HIST	121	History of Western Civilization	4
	and		
HIST	122	History of Western Civilization	4
	or		
HONR	131, 132, 133	Western Thought (HONR 131, 132, 133 will fulfill the history requirement, but only 8 credits will apply to history. The other 4 credits are counted as literature. To exercise this option the student must complete all 12 credits.)	12
RELH	303	World Religions	4
MKTG	488	**Global Management and Marketing	4
			20

**Prerequisites are MGMT 371 and MKTG 381.

Emphasis:
20 credit hours beyond the second quarter of the intermediate level language; 1 quarter (minimum) must be taken overseas.

Francophone Emphasis:

Electives taken overseas			16
Select 4 credits from the following courses:			
FREN	394	French Directed Reading	4
FREN	405	French Stylistics and Rhetoric	4
FREN	407	Survey of French and Francophone Literature	4
FREN	408	Contemporary French and Francophone Literature	4
			20

Hispanic Emphasis:

Electives taken overseas			16
Select 4 credits from the following courses:			
SPAN	394	Spanish Directed Reading	4
SPAN	405	Spanish Stylistics and Rhetoric	4
SPAN	407	Survey of Spanish and Latino Literature	4
SPAN	408	Contemporary Spanish and Latino Literature	4
			20

MASS COMMUNICATION MAJOR (Bachelor of Arts)

A student majoring in mass communication must complete the major core requirements and one concentration for a total of **62** hours (plus concentration cognates), the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to complete a senior project.

MASS COMMUNICATION MAJOR (B.A.) CORE REQUIREMENTS:

COMM	145	Mass Communication Media	4
COMM	235	Introduction to Video	4
COMM	357	Communication Law and Ethics	4
COMM	475	Communication Theory	2
COMM	487	Senior Project	1
COMM	495	Colloquium (four colloquia required)	0
COMM	496, 497	Seminar in Mass Media	2,1
JOUR	245	Media Writing	4
JOUR	246	Reporting Methods	3
JOUR	257	Introduction to Photojournalism	3
SPCH	101	Fundamentals of Speech Communication	4
			32

JOURNALISM CONCENTRATION (Mass Communication)

JOUR	247	Copy Editing	3
JOUR	345	Specialized Writing: Opinion Writing	3
JOUR	341	Magazine Article Writing	4
JOUR	451	Publication Production	4
		*Electives (3 must be writing; may be COMM, DRMA, JOUR, PREL, SPCH, may include up to 4 hours in GRPH)	16
			30

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair. Writing courses should be from the journalism section unless otherwise designated.

MEDIA CONCENTRATION (Mass Communication)

COMM	231	Broadcast Techniques and Announcing	4
COMM	301	Audio Production	4
COMM	302	Video Studio Production	4
COMM	303	Video Field Production	4
COMM	401	Advanced Video Production	4
Choose one of the following courses:			4
MKTG	381	Principles of Marketing	
MKTG	383	Principles of Advertising	
PREL	481	Public Relations	

*Electives (3 must be writing; may include COMM, JOUR, PREL and the following:) 6

DRMA	242	Acting
DRMA	252	Performance
DRMA	253	Technical Production
DRMA	363	History of Theatre
DRMA	365	Applied Play Direction
SPCH	107	Voice and Articulation
SPCH	211	Oral Interpretation
SPCH	310	Interpersonal and Nonverbal Communication
SPCH	407	Advanced Small Group Communication

30

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair. Writing courses should be from the journalism section unless otherwise designated.

PHOTOJOURNALISM CONCENTRATION (Mass Communication)

JOUR	247	Copy Editing	
or			3-4
JOUR	341	Magazine Article Writing	
JOUR	457	Advanced Photojournalism	3
JOUR	458	Newspaper Staff Photography Practicum	3
JOUR	479	Directed Photojournalism Project	1-3
PHTO	256	Digital Photography	3
		*Electives	13-16
			30

A writing elective is required and must be chosen from the JOUR section of the Bulletin

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

PUBLIC RELATIONS CONCENTRATION (Mass Communication)

JOUR	247	Copy Editing	3
JOUR	345	Specialized Writing: Advertising Copy Writing	3
JOUR	451	Publication Production	4
PREL	333	Strategies for Fund Raising	4
PREL	350	Writing for Public Relations	3
PREL	481	Public Relations	4
		*Electives (3 must be writing; 4 may be COMM, DRMA, JOUR, PREL, SPCH may include up to 4 hrs in GRPH)	9
			30

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair. Writing courses should be from the journalism section unless otherwise designated.

Cognates:

GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
PHTO	156	Principles of Photography	3

SPEECH COMMUNICATION MAJOR (Bachelor of Arts)

A student majoring in Speech Communication must complete 57 quarter hours in the major, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin.

Major Requirements:

COMM	145	Mass Communication Media	4
COMM	475	Communication Theory	2
COMM	495	Colloquium (four colloquia required)	0
DRMA	211	Oral Interpretation	4
JOUR	245	Media Writing	4
SPCH	101	Fundamentals of Speech Communication	4
SPCH	107	Voice and Articulation	4
SPCH	310	Interpersonal and Nonverbal Communication	3

SPCH	341	Argumentation	4
SPCH	443	Persuasive Speaking	4
SPCH	487	Senior Project	1
SPCH	496, 497	Speech Communication Seminar	2, 1
		*Electives (12 must be upper division) May include up to 12 hours from among courses with COMM, DRMA, JOUR, PREL, or SPCH prefixes, or courses cited in the SPCH curriculum but offered by other departments.	20
			57

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

MASS COMMUNICATION MAJOR (Bachelor of Science)

In addition to the general studies program, required cognates, and all baccalaureate degree requirements as outlined in this bulletin, the B.S. in Mass Communication requires 75 hours in the major and provides an in-depth immersion in the field of communications.

Core Requirements:

COMM	145	Mass Communication Media	4
COMM	231	Broadcast Techniques and Announcing	4
COMM	235	Introduction to Video	4
COMM	357	Communication Law and Ethics	4
COMM	475	Communication Theory	2
COMM	487	Senior Project	1
COMM	495	Colloquium (four colloquia required)	0
COMM	496, 497	Seminar in Mass Media	2,1
DRMA	242	Acting	4
JOUR	245	Media Writing	4
JOUR	246	Reporting Methods	3
JOUR	257	Introduction to Photojournalism	3
SPCH	101	Fundamentals of Speech Communication	4
		*Electives (from COMM, DRMA, JOUR, PREL, SPCH, 20 hours must be upper division.)	35
			75

*Up to 16 hours may be selected from the following approved electives outside the Communications curriculum.

GRPH		Any GRPH courses	
FILM	215	Introduction to Film Literature	4
FILM	312	Development of Film Literature	4
FILM	315	Genre Film Survey	4
HLTH	372	Health Promotion Planning and Evaluation	3
MKTG	381	Principles of Marketing	4
MKTG	383	Principles of Advertising	4
PHTO	256	Digital Photography	3
PHTO	355	Advanced Photography	3
TECH	204	Fundamentals of Electronics	4
WRIT	324	Creative Nonfiction Writing	3
WRIT	336	Drama Writing	3

Cognates:

GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
PHTO	156	Principles of Photography	3

COMMUNICATIONS MINOR

A student minoring in communications must complete 30 quarter hours.

		Electives (selected from COMM, DRMA, JOUR, PREL, SPCH; 9 must be upper division)	30

In addition to courses from the department, a maximum of 10 credits may be selected from the following:

FILM	215	Introduction to Film Literature	4
GRPH	255	Graphic Design and Layout	4
PHTO	156	Principles of Photography	3
MKTG	383	Principles of Advertising	4

Approval of communications adviser required.

DRAMA MINOR

A student minoring in drama must complete 30 quarter hours.

DRMA	242	Acting	4
DRMA	252	Performance	2
DRMA	253	Technical Production	2
DRMA	363	History of Theatre	4
DRMA	364	Fundamentals of Play Production	3
DRMA	365	Applied Play Direction	3
DRMA	442	Advanced Acting	4
		**Electives (4 hours must be upper division)	8
			30

*Electives (4 hours must be upper division). A minimum of 2 hours required for DRMA 252 and 253. Additional hours may apply as electives. A maximum of 16 hours selected from DRMA 252 and DRMA 452 may apply on the drama minor. Non-drama minors may enroll in a maximum of 9 hours selected from DRMA 252 or DRMA 452.

*Classes alternate

**Electives may be chosen from the following:

COMM	302	Video Studio Production	4
DRMA	211	Oral Interpretation	4
DRMA	452	Advanced Performance	1-4
ENGL	358	Classical Literature	4
ENGL	360	Shakespeare at Ashland	2
ENGL	445	Shakespeare	3
FILM	215	Introduction to Film Literature	4
JOUR	412	Script Writing	3
SPCH	107	Voice and Articulation	4
WRIT	336	Drama Writing	3

Approval of drama adviser required.

JOURNALISM MINOR

A student minoring in journalism must complete 27 quarter hours.

COMM	145	Mass Communication Media	4
JOUR	245	Media Writing	4
JOUR	246	Reporting Methods	3
		Electives (9 must be upper division; minimum of one additional writing course)	16
			27

*Approval of journalism adviser required

PHOTOJOURNALISM MINOR

A student minoring in photojournalism must complete 30 quarter hours.

COMM	357	Communication Law and Ethics	4
GRPH	235	Digital Imaging I	4
JOUR	245	Media Writing	4
JOUR	257	Introduction to Photojournalism	3
JOUR	457	Advanced Photojournalism	3
JOUR	458	Newspaper Staff Photography Practicum	3
		*Electives	9
			30

*Electives may be chosen from the following:

COMM	235	Introduction to Video	4
GRPH	255	Graphic Design and Layout	4
GRPH	336	Digital Imaging II	4
JOUR	341	Magazine Article Writing	4
JOUR	479	Directed Photojournalism Project	1-3
PHTO	355	Advanced Photography	3

*Approval of photojournalism adviser required

SPEECH COMMUNICATION MINOR

A student minoring in speech communication must complete 27 quarter hours:

SPCH	101	Fundamentals of Speech Communication	4
		*Electives (choose from COMM, DRMA, JOUR, PREL, SPCH, 9 must be upper division)	23
			27

*Approval of speech communication adviser required.

LANGUAGES

Walla Walla University is a member of the Adventist Colleges Abroad (ACA) consortium. Foreign language majors who have not had residence in a country in which their language is spoken are required to spend their sophomore or junior year abroad. Language minors are required to spend a minimum of one quarter of study abroad at the intermediate level. 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. Applicants should consult with their major professors, the Department of Communications and Languages, and the Registrar prior to enrollment.

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

FRENCH OR SPANISH MAJOR (Bachelor of Arts)

A student majoring in French or Spanish must complete 41 quarter hours beyond the second quarter of the intermediate level in the major, the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin.

Students participating in the Adventist Colleges Abroad program and majoring in a foreign language must complete a minimum of twelve hours of upper-division courses in the program at Walla Walla University after their year abroad. All majors are required to pass the departmental comprehensive examination.

FRENCH STUDIES MAJOR (Bachelor of Arts)

Major Requirements:

FREN	405	French Stylistics and Rhetoric		4
LANG	406	Language and Culture		4
Four credits must be taken from the following courses:				4
	FREN 394	Directed Reading:	1-2	
	FREN 407	Survey of French and Francophone Literature	4	
	FREN 408	Contemporary French and Francophone Literature	4	
	FREN 496	Seminar in French	1-4	
		*Electives (21 must be upper-division)		29
				41

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

Cognates:

ENGL	485	Linguistics	
or			3
LANG	395	Methods of Teaching Languages	
ANTH	225	Cultural Anthropology	4
SPCH	453	Rhetoric of Western Thought	4

SPANISH STUDIES MAJOR (Bachelor of Arts)

Major Requirements:

LANG	406	Language and Culture		4
SPAN	405	Spanish Stylistics and Rhetoric		4
Four credits must be taken from the following courses:				4
	SPAN 394	Directed Reading:	4	
	SPAN 407	Survey of Spanish and Latino Literature	4	
	SPAN 408	Contemporary Spanish and Latino Literature	4	
	SPAN 496	Seminar in Spanish	4	
		*Electives (21 must be upper-division)		29
				41

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

Cognates:

ENGL	485	Linguistics	
or			3
LANG	395	Methods of Teaching Languages	
ANTH	225	Cultural Anthropology	4
SPCH	453	Rhetoric of Western Thought	4

FRENCH, GERMAN OR SPANISH MINOR

A student minoring in French, German, or Spanish must complete 28 quarter hours beyond FREN 101; GRMN 101; or SPAN 101; 8 quarter hours must be upper-division. Eight hours of intermediate-level language is required. Approval of the academic adviser required.

Language minors are required to spend a minimum of one quarter of study abroad after one year of language at the university level or two years at the high school level. ACA courses will be counted towards residency.

COMMUNICATIONS COURSES (COMM)

COMM 110 SEMINAR: INTERNATIONAL COMMUNICATION 1

An introduction to various disciplines of communication in an international context and a focus on how to approach general study courses in order to support a career in international communication. Students create a collegiate plan of action towards a personal career goal.

COMM 145 MASS COMMUNICATION MEDIA 4

Introduction to the organization, operation, and control of the mass media in America, with emphasis on the social function of mass communication and the characteristics of media audiences.

COMM 231 BROADCAST TECHNIQUES AND ANNOUNCING 4

Introduction to radio station control room operations and announcing performance for radio and television. Emphasis on vocal delivery and on-camera performance for a variety of program types and broadcast situations including continuity, commercials, music, news, interviews, and talk shows.

COMM 235 INTRODUCTION TO VIDEO **4**

An introduction to the video medium as a means of visual and aural expression and communication. Covers basic principles of filmic language and aesthetics, camcorders, and editing as well as basic camera operation, non-linear video editing, web video, and DVD creation. (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: COMM 235 or permission of the instructor.

COMM 301 AUDIO PRODUCTION **4**

Advanced study of the aesthetics of the sound medium and procedures for creative sound production in various media. Covers directing the audio session, studio and remote recording, mixing, production music and sound effects, and an introduction to nonlinear digital production and editing. Prerequisite: COMM 231.

COMM 302 VIDEO STUDIO PRODUCTION **4**

Study and experience in multi-camera studio production for television and other video applications. Course covers basic studio and control room techniques including camera operation, lighting, switching, live graphics, and post-production non-linear editing. Emphasis is on multi-camera directing, production planning and visual aesthetics. Prerequisites: COMM 231 or 235 or permission of instructor.

COMM 303 VIDEO FIELD PRODUCTION **4**

Study and experience in single-camera production, including procedures in preproduction, production, and post production for interview, documentary, drama, news, and music video programs. Students use advanced techniques in non-linear editing as they produce projects. Prerequisite: COMM 235 or permission of 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 COMMUNICATION LAW AND ETHICS **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 401 ADVANCED VIDEO PRODUCTION **4**

Project planning, writing, budgeting, and management of professional level video productions. Using advanced production techniques, students collaborate to create production books and professional quality projects for designated uses. Prerequisites: COMM 301, 302, 303 or permission of instructor. Offered odd years only.

COMM 410 VIDEO POST PRODUCTION WORKFLOW **4**

Experience and in-depth study of advanced post production workflow including color timing, special effects, and finishing. Prerequisite: COMM 235. Offered even years only.

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 475 COMMUNICATION THEORY **2**

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. Prerequisite: Senior standing, majors only.

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 494 COOPERATIVE EDUCATION/PRACTICUM IN MASS MEDIA **0-4**

Practical experience in news reporting and editing, public relations, broadcasting or media production. The student works under the co-direction of professionals in participating agencies and the department. Instructor's permission must be obtained one quarter before registration. Graded S or NC.

COMM 495 COMMUNICATIONS AND LANGUAGES COLLOQUIUM (OR LANG 495) **0**

A series of lectures, programs, discussions, and other activities presented by communication and/or language professionals. Majors are required to attend four quarters, at least one must be during the senior year. Graded S or NC.

COMM 496, 497 SEMINAR IN MASS MEDIA **2, 1**

An integrating course required of all mass media majors in the senior year. Study includes a review of literature, research, and research methods in media; experience in writing critical reviews; individual research projects in areas of special relevance to the student; group conferences and oral presentation of formal papers. Prerequisite: COMM 475.

FILM 215 INTRODUCTION TO FILM LITERATURE **4**

See the English section of this bulletin.

MKTG 381 PRINCIPLES OF MARKETING **4**

See the Business section of this bulletin.

MKTG 383 PRINCIPLES OF ADVERTISING **4**

See the Business section of this bulletin.

SOCI 451 RESEARCH METHODS **4**

See the Social Work section of this bulletin.

DRAMA COURSES (DRMA)

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 Prerequisite: SPCH 107.

DRMA 252 PERFORMANCE **0-4; 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 **0-4; 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 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 only.

DRMA 364 FUNDAMENTALS OF PLAY DIRECTION **3**

The theory and practice of play direction, designed to familiarize the student with the skills necessary to lead a cast and technical crew. Includes the study of elements such as play selection and analysis; collaboration with the cast, designers, stage managers, and dramaturge; casting and rehearsal technique and management; and aesthetic, ethical, and economic concerns. Prerequisite: DRMA 242.

DRMA 365 APPLIED PLAY DIRECTION **3**

Exploration of the fundamentals of play direction through the production and direction of a one-act play or a cutting from a longer play for public performance. Prerequisites: DRMA 242 and DRMA 364, or permission of instructor.

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 452 ADVANCED PERFORMANCE **0-4**

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. Non-drama minors may enroll in a maximum of 9 hours selected from DRMA 252 or DRMA 452.

JOURNALISM COURSES (JOUR)

JOUR 245 MEDIA WRITING **4**

Introduction to writing news and feature stories for publication in newspapers and in online media. Prerequisites: ENGL 122.

JOUR 246 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 247 COPY EDITING **3**

Introduction to the practice of copy editing for print; includes practice in editing copy for content and style, page editing, and design. Prerequisite: JOUR 245 or permission of instructor.

JOUR 257 INTRODUCTION TO PHOTOJOURNALISM **3**

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 35mm SLR digital camera is required. Two lectures and one laboratory per week. (Course fees apply)

JOUR 341 MAGAZINE ARTICLE WRITING **4**

Analysis of magazine markets, fundamentals of gathering materials for articles, and preparation of manuscripts for publication.

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 246 or permission of instructor.

JOUR 347 BROADCAST NEWSWRITING **3**

An introduction to electronic journalism, including gathering, evaluating, and writing broadcast news copy. The emphasis for the course is on writing broadcast news that is accurate, clear, interesting, concise, and that conforms to industry style. Prerequisite: JOUR 245 or permission of instructor.

JOUR 348 CREATIVITY AND COMMUNICATION **3**

Through writing, reading, and creative outings, 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 creative works. For writers, film-makers, videographers, artists, designers, poets, musicians and creative people of all disciplines.

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 412 SCRIPT WRITING 3

Writing techniques for multimedia, drama, documentary, broadcast (commercials, news, continuity), and instructional media. Offered even years only.

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 PUBLICATION PRODUCTION 4

Instruction and practice in copy editing, headline writing, and cutline writing; publication design and print production. Each student will plan a project consisting of planning a new publication, with prospectus and dummy copy. Prerequisite: GRPH 255. Not a writing elective. (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 only. (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.

WRIT 335 NARRATIVE WRITING 3

See the English section of this bulletin.

WRIT 389 WRITING THEORY 3

See the English section of this bulletin.

GBUS 370 BUSINESS COMMUNICATION 4

See the Business section of this bulletin.

PUBLIC RELATIONS (PREL)

PREL 333 STRATEGIES FOR FUND RAISING **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. Offered even years only.

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, 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.

SPEECH COMMUNICATION COURSES (SPCH)

SPCH 101 FUNDAMENTALS OF SPEECH COMMUNICATION **4**

Introduction to the procedure of public speaking. Emphasis on acquiring ease, a conversational attitude, and reasonable facility in organizing and delivering content relevant to the audience.

SPCH 107 VOICE AND ARTICULATION **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.

SPCH 207 SMALL GROUP COMMUNICATION **3**

Study of the nature of group and interpersonal processes; includes leadership and participation in group discussion.

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; employs readings, discussion, and strategies useful in understanding and improving one's interpersonal interactions.

SPCH 341 ARGUMENTATION **4**

Examination of informal logic to develop critical thinking; includes study of evidence, reasoning, and fallacies; application of evidence and logical forms by analyzing current rhetoric and debating contemporary issues. Prerequisite: SPCH 101. Offered odd years only.

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 383 BIBLICAL PREACHING: EVANGELISM **2**

Preparation and delivery of Biblical sermons with a focus on evangelism and preaching for special occasions. 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 along with various other in and out of class assignments. Prerequisite: SPCH 101.

SPCH 443 PERSUASIVE SPEAKING **4**

Study of motivation in human behavior as applied by the public communicator in the process of persuasion; 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 only.

SPCH 453 RHETORIC OF WESTERN THOUGHT **4**

Study of the principles of rhetoric proposed by Aristotle, Quintillian, Cicero, and others; the relationship of the principles of rhetoric to contemporary speechmaking. Prerequisites: SPCH 101. Offered as needed.

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.

SPCH 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.

SPCH 494 COOPERATIVE EDUCATION/PRACTICUM IN MASS MEDIA **0-4**

Practical experience in event planning, public relations, public speaking or other speech communication related activity. The student works under the co-direction of professionals in participating agencies and the department. Instructor's permission must be obtained one quarter before registration. Graded S or NC.

SPCH 496, 497 SPEECH COMMUNICATION SEMINAR **2, 1**

An integrating course required of all speech communication majors in the senior year. Includes review of literature and research methods in speech communication, experience in writing and presenting critical reviews, and development and formal presentation of assigned projects.

ENGL 484 HISTORY OF THE ENGLISH LANGUAGE **3**

See the English section of this bulletin.

ENGL 485 LINGUISTICS **3**

See the English section of this bulletin.

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY COURSES (SPPA)

SPPA 210 SURVEY OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY **4**

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 only.

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.)

LANGUAGE COURSES

FRENCH COURSES (FREN)

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 370 SURVEY OF FRENCH LITERATURE **4**

Survey of French masterworks from La Chanson de Roland to the present. Introduction to literary analysis; lectures, reports, required library reading. Prerequisite: permission of instructor. Alternated with FREN 407 and FREN 408.

FREN 394 DIRECTED READING: **1-2; 4**

Assigned readings and reports in French. Prerequisites: FREN 370 or equivalent or permission of instructor.

FREN 405 FRENCH STYLISTICS AND RHETORIC **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 French 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 every third year.

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 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 every third year.

FREN 496 SEMINAR IN FRENCH **1-4; 4**

Includes selected readings, studying research methods, giving oral reports, and writing scholarly papers.

GERMAN COURSES (GRMN)

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.

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.

LATIN COURSES (LATN)

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.

SPANISH COURSES (SPAN)

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 370 SURVEY OF SPANISH LITERATURE **4**

Study of the development of Spanish literature from the 12th century to the present; includes a survey of the various genres of Spanish literature, supplemented by reading certain works in their entirety. Conducted in Spanish. Prerequisite: permission of instructor. Offered every third year.

SPAN 394 DIRECTED READING: **1-2; 4**

Assigned readings and reports in Spanish. Prerequisites: permission of instructor.

SPAN 405 SPANISH STYLISTICS AND RHETORIC **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 LATINO 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: permission of instructor. Offered every third year.

SPAN 408 CONTEMPORARY SPANISH AND LATINO LITERATURE 4

A course designed to analyze significant works and key themes relating to the Latino Experience. This class will examine contemporary Latino literature in the United States. Will be offered 2011-2012.

SPAN 496 SEMINAR IN SPANISH 1-4; 4

Includes selected readings, studying research methods, giving oral reports, and writing scholarly papers.

LANGUAGE GENERAL COURSES (LANG)

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. Will not apply on a major or minor in languages.

LANG 406 LANGUAGE AND CULTURE 4

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 494 COOPERATIVE EDUCATION 0-3

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. Prerequisite: Approval of the department.

LANG 495 COMMUNICATIONS AND LANGUAGES COLLOQUIUM 0 (OR COMM 495)

A series of lectures, programs, discussions, and other activities presented by communication and/or language professionals. Majors are required to attend four quarters, at least one must be during the senior year. Graded S or NC.

COMPUTER SCIENCE

Kenneth Wiggins, Chair; Larry Aamodt, Jonathan Duncan, James Klein.

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, Bachelor of Science and Associate 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 Bachelor of Science degree will prepare students for careers or graduate study in computer science. The Bachelor of Arts degree will prepare students for careers in fields applying computer information and technology. The Bachelor of Science in Engineering with a concentration in computer engineering will prepare students for careers or graduate study in both computer science and computer engineering.

COMPUTER SCIENCE MAJOR (Bachelor of Arts)

A student majoring in computer science must complete 47 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 MFT exam in computer science. Students planning to go to graduate school in computer science should also take the Graduate Record Examination, general and subject (Computer Science) sections.

Major Requirements:

CPTR	141	Introduction to Programming	4
CPTR	142, 143	Data Structures, Algorithms and Objects	4, 4
CPTR	215	Assembly Language Programming	3
CPTR	316	Programming Languages	4
CPTR	345	Theory of Computation	4
CPTR	352	Operating System Design	4
CPTR	454	Design and Analysis of Algorithms	4
		Electives (8 must be upper division)	16
			47

*Electives must be chosen in consultation with and approved by the academic adviser and will typically have one of the following prefixes: CIS, CPTR, ENGR, or MATH.

Cognates:

ENGR	354	Digital Logic	3
MATH	123	Survey of Calculus	
	or		4
MATH	181	Analytic Geometry and Calculus I	
MATH	250	Discrete Mathematics	4

MATH	289	Linear Algebra and Its Applications	3
MATH	206	Applied Statistics	
	or		4
MATH	315	Probability and Statistics	

COMPUTER SCIENCE MAJOR (Bachelor of Science)

A student majoring in computer science must complete the major core requirements, major cognate requirements, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. In addition, students must choose to complete one of three options. Senior students are required to take the Major Field Test. Students planning to go to graduate school in Computer Science should also take the Graduate Record Examination, general and subject (Computer Science) sections.

COMPUTER SCIENCE MAJOR (B.S.) CORE AND COGNATE REQUIREMENTS:

Core Requirements:

CPTR	141	Introduction to Programming	4
CPTR	142, 143	Data Structures, Algorithms, and Objects	4, 4
CPTR	215	Assembly Language Programming	3
CPTR	316	Programming Languages	4
CPTR	345	Theory of Computation	4
CPTR	352	Operating System Design	4
CPTR	454	Design and Analysis of Algorithms	4
CPTR	496, 497, 498	Seminar	3
			34

Cognates:

ENGR	354	Digital Logic	3
MATH	181, 281, 282	Analytical Geometry and Calculus I-III	12
MATH	206	Applied Statistics	
	or		4
MATH	315	Probability and Statistics	
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3

EMBEDDED SYSTEMS CONCENTRATION

The Embedded Systems Concentration serves students who want a career that is focused on developing computer-based devices.

CPTR	350	Computer Architecture	4
CPTR	435	Software Engineering	4
ENGR	228	Circuit Analysis	4
ENGR	355	Embedded System Design	4
ENGR	433	Digital Design	4
		*Electives (Must be CPTR)	8
			28

SOFTWARE SYSTEMS CONCENTRATION

The Software Systems Concentration serves students who want a career as software developers and who want to become expert at developing large scale software, working in teams, and producing products that meet customer needs.

CPTR	235	Web Application Development	4
CPTR	301	Java and Object-Oriented System Design	4
CPTR	415	Introduction to Database Systems	4
CPTR	435	Software Engineering	4
		Electives (4 must be upper-division CPTR)	12
			28

PREPARATION FOR GRADUATE STUDY CONCENTRATION

The Preparation for Graduate Study Concentration serves students who want to prepare to enter professional training in a graduate program.

CPTR	350	Computer Architecture	4
CPTR	425	Introduction to Networking and Computer I/O	4
CPTR	445	Introduction to Artificial Intelligence	4
		*Electives (4 must be upper-division CPTR)	16
			28

*Electives must be chosen in consultation with and approved by the academic adviser and will typically have one of the following prefixes: CIS, CPTR, ENGR, or MATH.

COMPUTER ENGINEERING (Bachelor of Science in Engineering)

See the computer engineering concentration 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 of this bulletin.

COMPUTER PROGRAMMING (Associate of Science)

A student specializing in computer programming must complete the area requirements, the required cognates, the general studies program, and all associate degree requirements as outlined in this bulletin.

Area Requirements:

CPTR	141	Introduction to Programming	4
CPTR	142, 143	Data Structures, Algorithms and Objects	8
CPTR	215	Assembly Language Programming	3
CPTR	235	Web Application Development	4
CPTR	301	Java and Object-Oriented System Design	4
		*Electives	30
			53

*Electives must be chosen in consultation with and approved by the academic adviser and will typically have one of the following prefixes: CIS, CPTR, ENGR, or MATH.

Cognates:

MATH	123	Survey of Calculus	
	or		4
MATH	181	Analytical Geometry and Calculus I	
MATH	206	Applied Statistics	4
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3

COMPUTER SCIENCE MINOR

A student minoring in computer science must complete 30 quarter hours chosen in consultation with and approved by the academic adviser from the following prefixes: CIS, CPTR, ENGR, MATH. Four credits must be upper division.

INFORMATION SYSTEMS MINOR

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

COMPUTER SCIENCE COURSES (CPTR)

CPTR 110 PRINCIPLES OF COMPUTING 2

An introduction to the field of computing including the history and current trends of computing; social and ethical issues; hardware and software concepts; language, spreadsheet, and database applications; and the internet. Does not apply to major in computer science.

CPTR 141 INTRODUCTION TO PROGRAMMING 4

Programming-in-the-small, introducing computer science principles and software engineering concepts for designing, coding, executing, and debugging within the C family of programming languages. Laboratory work required.

CPTR 142, 143 DATA STRUCTURES, ALGORITHMS AND OBJECTS 4, 4

Topics include lists, stacks, queues, trees, graphs, searching, sorting, and hashing using concepts of object-oriented programming, space-time efficiency, and software engineering. Team projects and laboratory work required. Prerequisite: CPTR 141.

CPTR 215 ASSEMBLY LANGUAGE PROGRAMMING 3

Introduction to computer architecture, machine language, and assembly language. Laboratory work required. Prerequisite: CPTR 141.

CPTR 235 WEB APPLICATION DEVELOPMENT 4

Introduction to web application development including UNIX systems software, web servers, database management systems, server - and client - side scripting languages, mark-up languages, and GUI design. Laboratory work and project required. Prerequisite: CPTR 141 or other programming experience. Offered odd years only.

CPTR 301 JAVA AND OBJECT-ORIENTED SYSTEM DESIGN 4

Software design and construction in the context of Object-Oriented Programming libraries. Laboratory work required. Prerequisite: CPTR 143.

CPTR 316 PROGRAMMING LANGUAGES **3-4**

Introduces a variety of programming language paradigms and their implementations. Computer science majors must take four hours. Computer engineering majors may take three hours. Laboratory work required. Prerequisites: CPTR 143.

CPTR 345 THEORY OF COMPUTATION **4**

Study of the basic theoretical principles of computer science. Areas covered include Chomsky's Hierarchy of formal languages, grammars, and machines; computability by Turing machines and recursive functions, non-computability, and computational complexity. Emphasis on practical implications. Offered even years only.

CPTR 350 COMPUTER ARCHITECTURE **4**

Study of the organization and architecture of computer systems with emphasis on the classical von Neumann architecture. Topics include instruction processing, addressing, interrupt structures, memory management, microprogramming, procedure call implementations, and multiprocessing. Laboratory work required. Prerequisites: CPTR 215, ENGR 354.

CPTR 352 OPERATING SYSTEM DESIGN **4**

Principles of operating systems, process management, memory management, file system management, device management, resource allocation, security and protection. Laboratory work required. Prerequisite: CPTR 143, CPTR 215.

CPTR 355 COMPUTER GRAPHICS **4**

Introduction to the production of graphical representations of 2- and 3-dimensional objects using the computer. Theory and application of affine matrix transformations to manipulate these objects. Subtopics include fractals and interated function systems (IFS tables), graftals, Beziér curves, stereopsis, animation and morphing. Pair programming and laboratory work required. Prerequisites: CPTR 141; MATH 117 or equivalent. Offered odd years only.

CPTR 415 INTRODUCTION TO DATABASE SYSTEMS **4**

Fundamental concepts, system organization, and implementation of database systems. The Relational data model, query languages; database design and normal forms. Laboratory work required. Prerequisites: CPTR 143, MATH 250. Offered even years only.

CPTR 425 INTRODUCTION TO NETWORKING AND COMPUTER I/O **4**

Concepts, principles, and implementation of modern computer I/O; networks, protocol layers, networking algorithms, and I/O programming. Laboratory work required. Prerequisite: CPTR 352.

CPTR 435 SOFTWARE ENGINEERING **4**

Fundamentals of software engineering using a group project as the basic vehicle. Topics covered include software quality characteristics, the software engineering process, life cycles, and tools; the issues involved in building large software systems, professionalism, and ethics. Laboratory work required. Prerequisites: CPTR 143.

CPTR 445 INTRODUCTION TO ARTIFICIAL INTELLIGENCE **4**

A survey of key concepts and applications of artificial intelligence (AI) with languages commonly used for building AI systems. Subtopics include propositional logic, knowledge representation, state space/searching, heuristic search, expert systems, expert system shells, natural language processing, and cognitive learning models. Team project and laboratory work required. Prerequisite: CPTR 143. Offered even years only.

CPTR 454 DESIGN AND ANALYSIS OF ALGORITHMS **4**

Application of techniques using asymptotic notations, unit costs, and recurrence relations to the analysis of algorithms. Covers basic design strategies by analyzing and implementing algorithms. Proof-of-correctness methods are presented. Examples of NP-complete and NP-hard problems are discussed. Laboratory work required. Prerequisites: CPTR 143 and MATH 250. Offered odd years only.

CPTR 460 PARALLEL AND DISTRIBUTED SYSTEMS **4**

Concepts of distributed and parallel systems; parallel and distributed architectures, parallel programming languages, parallel algorithms. Programming in one or more high-level parallel language. Laboratory work required. Prerequisites: CPTR 143, MATH 289. Offered even years only.

CPTR 464 COMPILER DESIGN **4**

Fundamentals of compilers and interpreters; symbol tables; lexical analysis, syntax analysis, semantic analysis, code generation, and optimization for general purpose programming languages. Laboratory work required. Prerequisite: CPTR 143, CPTR 215. Offered odd years only.

CPTR 494 COOPERATIVE EDUCATION **0-2; 8**

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in an off-campus setting. Prerequisite: CPTR 143 and approval of major adviser one quarter in advance of registration. Graded S or NC.

CPTR 495 COLLOQUIUM **0**

Presentation and discussion of current topics of interest within the computer science profession. Required each quarter of all Junior and Senior CS majors. Graded S or NC.

CPTR 496, 497, 498 SEMINAR **1, 1, 1**

Presentation and discussion of current topics of interest within computer science. Each student is required to conduct an approved design project from conception to final oral and written reports. Prerequisite: Senior standing in computer science.

INFORMATION TECHNOLOGY COURSES (INFO)

INFO 250 SYSTEM SOFTWARE **1; 8**

Study of system software from a user and/or administrative perspective. Topics vary and may be repeated for credit. Prerequisite: Permission of instructor.

SCHOOL OF EDUCATION AND PSYCHOLOGY

Julian Melgosa, Dean; Austin Archer, Robert Egbert, Linda Ivy, Ginger Ketting-Weller, Debbie Muthersbaugh, Tamara Randolph, Lee Stough.

The School of Education and Psychology offers programs leading to a Bachelor of Science degree with majors in elementary education, psychology, and forensic psychology. The school also offers a Bachelor of Arts degree with a major in psychology. Minors are available in education and psychology, and preparation is provided for state and denominational certification in both elementary and secondary education. With careful planning, a bachelor's degree and the first teaching certificate may be earned in four years of study.

For a description of programs leading to a master's degree in Education or Counseling Psychology, see the Graduate Bulletin.

Mission: The School of Education and Psychology at Walla Walla University supports the mission of the University and assists students as they acquire knowledge and expertise in their fields of study within the context of Christian faith. To this end our faculty and students are committed to:

- quality in scholarship and research;
- the development of social, moral, and spiritual values;
- the integration of learning, faith, and service.

Teacher Preparation Programs: WWU offers a Bachelor of Science degree in Elementary Education. Teacher certification is also available to those who wish to teach in various content areas at the secondary school level. Additional information can be found at http://www.wallawalla.edu/3037

Student Characteristics: The Teacher Certification Program is made up of a relatively small number of students, thus allowing plenty of interactive opportunities with faculty and staff. Most of these students are undergraduates of traditional college age.

Admission Requirements:

- Junior class standing or a score of at least 23 on the ACT or a score of at least 1040 on the SAT.
- Minimum GPA of at least 2.75 in all course work that applies to certification requirements.
- Passing score in all required sections of the WEST-B.
- Formal application, law enforcement background check, and moral character clearance.
- No grade less than C

For a complete description of the teacher preparation program, see http://www.wallawalla.edu/2968

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 Washington State Board of Education.

CONTEXTUAL INFORMATION

Best Practices:

- Blend of theory and practice. Teacher certification candidates spend between 93 and 231 clock hours observing and assisting in K-12 classrooms prior to student teaching.
- Methods of teaching courses are aligned with Washington state's Essential Academic Learning Requirements (EALRs).
- Portfolios are used formatively and summatively to document "positive impact on student learning" in the K-12 setting.

Notable Features and Accomplishments in 2010-2011:

- One elementary education major received the Zelma Nethery Wills Piper Memorial Scholarship.
- Fourteen teacher certification candidates were awarded the Eleanor Schofield Memorial Teachers' Scholarship.
- One elementary education major received the Richard and Dena Hammill Scholarship.
- Two elementary education majors received the Doreen Paulson-Evans Memorial Scholarship.
- One elementary education major received the Appreciation of Elementary Education Scholarship.

PROGRAM STATISTICS

S.2A1 /2B1	Total number of students in our teacher preparation program, all specializations in academic year 2010-2011	74
S.2B1	Number of students in supervised student teaching in academic year 2010-2011	33

Number of faculty members who supervised student teachers:

S.2B2	Full-time faculty in professional education	3
S.2B2	Part-time faculty in professional education but full-time in the institution	16
S.2B2	Part-time faculty in professional education, not otherwise employed by the institution	4
S.2B3A	Total faculty student teaching supervisors (Sum of S.3A, S.3B, S.3C)	17
S.2B3B	Student teacher/faculty ratio	3.1:1
S.2B3B	The student/faculty ratio, based upon faculty FTE was:	10.1:1
S.2B3B	The average number of student teaching hours per week required	30
S.2B3B	The total number of weeks of supervised student teaching required	10
S.2B3B	Minimum total number of hours required	280

ELEMENTARY EDUCATION MAJOR (Bachelor of Science)

To be considered for admission into the Teacher Certification Program (TCP), students must have junior standing *or* have earned at least a score of 23 on the American College Test (ACT) *or* have earned a score on the Scholastic Aptitude Test (SAT) of at least 931 if they graduated from high school prior to 1996 or a score of at least 1040 if they graduated in or after 1996. The state of Washington may change minimum scores between bulletin printings. Students may verify minimum acceptable scores with the certification officer of the School of Education and Psychology.

To be admitted into the Teacher Certification Program, students must demonstrate satisfactory scholarship, professionalism, and personal fitness for teaching. These terms are defined and explained in the Minimum Competencies document distributed in EDUC 210 Foundations of Education. The document is also available upon request from the certification officer of the School of Education and Psychology.

Students applying for admission to the Teacher Certification Program are required by state law to earn a passing score on the Washington Educator Skills Test-Basic (WEST-B) prior to admission into the program. Test dates and locations are available from the School of Education and Psychology.

A student majoring in elementary education must satisfactorily complete the required pre-candidacy courses, certification program courses, endorsement courses, cognates, the general studies program, and baccalaureate degree requirements as listed in this bulletin. Thirty credit hours in an approved content area must also be satisfactorily completed.

A minimum grade point average of not less than 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 any course or any combination of courses in the Pre-Candidacy courses and the Teacher Certification Program combined. Senior students seeking certification are required to take and pass the Washington Educator Skills Test-Endorsement (WEST-E) in elementary education prior to their student teaching. In addition, students desiring to pursue graduate studies in education are encouraged to take the Graduate Record Examination (general).

Practicum experiences in elementary education require a formal application, law enforcement background check, and moral character clearance. Contact the School of Education and Psychology for details.

Student teaching requires formal application to the School of Education and Psychology. Student teaching applications, available from the certification officer, are due by the end of Fall quarter prior to the year in which the student plans to enroll for the experience.

Elementary Education (B.S.) Major Requirements:

Phase 1: Pre-Candidacy Program

Pre-candidacy courses must be completed with a minimum grade-point average of 2.75 before a student may proceed to the Teacher Certification Program. Students may apply for admission to the Teacher Certification

Program during the last quarter of pre-candidacy courses. A minimum of a B- average in the College Writing/Research Writing sequence is required.

Pre-Candidacy Courses:

EDUC	210	Foundations of Education	3
EDUC	247	Elementary School Exploratory	1
PSYC	215	Child and Adolescent Development	4
PSYC	220	Educational Psychology	3

Washington Educator Skills Test-Basic (WEST-B):
Students must pass all sections of WEST-B before acceptance into Phase 2.

Pre-Candidacy Cognates:

ENGL	121, 122	College Writing I, II (B- average required)	6
MATH	112, 113	Mathematics for Elementary Teachers	6

Phase 2: Teacher Certification Program

Formal acceptance into the Teacher Certification Program is required before registering for the courses listed below. To be admitted into the Teacher Certification Program, students must demonstrate satisfactory scholarship, professionalism, and personal fitness for teaching. These terms are defined and explained in the Minimum Competencies document distributed in EDUC 210 Foundations of Education. The document is also available upon request from the certification officer of the School of Education and Psychology.

Teacher Certification Courses:

EDUC	315	Classroom Technology Tools	3
EDUC	350	Language Development in Young Children	3
EDUC	360	Elementary Curriculum and Instruction: Reading and Language Arts	5
EDUC	373	Elementary Curriculum and Instruction: Mathematics	4
EDUC	382	Elementary Curriculum and Instruction: Social Studies	2
EDUC	383	Elementary Curriculum and Instruction: Science and Health	3
EDUC	390	Measurement and Evaluation in Education	4
EDUC	405	Classroom Organization and Management	3
EDUC	410	Philosophy of Education	3
EDUC	425	Legal and Ethical Aspects of Education	2
EDUC	444	Teaching Culturally Diverse Students	2
EDUC	476	Student Teaching Orientation	0
EDUC	480	Student Teaching in the Elementary School	12
EDUC	495	Colloquium: Child Abuse	0
SPED	405	Teaching The Exceptional Child	3

Washington Educator Skills Test-Endorsement (WEST-E):

Students must pass the WEST-E in elementary education before beginning their student teaching. If after attempting more than once, a candidate has not passed the WEST-E, he/she may petition the School of Education and

Psychology to proceed to student teaching. If the petition is granted, the candidate will sign a statement of understanding that if he/she does not pass the WEST-E but completes all other requirements, the B.S. Elementary Education degree will be granted without Washington state teacher certification. Students must pass the WEST-E in elementary education to receive Washington state teacher certification.

Elementary Education Endorsement Requirements:

ART	395	Methods of Teaching Art	2
ENGL	223	Research Writing	3
GEOG	252	Physical Geography	4
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
SPCH	101	Fundamentals of Speech Communication	4
ASTR, CHEM, PHYS		Physical Science Coursework	4/8
BIOL		Life Science Coursework	4/8

Note: Pre-candidacy cognates and Teacher Certification Program courses also partially fulfill the requirements of this section.

Minor in an Approved Content Area:

Elementary education majors must complete the requirements for an approved minor. 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 Content Areas

Art	History
Biology	Mathematics
Chemistry	Middle Level Mathematics
English/Language Arts	Music
French	Physics
German	Spanish
Health/Fitness	

Approved Non-Minor Content Areas

Humanities	Social Studies
Science	

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 a denominational endorsement in Bible.

Non-Minor Content Areas

Humanities (completion of 31 credits)

Select from the following courses in consultation with your adviser.

Select 8 credits from the following courses:

ENGL	210, 211, 212	Survey of English and American Lit	4, 4, 4
ENGL	214	Themes in Literature	4
ENGL	358	Classical Literature	
	or		4
ENGL	359	World Literature	

Select 3 credits from the following courses:

WRIT	324	Creative Nonfiction Writing	3
WRIT	334	Poetry Writing	3
WRIT	336	Drama Writing	3

Select 8 credits from the following ENGL/WRIT courses:

ENGL	234	Literary Analysis	4
ENGL	357	The African-American Experience	
	or		
ENGL	358	Classical Literature	4
	or		
ENGL	359	World Literature	
ENGL	374	Literature for Children	3
ENGL	375	Literature for Young Adults	3
ENGL	384	Advanced English Grammars	3
FILM	416	Teaching with Film Literature	4
WRIT	389	Writing Theory	3

Select 12 credits from the following courses:

HIST	121, 122	History of Western Civilization	4, 4
PLSC	224	American Government	4
ECON	204	Fundamentals of Economics	4
HIST	359	The American Economy	4
HIST	446	History of The Pacific Northwest	4

Science (Completion of 32 credits)

Select 8-12 credits from each of the following sciences in consultation with your adviser.

Biology

BIOL	105, 106	Contemporary Biology	4, 4
	or		
BIOL	141, 142, 143	General Biology	4, 4, 4

Chemistry

CHEM	101, 102	Introductory Chemistry	4, 4
	or		
CHEM	141, 142, 143	General Chemistry	3, 3, 3
CHEM	144, 145, 146	General Chemistry Laboratory	1, 1, 1

Physics

PHYS	201, 202	Conceptual Physics	3, 3
PHYS	204, 205	Conceptual Physics Laboratory	1, 1
	or		
PHYS	211, 212, 213	General Physics	3, 3, 3
PHYS	214, 215, 216	General Physics Laboratory	1, 1, 1
	or		
ASTR	141, 142, 143	General Astronomy	3, 3, 3
ASTR	144, 145, 146	General Astronomy Laboratory	1, 1, 1

Social Studies (Completion of 32 credits)

Select from the following courses in consultation with your adviser.

History - minimum of 16 credits (sequence not required):

HIST	120, 121, 122	History of Western Civilization	4, 4, 4
	or		
HONR	131, 132, 133	Western Thought	4, 4, 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
SOCI	345	Sociology of Communities	4

Additional Requirements for Denominational Certification

EDUC	381	Elementary Curriculum and Instruction: Religion	2
EDUC	497	Colloquium: Small Schools	0

16 Religion credits are required for certification and must include:

RELB		(Selected from courses with RELB prefix)	6
RELH	457	History of Adventism	3
RELT	202	Christian Beliefs	4
RELT	417	Inspiration and Revelation	3

PREPARATION FOR SECONDARY EDUCATION

To be considered for admission into the Teacher Certification Program (TCP), students must have junior standing *or* have earned at least a score of 23 on the American College Test (ACT) *or* have earned a score on the Scholastic Aptitude Test (SAT) of at least 931 if they graduated from high school prior to 1996 or a score of at least 1040 if they graduated in or after 1996. The state of Washington may change minimum scores between bulletin printings. Students may verify minimum acceptable scores with the certification officer of the School of Education and Psychology.

Students applying for admission to the Teacher Certification Program are required by state law to earn a passing score on the Washington Educator

Skills Test-Basic (WEST-B) prior to admission into the program. Test dates and locations are available from the School of Education and Psychology.

To be admitted into the Teacher Certification Program, students must demonstrate satisfactory scholarship, professionalism, and personal fitness for teaching. These terms are defined and explained in the Minimum Competencies document distributed in EDUC 210 Foundations of Education. The document is also available upon request from the certification officer of the School of Education and Psychology.

The secondary certification program requires completion of an approved endorsement (major), passing scores on the Washington Educator Skills Test-Endorsement (WEST-E) in the endorsement area, and professional courses as specified. To be recommended for certification, candidates must maintain a grade-point average of not less than 2.75 in professional education/psychology course work and in each endorsement area. No grade lower than C will apply. A total of two repeats are permitted in any course or any combination of courses in Pre-Candidacy courses and the Teacher Certification Program combined.

Practicum experiences in secondary education require a formal application, law enforcement background check, and moral character clearance. Contact the School of Education and Psychology for details.

Student teaching requires formal application to the School of Education and Psychology. Student teaching applications, available from the certification officer, are due by the end of Fall quarter prior to the year in which the student plans to enroll for the experience.

Secondary Teaching Certification Requirements:

Pre-Candidacy courses must be completed with a minimum grade-point average of 2.75 before a student may proceed to the Teacher Certification Program. Students may apply for admission to the Teacher Certification Program during the last quarter of Pre-Candidacy courses. A minimum of a B- average in the College Writing/Research Writing sequence is required.

Phase 1: Pre-Candidacy Program
Pre Candidacy Courses:

EDUC	210	Foundations of Education	3
EDUC	267	Middle School Exploratory	1
PSYC	215	Child and Adolescent Development	4
PSYC	220	Educational Psychology	3

Washington Educator Skills Test-Basic (WEST-B):
Students must pass all sections of WEST-B before acceptance into Phase 2.

Pre-Candidacy Cognates:

ENGL	121, 122	College Writing I, II (B- average required)	6
MATH	105	Finite Mathematics (or more advanced math course)	4

Phase 2: Teacher Certification Program
Teacher Certification Courses:

EDUC	315	Classroom Technology Tools	3
EDUC	365	Instructional Methodology	3
EDUC	367	Instructional Methodology Practicum	1
EDUC	390	Measurement and Evaluation in Education	4
EDUC	395	Methods course, major or minor academic field	3
EDUC	410	Philosophy of Education	3
EDUC	425	Legal and Ethical Aspects of Education	2
EDUC	444	Teaching Culturally Diverse Students	2
EDUC	475	Teaching Reading Skills in the Content Areas	3
EDUC	476	Student Teaching Orientation	0
EDUC	481	Student Teaching in the Secondary School	12
EDUC	495	Colloquium: Child Abuse	0
SPED	405	Teaching the Exceptional Child	3
			53

Washington Educator Skills Test-Endorsement (WEST-E):
Passing all sections of WEST-E in area of endorsement is a prerequisite for EDUC 481 Student Teaching in the Secondary School.

Teacher Certification Program Cognates:

ENGL	223	Research Writing	3
SPCH	101	Fundamentals of Speech Communication	4
		(or a foreign language sequence)	

Approved Primary Endorsements:
Endorsement requirements frequently exceed graduation requirements. For example, endorsements typically require a methods class appropriate for secondary teaching (grades 5-12). Additional endorsements in Social Studies and Science are available for students who already have, or are completing, an endorsable major. See the secondary education adviser in the School of Education and Psychology for a current certification checksheet.

Primary Endorsement Majors

Art	Biology
Chemistry	English
French	Health/Fitness
History	Mathematics
Music Education	Physics
Spanish	

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 a denominational endorsement in Bible.

Additional Requirements for Denominational Certification

One course chosen from the following:

HLTH	110	Wellness for Living	3
HLTH	205	Survey of Health	2

16 Religion credits are required for certification and must include:

RELB		(Selected from courses with RELB prefix)	6
RELH	457	History of Adventism	3
RELT	202	Christian Beliefs	4
RELT	417	Inspiration and Revelation	3

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, is required.

Course credits more than ten years old that are used to meet initial certification standards will be reviewed by the academic department granting the credit to determine acceptability.

EDUCATION MINOR

A student minoring in education must complete 30 quarter hours. Students who wish to enroll in EDUC, PSYC, or SPED courses that list acceptance to the Teacher Certification Program as a prerequisite should apply for special acceptance with the secretary of the School of Education and Psychology.

EDUC	210	Foundations of Education	3
EDUC	247	Elementary School Exploratory	
or			1
EDUC	267	Middle School Exploratory	
EDUC	410	Philosophy of Education	3
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
PSYC	220	Educational Psychology	3
		*Electives	12
			30

*Electives must be chosen from EDUC or SPED courses.

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 advisers very early in their university careers.

A student majoring in psychology must complete 54 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 psychology.

Major Requirements:

PSYC	140	Introduction to Psychology: Social Foundations	4
PSYC	141	Introduction to Psychology: Biological Foundations	4
PSYC	215	Child and Adolescent Development	4
PSYC	216	Adult Development and Aging	3
PSYC	344	Social Psychology	4
PSYC	366	Theories of Personality	4
PSYC	390	Cognitive Psychology	4
PSYC	430	Psychological Testing	3
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
		*Electives (must be upper division)	6
			54

*Electives must be chosen in consultation with the student's adviser.

Cognates:

A minimum of 19 quarter hours must be completed, including MATH 206 Applied Statistics or a more advanced statistics course. Courses should be chosen from the following with approval of the School of Education and Psychology adviser (advanced courses may be substituted) and must include an entire course sequence:

BIOL	141, 142, 143	General Biology	12
BIOL	121, 122, 123	Anatomy and Physiology	12
CHEM	101, 102	Introductory Chemistry	8
MATH	121, 122	Precalculus Mathematics I, II	8
MATH	206	Applied Statistics	4
PHIL	205	Introduction to Philosophy	4

PHIL	206	Introduction to Logic	4
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Laboratory	3

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 63 quarter hours in the major, consisting of the core requirements and at least six quarter hours of approved electives. 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 advisers very early in their university careers.

Major Requirements:

PSYC	140	Introduction to Psychology: Social Foundations	4
PSYC	141	Introduction to Psychology: Biological Foundations	4
PSYC	215	Child and Adolescent Development	4
PSYC	216	Adult Development and Aging	3
PSYC	344	Social Psychology	4
PSYC	366	Theories of Personality	4
PSYC	390	Cognitive Psychology	4
PSYC	430	Psychological Testing	3
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 (must be upper division)	6
			63

*Electives must be chosen in consultation with the student's adviser.

Cognates:

A minimum of 19 quarter hours must be completed, including MATH 206 Applied Statistics, or a more advanced statistics course, and either PHIL 205 Introduction to Philosophy, or PHIL 206 Introduction to Logic. General Biology is the preferred science sequence. Courses should be chosen from the following with approval of the School of Education and Psychology adviser (advanced courses may be substituted) and must include an entire course sequence:

BIOL	141, 142, 143	General Biology	12
BIOL	121, 122, 123	Anatomy and Physiology	12
CHEM	101, 102	Introductory Chemistry	8
MATH	206	Applied Statistics	4
PHIL	205	Introduction to Philosophy	
or			4
PHIL	206	Introduction to Logic	

FORENSIC PSYCHOLOGY MAJOR (Bachelor of Science)

A student majoring in forensic psychology must complete 64 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.

Major Requirements:

ANTH	225	Cultural Anthropology	4
CORR	285	Introduction to Criminal Justice	3
CORR	385	Criminology	4
CORR	387	Juvenile Delinquency	3
PSYC	140	Introduction to Psychology: Social Foundations	4
PSYC	141	Introduction to Psychology: Biological Foundations	4
PSYC	215	Child and Adolescent Development	4
PSYC	216	Adult Development and Aging	3
PSYC	247	Introduction to Forensic Psychology	4
PSYC	344	Social Psychology	4
PSYC	366	Theories of Personality	4
PSYC	447	Advanced Forensic Psychology	4
PSYC	430	Psychological Testing	3
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
PSYC	498	Senior Project in Psychology	2
SOWK	234	Current Social Problems	4
			64

Cognates:

BIOL	105, 106	Contemporary Biology	
or			8
BIOL	121, 122	Anatomy and Physiology	
CHEM	101, 102	Introductory Chemistry	8
MATH	206	Applied Statistics	4
PHIL	206	Introduction to Logic	4

PSYCHOLOGY MINOR

A student minoring in psychology must complete 30 quarter hours:

PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
PSYC	344	Social Psychology	4
PSYC	455	History and Systems of Psychology	4
		*Electives (3 must be upper division)	14
			30

*Approval of psychology adviser required.

EDUCATION COURSES (EDUC)

EDUC 210 FOUNDATIONS OF EDUCATION 3

Study of social and historical foundations of American education; cultural, political, institutional, and interpersonal influences on school structure, funding, curriculum design, and the practice of teaching.

EDUC 247 ELEMENTARY SCHOOL EXPLORATORY 1

A three-week practicum in an elementary classroom, designed to acquaint the student with teacher responsibilities for planning, organizing, and launching a new school year. Deadline for application is the second week of April. Offered autumn quarter only. Prerequisites: EDUC 210, and Washington State Patrol clearance on file in the office of Education and Psychology. Graded S or NC.

EDUC 267 MIDDLE SCHOOL EXPLORATORY 1

A thirty-hour practicum in a public middle school classroom, designed to acquaint students with student behavior at the grade level assigned, along with teacher responsibilities for planning, implementing, and managing the instructional program. Offered autumn and winter quarters. Prerequisites: EDUC 210 and Washington State Patrol clearance on file in the office of Education and Psychology. Graded S or NC.

EDUC 280 STUDENT LITERACY CORPS EXPERIENCE 1-2

A service-learning course with the specific focus of tutoring persons who are educationally or economically disadvantaged. Students will learn effective methods of literacy tutoring and gain both training and experience in communicating stay-in-school values and building self-esteem. Students will gain experience in working with students from diverse populations and gain understanding of cultural differences. Students will evaluate their own attitudes of individual responsibility to the community. The course will include both in-class and on-site participation.

EDUC 315 CLASSROOM TECHNOLOGY TOOLS 3

Introduces a variety of technologies for teachers to enhance planning, instruction, and assessment. Includes several hardware and software applications, website development, course management systems, mobile devices, and online media.

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 215. Practicum required.

EDUC 360 ELEMENTARY CURRICULUM AND INSTRUCTION: READING AND LANGUAGE ARTS 5

The development of language skills in elementary-age children, including speaking, thinking, listening, reading and writing, drama, and children's literature. Philosophy, curriculum, media, and research-based strategies used in teaching reading and language arts. Practicum required. Prerequisite: Admission to Teacher Certification Program.

EDUC 365 INSTRUCTIONAL METHODOLOGY 3

Study of research-based models and exemplary practices for teaching in the secondary classroom environment; emphasis on human dynamics, rules and routines, conflict resolution, motivational strategies, eliciting parental support, and professional growth. Prerequisite: Admission to Teacher Certification Program.

EDUC 367 INSTRUCTIONAL METHODOLOGY PRACTICUM 1

Laboratory practice in selected teaching skills, utilizing videotaped feedback and one-on-one conferencing. One laboratory per week. Prerequisite or Corequisite: EDUC 365.

EDUC 373 ELEMENTARY CURRICULUM AND INSTRUCTION: MATHEMATICS 4

Survey of the curriculum, media, and research-based strategies used in teaching elementary mathematics, including software evaluation for computer-aided instruction (CAI). Practicum required. Prerequisites: Admission to Teacher Certification Program; MATH 112 and 113 or equivalent.

EDUC 381 ELEMENTARY CURRICULUM AND INSTRUCTION: RELIGION 2

Survey of the curriculum, media, and strategies used in teaching Bible to elementary-age children. Emphasis on building relationships in an environment which nurtures the child's spiritual growth. Prerequisite: Admission to Teacher Certification Program.

EDUC 382 ELEMENTARY CURRICULUM AND INSTRUCTION: SOCIAL STUDIES 2

Survey of the curriculum, media, and research-based strategies used in teaching elementary social studies. Prerequisite: Admission to Teacher Certification Program.

EDUC 383 ELEMENTARY CURRICULUM AND INSTRUCTION: SCIENCE AND HEALTH 3

Survey of the curriculum, media, and research-based strategies used in teaching elementary science and health; emphasis on science as a process of inquiry. Prerequisite: Admission to Teacher Certification Program.

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 and any one of the following EDUC courses: EDUC 360, 365, 373, 382, 383.

EDUC 395 METHODS OF TEACHING SECONDARY SCIENCE 3

A course intended for students seeking secondary endorsements in biology, chemistry, or physics. Study of inquiry based learning experiences in science; the relation of concepts of science to contemporary historical; technological and societal issues, course management, practices, and safety. Prerequisites: EDUC 365 and BIOL 143, or CHEM 143, or PHYS 213 or PHYS 253. Offered even years only.

EDUC 405 CLASSROOM ORGANIZATION AND MANAGEMENT 3

Study of research-based models and exemplary practices for organizing and managing the elementary classroom environment; emphasis on human dynamics, rules and routines, conflict resolution, motivational strategies, and eliciting parental support. Prerequisite: Admission to Teacher Certification Program.

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. Prerequisite: Admission to Teacher Certification Program.

EDUC 444 TEACHING CULTURALLY DIVERSE STUDENTS 2

Study of human diversity and its impact on the educational process; emphasis on instructional and management strategies that respect and value cultural, ethnic, and language differences. Prerequisites: Admission to Teacher Certification Program; EDUC 365 or six hours of elementary methods courses or permission of instructor.

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. Prerequisite: Admission to Teacher Certification Program.

EDUC 476 STUDENT TEACHING ORIENTATION 0

An orientation to the requirements of student teaching and the curriculum and procedures of the school and classroom that will host the student teacher. This course must be taken the quarter preceding enrollment in EDUC 480 or EDUC 481. Students who take student teaching fall quarter must complete this course during the four weeks preceding the start of Walla Walla University's fall quarter. The student must spend a minimum of 30 hours in the host classroom. Prerequisite: Approval by the School of Education and Psychology. Graded S/NC.

EDUC 480 STUDENT TEACHING IN THE ELEMENTARY SCHOOL 6-12

Application of teaching theory in the classroom; full participation in a teaching situation under the supervision of an experienced teacher. Conferences will be conducted with the student teacher by the cooperating teacher and university supervisor. Scheduled group sessions required. Students enrolled in student teaching may not register for other courses without the written permission of the School of Education and Psychology. Student teacher placement is done in cooperation with school districts 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. Students requesting placement outside the Walla Walla Valley will be required to pay an additional fee to cover travel costs associated with administering the Pedagogy Assessment. Prerequisites: EDUC 360, 373, 405, 476 and permission of the School of Education and Psychology. Graded S or NC.

EDUC 481 STUDENT TEACHING IN THE SECONDARY SCHOOL 1-12

Application of teaching theory in the classroom; full participation in a teaching situation under the supervision of an experienced teacher. Conferences will be conducted with the student teacher by the cooperating teacher and university supervisor. Scheduled group sessions required. Students enrolled in student teaching may not register for other courses without the written permission of the School of Education and Psychology. Student teacher placement is done in cooperation with school districts 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. Students requesting placement outside the Walla Walla Valley will be required to pay an additional fee to cover travel costs associated with administering the Pedagogy Assessment. Prerequisites: EDUC 365, 367, 395, 476, Methods course (395) of major or minor academic field; passing scores on the West-E; and permission of the School of Education and Psychology. Graded S or NC. *Students completing an Elementary Education major and a Secondary content major, wanting elementary and secondary certification will need to complete 1-5 credit hours of secondary student teaching and a PPA in that secondary content area.

EDUC 492 EDUCATION OF THE GIFTED (OR SPED 492) 3

Introduction to the design of learning opportunities for gifted children in the light of their psychological characteristics.

EDUC 494 COOPERATIVE EDUCATION 0-3

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by the School of Education and Psychology.

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. (Course fees apply.)

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 COLLOQUIUM: SMALL SCHOOLS **0**

Theory and application of procedures and practices in multigrade and multiage elementary classrooms. Graded S or NC. (Course fees apply.)

PSYCHOLOGY COURSES (PSYC)

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.

PSYC 140 INTRODUCTION TO PSYCHOLOGY: SOCIAL FOUNDATIONS **4**

The study of human behavior, focusing on the social aspects. Includes the scientific bases of psychological investigation as well as an introduction to the social processes that influence both normal and abnormal behavior. Topics such as social influence, individual differences, personality, behavior disorders and therapy will be addressed.

PSYC 141 INTRODUCTION TO PSYCHOLOGY: BIOLOGICAL FOUNDATIONS **4**

The study of human behavior, focusing on the biological aspects. Includes the scientific bases of psychological investigation as well as an introduction to biological processes that influence both normal and abnormal behavior. Topics such as learning and cognitive processes, sensation and perception, human development, and schizophrenia and depression will be addressed.

PSYC 215 CHILD AND ADOLESCENT DEVELOPMENT **4**

Life from prenatal through adolescent years. Emphasis is placed on the emotional, social, physical, motor, and psychological development of the individual.

PSYC 216 ADULT DEVELOPMENT AND AGING **3**

Current methods and theories relating to psychological development, maturity, and decline as evidenced during the adolescent, youth, middle age, and retirement years.

PSYC 220 EDUCATIONAL PSYCHOLOGY **3**

Study of current research in human development, individual differences, learning, cognition, and motivation, with particular reference to elementary and secondary classrooms; emphasis placed on the application of theory to teacher decision-making and problem-solving. This course will not apply toward a psychology major. Prerequisite: permission of instructor.

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. Will not apply toward a psychology major. See the Social Work and Sociology section of this bulletin.

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 only.

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 phenomena in human and animal behavior change is also addressed. Emphasis will be placed on behavioral approaches. Prerequisite: PSYC 130. Offered even years only.

PSYC 344 SOCIAL PSYCHOLOGY 4

The dynamics of social interaction and interpersonal behavior with application to contemporary society. Prerequisite: PSYC 130 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. Practicum 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.

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, MATH 206, and permission of instructor.

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 only.

PSYC 455 HISTORY AND SYSTEMS OF PSYCHOLOGY **4**

Historical development of the various systems and theories of psychology. Prerequisite: PSYC 130.

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.

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, 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 206 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 adviser on research activities such as literature search, preliminary experiments, data collection, data transcription, or data analysis. Prerequisite or corequisite: PSYC 471. Graded S/NC.

PSYC 489 CAREER COUNSELING THEORIES **3**

Theories of career and lifestyle development, counseling approaches, ethical issues, and applications to the diversity of work settings are covered. The changing roles of women and men, dual career families and life-span changes in career are addressed. Offered odd years only.

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 140; 366.

PSYC 493 PSYCHOLOGY PRACTICUM **1-3; 3**

A volunteer experience utilizing psychological skills structured by the student in conjunction with his/her adviser in a community agency. A weekly requirement of three hours in a social service agency which provides the student with a field experience in a local setting. This course is not designed to provide expertise, but simply to introduce students to the complexity and subtlety of applied problems and begin the process of informing them of the theory and methods which psychologists use. A written contract and short final report are required. Prerequisite: Senior status and permission of instructor. Graded S or NC.

PSYC 494 COOPERATIVE EDUCATION **0-4**

Individual contract arrangement involving students, faculty, and cooperating businesses to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by the School of Education and Psychology.

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**

Planning and developing a significant project in undergraduate psychology that focuses on the development of some socially useful program or training. A formal report and/or public presentation is required upon conclusion. Prerequisite: PSYC 473 or permission of the instructor.

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 presented to peers and submitted for presentation at a scientific meeting. Prerequisite: PSYC 473 or permission of the instructor. Graded S or NC.

SPECIAL EDUCATION COURSES (SPED)

SPED 324 ADAPTED PHYSICAL EDUCATION AND RECREATION (OR PETH 324) **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.

SPED 405 TEACHING THE EXCEPTIONAL CHILD **3**

An overview of special education as a field of study and practice in American schools, and its social and historical foundations. Examines the characteristics of handicapping conditions and their impact on the educational setting. Provides an introduction to effective teaching techniques for gifted students and students with mild disabilities. Prerequisite: PSYC 215, admission to the Teacher Certification Program, or permission of instructor.

SPED 436 TEACHING STUDENTS WITH MILD DISABILITIES **4**

In-depth examination and implementation of effective teaching techniques for students with mild disabilities. There will be an emphasis on regular curriculum modifications and adaptations and making accommodations following WAC, IDEA, 504, and ADA requirements.

SPED 492 EDUCATION OF THE GIFTED (OR EDUC 492) **3**

Introduction to the design of learning opportunities for gifted children in the light of their psychological characteristics.

GRADUATE EDUCATION AND PSYCHOLOGY COURSES

Please see the *Graduate Bulletin* for a listing of graduate courses in education, special education, and psychology.

SCHOOL OF ENGINEERING

Douglas Logan, Dean; Larry Aamodt, Bryce Cole, Rob Frohne, Qin Ma, Curtis Nelson, Delvin Peterson, Don Riley, Brian Roth, Melodie Selby, Samuel Sih, 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. Faculty of the Edward F. Cross School of Engineering, in the context of the mission of the University and with broad campus support, strive to provide all students with

- A broad-based, high-quality engineering education that will prepare them to enter, succeed, and grow in the practice of engineering in industry, private practice, and government.
- A sound preparation and motivation for life-long learning, including programs of advanced study in engineering or associated fields.
- An environment that promotes the development of character, teamwork, leadership, and ethical conduct as a foundation for productive service to society, both professionally and personally; and
- An atmosphere that encourages students to develop a spirit of service to community consistent with Christian and humanitarian principles.

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 civil, computer, electrical, and mechanical engineering. The B.S.E. program is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700.

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. Requirements for admission to the School of Engineering are 40 semester credits of English, 10 semester credits of laboratory science, 30 semester credits of mathematics (beyond general mathematics), and 20 semester credits of history. The mathematics background should include algebra, 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.

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. 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 four 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 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 adviser 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.

A student who retains more than 8 hours of grades less than C- on his current scholastic record will automatically have his performance reviewed by the School of Engineering. The school may require that some of the

courses be repeated, or it may establish alternative requirements. All courses with D- and F grades must be repeated to apply toward graduation.

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 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:

LANGUAGE ARTS **11-14**

Writing: (8-11 credits)

ENGL	121, 122	College Writing I, II	3, 3
ENGL	323	Writing for Engineers	3

(HONR 243, Honors Research Writing may be substituted for ENGL 323, Writing for Engineers by prearrangement with the Dean of Engineering. A student must satisfactorily complete a research paper on a topic selected by prearrangement with the Dean of Engineering and the Honors Writing instructor.)

Speech: (3-4 credits)

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

PHYSICAL EDUCATION **2-3**

The physical education requirements can be met by choosing 100-level activity courses (PEAC 107-195)

RELIGION **16-18**

(Six credits must be upper-division. Six credits must be RELB courses. See Religion General Studies section of this bulletin.)

HUMANITIES AND SOCIAL SCIENCES **10-15**
(One course, 3-4 credits, must be upper-division)

HUMANITIES (4-11)

Art:			
ART	251	Introduction to Art	4
ART	324, 325, 326	History of World Art	3, 3, 3
Communications:			
DRMA	363	History of Theatre	4
Literature:			
ENGL	204	Introduction to Literature	4
ENGL	210-212	Survey of English and American Literature	4, 4, 4
ENGL	214	Themes in Literature	4
ENGL	317	Pacific Northwest Writers	4
ENGL	344	Medieval Literature	4
ENGL	345	Renaissance Literature	4
ENGL	346	Seventeenth and Eighteenth-Century English Literature	4
ENGL	355	Victorian Literature	4
ENGL	356	Modern English Literature	4
ENGL	357	The African-American Experience	4
ENGL	358	Classical Literature	4
ENGL	359	World Literature	4
ENGL	364	Nineteenth-Century American Literature	4
ENGL	366	Modern American Literature	4
ENGL	445	Shakespeare	3
ENGL	454	Literature of The Bible	4
FILM	215	Introduction to Film Literature	4
FILM	312	Development of Film Literature	4
SPAN	370	Survey of Spanish Literature	4
SPAN	407	Survey of Spanish and Latino Literature	4
SPAN	408	Contemporary Spanish and 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	206	Introduction to Logic	4
PHIL	305	Moral Philosophy	4
PHIL	306	History of Philosophy I: Ancient	4
PHIL	307	History of Philosophy II: Medieval-Early Modern	4

PHIL	308	History of Philosophy III: 18th Century to the Present	4
PHIL	407	Philosophy of Science	4
PHIL	412	Philosophy of Religion	4

SOCIAL SCIENCES (4-11)

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	224	Human Development and The Family	4
SOCI	234	Current Social Problems	3
SOCI	236	Privilege and Oppression	4
SOCI	327	Social Problems Seminar	3
SOCI	345	Sociology of Communities	4
SOCI	449	Sociology of Religion	3
SOCI	455	Western Political and Social Theory	4

Business and Economics:

ECON	204	Fundamentals of Economics	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
MGMT	371	Principles of Management	4

Communications:

COMM	145	Mass Communication Media	4

Environmental Studies:

ENVI	151	Environmental Principles	4
ENVI	385	Environmental Stewardship	4

History and Political Science:

HIST	120-122	History of Western Civilization	4, 4, 4
HIST	221, 222	History of the United States	4, 4
HIST	242	Modern East Asian History	4
HIST	274, 275	History of England	4, 4
HIST	284	History of Latin America	4
HIST	335	History of World War II	4
HIST	435	History of Modern Germany	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
HIST	456	Medieval and Early Modern Christianity	4
HIST	468	Interwar Europe 1919- 1945	4
PLSC	224	American Government	4

APPROVED ELECTIVES			0-4
ACCT	201	Principles of Accounting	4
EDUC	210	Foundations of Education	3
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	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

ENGINEERING CORE REQUIREMENTS (47 TO 64 credits)

The engineering core consists of a group of studies that emphasize the enduring fundamentals common to the many branches of engineering and the applied sciences. These studies help ensure that the student will enjoy a truly professional career and be prepared to move into new or developing technical areas with confidence. Limited flexibility is provided within the core. However, this flexibility is affected by specific course requirements within each engineering concentration. Students are therefore cautioned to consult with their advisers before selecting these courses.

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.

In the following listings the symbols CE, CpE, EE, and ME indicate the core organization for the civil, computer, electrical, and mechanical engineering concentrations respectively. The letter (e) indicates that the marked course is a possible elective, the letter (r) indicates that the marked course is required for that concentration.

Functional Techniques			Credits	CE	CpE	EE	ME
CPTR	141	Introduction to Programming	4	r	r	r	r
CPTR	142	Data Structures, Algorithms and Objects	4	-	r	r	-
ENGR	121 - 123	Introduction to Engineering	6	r	r	r	r
ENGR	326	Engineering Economy	3	r	r	r	r
ENGR	495	Colloquium (3 qtrs. required)	0	r	r	r	r
ENGR	396, 496 497, 498	Junior and Senior Seminar	3	r	r	r	r
		Minimum Requirements		16	20	20	16

Electrical Fundamentals			**Credits**	**CE**	**CpE**	**EE**	**ME**
ENGR	228	Circuit Analysis	4	r	r	r	r
ENGR	325	Instrumentation	3	e	-	-	r
ENGR	351	Linear Network Analysis	4	e	r	r	r
ENGR	431	Electromechanical Energy Conversion	4	e	-	r	r
		Minimum Requirements		7	8	12	15

Engineering Mechanics			**Credits**	**CE**	**CpE**	**EE**	**ME**
ENGR	221 - 223	Engineering Mechanics	9	r	r	r	r
ENGR	321	Mechanics of Materials	4	r	-	-	r
		Minimum Requirements		13	9	9	13

Materials Science			**Credits**	**CE**	**CpE**	**EE**	**ME**
ENGR	312	Physical Electronics	3	-	r	r	-
ENGR	315	Physical Electronics Laboratory	1	-	r	r	-
ENGR	322	Engineering Materials	4	-	-	-	r
ENGR	323	Civil Engineering Materials	3	r	-	-	-
		Minimum Requirements		3	4	4	4

Transport Phenomena			**Credits**	**CE**	**CpE**	**EE**	**ME**
CHEM	352	Physical Chemistry	3	e	-	-	-
CHEM	355	Physical Chemistry Laboratory	1	e	-	-	-
ENGR	331	Fluid Mechanics	4	r	e	e	r
ENGR	332	Thermodynamics	4	e	e	r	r
ENGR	465	Heat Transfer	4	e	e	e	r
ENGR	468	Engineering Finite Element Methods	4	-	e	e	r
		Minimum Requirements		8	8	8	16
	Minimum Core Requirements			**47**	**49**	**53**	**64**

ENGINEERING MATH AND SCIENCE REQUIREMENTS

MATHEMATICS (27-31 credits)			**Credits**	**CE**	**CpE**	**EE**	**ME**
MATH	181, 281, 282, 283	Analytic Geometry and Calculus I,II,III,IV	16	r	r	r	r
MATH	250	Discrete Mathematics	4	-	r	-	-
MATH	289	Linear Algebra and Its Application	3	r	r	r	r
MATH	312	Ordinary Differential Equations	4	r	r	r	r
MATH	315	Probability and Statistics	4	r	r	r	r
	Minimum Math Requirements			**27**	**31**	**27**	**27**

SCIENCE (24 credits)			Credits	CE	CpE	EE	ME
CHEM	141- 143	General Chemistry	9	r	r	r	r
CHEM	144- 146	General Chemistry Laboratory	3	r	r	r	r
PHYS	251- 253	Principles of Physics	9	r	r	r	r
PHYS	254- 256	Principles of Physics Laboratory	3	r	r	r	r
	Minimum Science Requirements			24	24	24	24

MATHEMATICS/SCIENCE ELECTIVE (4 credits)

		Credits	CE	CpE	EE	ME
BIOL, CHEM, MATH, PHYS	Mathematics or Science Elective	4	r	-	r	r

Electives, approved by the School of Engineering, must be chosen in consultation with the academic adviser.

CIVIL ENGINEERING CONCENTRATION (53-54 credits)

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	364	Fluid Mechanics Laboratory	1
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
		Technical Electives*	6-7
			53-54

*A minimum of 2 courses must be chosen from civil engineering electives. The other may be chose1n from approved BIOL, CHEM, CPTR, ENGR, MATH or PHYS courses.

Electives, approved by the School of Engineering, must be chosen in consultation with the academic adviser.

COMPUTER ENGINEERING CONCENTRATION (52 credits)

CPTR	143	Data Structures and Algorithms	4
CPTR	215	Assembly Language Programming	3
CPTR	316	Programming Languages	3
CPTR	350	Computer Architecture	4
CPTR	352	Operating System Design	4
CPTR	425	Introduction to Networking and Computer I/O	4
CPTR	435	Software Engineering	4

ENGR	354	Digital Logic	3
ENGR	355	Embedded System Design	3
ENGR	356	Engineering Electronics	4
ENGR	433	Digital Design	4
ENGR, CPTR		EE and CS Electives	12
			52

Electives, approved by the School of Engineering, must be chosen in consultation with the academic adviser.

ELECTRICAL ENGINEERING CONCENTRATION (48 credits)

CPTR	215	Assembly Language Programming	3
ENGR	352	Feedback and Control Systems	4
ENGR	354	Digital Logic	3
ENGR	355	Embedded Systems Design	3
ENGR	356, 357	Engineering Electronics	8
ENGR	433	Digital Design	4
ENGR	451	Electromagnetic Fields	4
ENGR	455	Signals and Systems	4
ENGR		EE Electives	11
CPTR, ENGR MATH, PHYS		Technical Electives	4
			48

Electives, approved by the School of Engineering, must be chosen in consultation with the academic adviser.

MECHANICAL ENGINEERING CONCENTRATION (37 credits)

ENGR	324	Materials and Processes in Manufacturing	2
ENGR	333	Thermodynamics and Thermal Systems	4
ENGR	352	Feedback and Control Systems	4
ENGR	364	Fluid Mechanics Laboratory	1
ENGR	365	Machine Element Design Laboratory	1
ENGR	366	Vibrations	3
ENGR	461	Kinematics	4
ENGR	462	Machine Design	4
ENGR		ME Electives	8
CPTR, ENGR, MATH		Technical Electives	6
			37

Electives, approved by the School of Engineering, must be chosen in consultation with the academic adviser.

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 of this bulletin.

ENGINEERING COURSES (ENGR)

ENGR 121 INTRO 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 INTRO 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. ENGR 121 Recommended.

ENGR 123 INTRO 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.

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.

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: MATH 282. PHYS 252 strongly recommended.

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 312 PHYSICAL ELECTRONICS (OR PHYS 312) **3**

Study of the physical principles of solid state electronic devices, including photovoltaics. Prerequisites: MATH 283, PHYS 253; PHYS 310 strongly recommended. Corequisite: ENGR 315.

ENGR 315 PHYSICAL ELECTRONICS LABORATORY (OR PHYS 315) **1**

Experiments in crystal and semiconductor physics, measurement of fundamental physical constants. Corequisite: ENGR 312.

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.

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.

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.

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.

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.

ENGR 326 ENGINEERING ECONOMY **3**

Study of business, economic, and ethical aspects of engineering practice; financial planning in engineering decision making; tools for financial planning. Introduction to engineering organization and program management techniques. 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; turbomachinery. Prerequisites: ENGR 222, PHYS 251, 252, MATH 283, 289, 312 or permission of instructor.

ENGR 332 THERMODYNAMICS **4**

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. MATH 312 strongly recommended.

ENGR 333 THERMODYNAMICS AND THERMAL SYSTEMS **4**

Study of thermodynamics of state for complex systems, detailed analysis of power and reversed cycle systems, thermodynamics, and equilibrium principles of nonreacting and reacting mixtures; application of the principles of global thermochemical energy balances to real power systems; introduction to compressible flow. Prerequisite: ENGR 332. ENGR 331 strongly recommended.

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.

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. MATH 315 strongly recommended.

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; ENGR 331. ENGR 364; MATH 312, 315, ENGR 344 strongly recommended.

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. ENGR 344 strongly recommended. Corequisite: MATH 281.

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 351 LINEAR NETWORK ANALYSIS **4**

Introduction to linear network theory including Laplace-transform analysis and state-space representations. Fourier analysis of periodic signals. Prerequisites: ENGR 228; MATH 283. Corequisites: MATH 289 and 312.

ENGR 352 FEEDBACK AND CONTROL SYSTEMS **4**

Introduction to state-space analysis methods for continuous dynamic systems and processes; design of control systems including development of performance criteria, pole-placement design, and linear state observers. Classical analysis by means of frequency-domain methods such as root-locus diagrams and Bode plots. Prerequisite: ENGR 351.

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. Laboratory work required. (Course fees apply.)

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 215, 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 351. Corequisite for ENGR 357: ENGR 352.

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.

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. ENGR 374 strongly recommended.

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 351, 352; 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, toleranceing, design definition, software prototypes, design visualization, animation and interfacing to analysis codes. Prerequisite: Junior standing in engineering or permission of instructor.

ENGR 396 JUNIOR SEMINAR **0**

Presentation and discussion of project reports of those students who are completing the senior seminar sequence. Prerequisite: Junior standing in engineering. 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. Credit will not be allowed for both MATH 319 and ENGR 419. Offered odd years only.

ENGR 431 ELECTROMECHANICAL ENERGY CONVERSION **4**

Study of electromechanical energy conversion principles and their application to electrical machines. Topics include three-phase circuits, magnetic circuits, force and torque, transformers, AC and DC motors and generators; performance characteristics and applications. Laboratory work required. Prerequisite: ENGR 228.

ENGR 432 ANALOG SYSTEM DESIGN **4**

Advanced topics in analog design. An analog design project is selected and emphasis is on that project. Laboratory work required. Prerequisite: ENGR 357. Offered odd years only.

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.

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.

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 only.

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.

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.

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.

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.

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 343, 344.

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. ENGR 445 strongly recommended.

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 only.

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: MATH 312; PHYS 253.

ENGR 452 ELECTROMAGNETIC PROPAGATION AND RADIATION **4**

Study of the propagation of electromagnetic energy; plane waves, transmission lines, and scattering parameters; radiation from dipole antennas; introduction to arrays. Laboratory work required. Prerequisite: ENGR 451. Offered even years only.

ENGR 454 DIGITAL CONTROL SYSTEMS **4**

Study of the design and application of digital control methods to real-time dynamic systems such as servomechanisms, chemical processes, and vehicles. Analytical techniques include both transform (classical control) and state-space (modern control) methods. Prerequisite: ENGR 352. ENGR 455, MATH 315 strongly recommended. Offered even years only.

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 351; 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. MATH 315 strongly recommended.

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 352, ENGR 356. Offered odd years only.

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. ENGR 374 strongly recommended.

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 DESIGN4

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 352.

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 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 only.

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. Implementation of automated manufacturing systems with pneumatics, hydraulics, electric actuators, PLCs sensors, factory communications, and human/machine interfaces is emphasized. Scheduling, resource optimization, material handling, and quality management are discussed. Laboratory work required. Prerequisites: ENGR 324, ENGR 326, ENGR 352, and MATH 315.

ENGR 494 COOPERATIVE EDUCATION **0-2**

Individual contract arrangement involving students, faculty, and cooperating industries to gain practical engineering experience in an off-campus setting. Prerequisite: Permission of the Dean of the School of Engineering. Graded S or NC.

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.

ENGR 496, 497, 498 SENIOR SEMINAR **1, 1, 1**

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. Engineering career and professional issues are presented and discussed in ENGR 496. 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, ENGL 323, and ENGR 396.

ENGLISH

Kellie Bond, Chair; Terrie Aamodt, Beverly Beem, Ronald Jolliffe, Daniel Lamberton, Sylvia Nosworthy, LuAnn Venden.

In its general studies courses, the department aims to enhance the student's ability to use language, the vehicle of society. The writing courses give instruction in clear, effective writing. The literature courses address significant and enduring issues that lead to a broad understanding of human experience.

The major in English provides a foundation for careers in communications, community service, education, government, and journalism. The major is also a strong preparation for law, business, and medicine. Such 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.

The minor in English is a valuable way for students in any major to polish their writing skills or to enrich themselves through literature. It is especially useful to students who plan a career in teaching.

The minor in film studies provides an opportunity for students to develop cultural understanding, prepare to teach with film in secondary classrooms, and/or gain a foundation for film study in a graduate program.

ENGLISH MAJOR (Bachelor of Arts)
A student majoring in English must complete 58 hours of ENGL and WRIT courses, English cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. To be considered for candidacy as an English major, a student must satisfactorily complete the required pre-candidacy courses with a minimum grade of B- in each course (ENGL 121, 122, 223 or HONR 141, 142, 243; ENGL 210, 211, 212; ENGL 234) and demonstrate competency in grammar with a minimum score of 75% on the grammar placement test or with a grade of B- or higher in ENGL 184. No course may be repeated more than once in either the pre-candidacy or candidacy phases.

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, general and subject (English) sections.

English Major Core Requirements

ENGL	210, 211, 212	Survey of English and American Literature	12
ENGL	234	Literary Analysis	4

English literature before 1820 selected from the following courses: 7-8

ENGL	344	Medieval Literature	4
ENGL	345	Renaissance Literature	4
ENGL	346	Seventeenth- and Eighteenth-Century English Literature	4
ENGL	445	Shakespeare	3

Nineteenth-Century English and American literature selected from the following courses:				4
ENGL	355	Victorian Literature	4	
ENGL	364	Nineteenth-Century American Literature	4	
ENGL	384	Advanced English Grammars (also fulfilled with 12 hours of Latin or 9 hours of Greek)		3
ENGL	470	Literary and Critical Theory		4
ENGL	484	History of the English Language		
	or			3
ENGL	485	Linguistics		
ENGL	495	Colloquium (8 quarters)		0
		(1 during each of the freshman and sophomore years while in residence; 1 each quarter of the junior and senior years while in residence)		**37-38**

Standard English Major

WRIT	324-337	Writing	3
ENGL	496, 497	Seminar	3
		*Electives	14-15
			20-21

*Electives must be chosen from ENGL, WRIT, or up to 6 hours from FILM.

English Major with Writing Concentration

During the winter quarter of the junior year, students who wish to take the writing concentration must apply for admission by submitting a portfolio of their work to the chair of the English department. The portfolio should contain independent writing as well as selected work previously done for academic credit. Portfolio guidelines can be obtained in the English office. Eligibility for the concentration will be determined by a panel of faculty readers.

Portfolio and Oral Presentation: As the culminating experience in the writing concentration, students will take the writing seminar, in which they are guided in the preparation of their senior portfolio, a collection of fiction, poetry, and/or essays. A bound copy of the senior portfolio remains with the English department. Students will give a public reading during the last quarter.

Take two of the following writing theory courses:			6
WRIT	333	Poetics	
WRIT	337	Stylistics	
WRIT	389	Writing Theory	
Take two of the following creative writing courses:			6
WRIT	324	Creative Nonfiction Writing	
WRIT	334	Poetry Writing	
WRIT	335	Narrative Writing	
WRIT	336	Drama Writing	
WRIT	424-436	Directed Writing	1-2
WRIT	498, 499	Writing Seminar	3
			16-17

English Cognates and Certification Requirements

Cognates:

HIST	274, 275	History of England	
or			8
HONR	131, 132, 133	Western Thought	

Teacher Certification:

Students wishing teacher certification must take the following courses and fulfill certification requirements as listed by the School of Education and Psychology.

ENGL	358	Classical Literature	
or			4
ENGL	359	World Literature	
ENGL	374	Literature for Children	
or			3
ENGL	375	Literature for Young Adults	
ENGL	384	Advanced English Grammars	3
ENGL	395	Methods of Teaching Secondary English	3
FILM	416	Teaching with Film Literature	4
WRIT	389	Writing Theory	3

ENGLISH MINOR

Minors wishing language arts certification, see the Education Certification Officer at the School of Education.

ENGL	210, 211, 212	Survey of English and American Literature	12
ENGL	234	Literary Analysis	4
ENGL	344-368	English or American Literature	4
WRIT	324-337	Writing	3
		Electives (3 must be upper-division; 3 may be ENGL 374 or 375)	7
		Approval of English adviser required	
			30

FILM STUDIES MINOR

A student minoring in film studies must complete 30 quarter hours:

Core Requirements			
ENGL	234	Literary Analysis	4
FILM	215	Introduction to Film Literature	
	or		4
FILM	416	Teaching with Film Literature	
FILM	312	Development of Film Literature	4
FILM	318	Film Studies:	
	or		8
FILM	319	The American West in Document and Film	
FILM	415	Directed Film Study	2
WRIT	335	Narrative Writing	3
		*Electives	5
			30

*Electives may be chosen in consultation with the film adviser from the following:

ENGL	204	Introduction to Literature	4
ENGL	313	Image and Text	4
ENGL	360	Shakespeare at Ashland	2
ENGL/ DRMA	363	History of Theatre	4
ENGL	394	Directed Reading: Film Topics	1-2; 3*
FILM	438	Directed Writing about Film	1-2; 3*

*No more than 3 hours, combined, of Directed Reading: Film Topics and Directed Writing about Film will count toward the minor.

To fulfill the B.A. requirement of "a minor in an area distinct from the major," English majors who take a film studies minor must also complete another minor.

GENERAL STUDIES COLLEGE WRITING COURSES (ENGL)

ENGL 121 and 122 or HONR 141 and 142 are prerequisites to all *upper-division courses. For admission to upper-division courses, students (with the exception of engineering majors) must also have completed or be registered for ENGL 223 or HONR 243. For engineering majors, ENGL 323 is a prerequisite to all 400-level engineering courses. Credit will not be allowed for both ENGL 121 and HONR 141 or ENGL 122 and HONR 142 or for more than one of the following: ENGL 223, ENGL 323, or HONR 243.*

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 (or ENGL 323) 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 WRITING SKILLS **4**

Study of basic grammar, usage, and punctuation in the context of writing; emphasis on sentence and paragraph work. Short writing assignments required. Diagnostic test at the beginning with a competency-based exit exam at the end. Students must receive a grade of C- or higher before they can proceed to ENGL 121. Required of students who do not place in ENGL 121 or HONR 141. Corequisite: RDNG 100. 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 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 (or HONR 141 and HONR 142) with grades of C- or above and 36 hours of college credit. (Course fees apply.)

ENGL 323 WRITING FOR ENGINEERS **3**

Emphasizes the research and writing techniques appropriate to engineering. Includes a research paper and other papers for both professional and general audiences. Corequisite courses are designed by the School of Engineering. Prerequisites: ENGL 121 and ENGL 122 (or HONR 141 and HONR 142) with grades of C- or above. (Course fees apply.)

LITERATURE AND LANGUAGE COURSES (ENGL)

For all literature courses that are not general studies courses, ENGL 234 is a prerequisite.

ENGL 184 GRAMMAR AND STYLE **3**

The study of grammar specifically designed to prepare students for the practical application of grammar to such fields as writing, editing, translation, and language study. Will not apply toward an English major.

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 ENGLISH AND AMERICAN LITERATURE **4, 4, 4**

A survey of English and American literature and literary history from Anglo-Saxon times to the present. The first quarter covers Anglo-Saxon, medieval, and Renaissance literature; the second quarter, neoclassical and romantic literature; and the third quarter, 19th-century and 20th-century literature. Open only to English majors, minors, and humanities majors, or by permission of the instructor.

ENGL 214 THEMES IN LITERATURE **4**

Introduction to the study of literature in a basic literary theme or genre. Specific subjects to be studied vary from quarter to quarter; see Class Schedule. 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 approaches and methods of research in literary history; includes the writing of critical essays. Intended to prepare the student for upper-division literature courses. Prerequisite: ENGL 223, ENGL 323, or HONR 243.

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 only.)

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 only.

ENGL 344 MEDIEVAL LITERATURE **4**

Study of English literature from its origins to about 1500. Literature in Old and Middle English to be read in translation; Chaucer's works to be read in the original Middle English. Offered odd years only.

ENGL 345 RENAISSANCE LITERATURE **4**

Study of the major authors and literary movements of the English Renaissance. Offered even years only.

ENGL 346 SEVENTEENTH- AND EIGHTEENTH-CENTURY ENGLISH LITERATURE **4**

Study of prominent English writers of the Restoration, Enlightenment, and Romantic periods and their response to the intellectual, social, and historical developments of those eras. Offered even years only.

ENGL 355 VICTORIAN LITERATURE **4**

Study of representative works of major nineteenth-century British poets and prose writers from 1830 to 1870. Offered odd years only.

ENGL 356 MODERN ENGLISH LITERATURE **4**

Study of English literature from 1914 to 1965; significant works studied in relation to intellectual and historical developments. Offered odd years only.

ENGL 357 THE AFRICAN-AMERICAN EXPERIENCE **4**

Study of major contemporary African-American writers in their cultural and historical context. Credit will not be allowed for both ENGL 357 and HIST 357. Offered odd years only.

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. Offered even years only.

ENGL 359 WORLD LITERATURE **4**

Study of selected literary masterpieces, emphasizing works outside of the Anglo-American tradition. Prerequisite: general studies literature or ENGL 234. Offered odd years only.

ENGL 360 SHAKESPEARE AT ASHLAND **2**

Study of four Shakespeare plays (typically one tragedy, one or two comedies, and one history play). Students read the plays and write two-page essays on each beforehand and then attend lectures/discussions and performances of the plays at the Oregon Shakespeare Festival (Ashland, Ore.) in August. A paper is required, due in early September. Prerequisites: One of the following: ENGL 223, HONR 243, ENGL 323, or permission of instructor. Offered alternate summer quarters.

ENGL 363 HISTORY OF THEATRE (OR DRMA 363) **4**

Study of the history and development of the theater from the classical stage to the present. Offered even years only.

ENGL 364 NINETEENTH-CENTURY AMERICAN LITERATURE **4**

Study of prominent nineteenth-century American writers and their response to the intellectual, social, and historical developments of the period. Offered even years only.

ENGL 366 MODERN AMERICAN LITERATURE **4**

Study of American literature from 1900 to 1965; significant works studied in relation to intellectual and historical developments. Offered even years only.

ENGL 368 CONTEMPORARY LITERATURE **4**

Study of English and American literature since 1965; significant works studied in relation to intellectual and historical developments. Offered odd years only.

ENGL 384 ADVANCED ENGLISH GRAMMARS **3**

Study of traditional, structural, and transformational grammars; taught especially for prospective teachers and writers. Prerequisites: ENGL 121, 122, 223 or HONR 141, 142, 243; and ENGL 184 or a passing score on the grammar placement test.

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 445 SHAKESPEARE **3**

Advanced study of selected plays and poems of Shakespeare. Offered odd years only.

ENGL 454 LITERATURE OF THE BIBLE (OR RELB 454) **4**

Study of biblical poetry and prose from a literary perspective. Prerequisite: general studies literature or ENGL 234. Offered even years only.

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 from classical to postmodern, and representative theoreticians from those genres. Prerequisite: Students taking English Seminar must take ENGL 496 before ENGL 470 and ENGL 497. The three-quarter sequence must be completed in one academic year.

ENGL 484 HISTORY OF THE ENGLISH LANGUAGE **3**

Study of premodern and early modern English, with reference to Indo-European antecedents. Intended to illuminate major trends in English language history. Offered odd years only.

ENGL 485 LINGUISTICS **3**

Study of modern linguistic science, emphasizing sociolinguistic approaches to phonology, morphology, syntax, semantics, pragmatics, language development, and linguistic variation. Offered even years only.

ENGL 496, 497 SEMINAR **1, 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.

FILM COURSES (FILM)

For all film courses that are not general studies courses, ENGL 234 is a prerequisite.

FILM 215 INTRODUCTION TO FILM LITERATURE **4**

An introduction to the basic techniques of film expression leading to a study of film genres. Intended to broaden the student's critical appreciation of literature and to encourage responsible, mature criteria for judging 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 312 DEVELOPMENT OF FILM LITERATURE **4**

Survey of the development of film literature throughout the twentieth century, with emphasis on the relationships among technology, film techniques, and cultural history. Offered even years only. (Course fees apply.)

FILM 318 FILM STUDIES: **4; 8**

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 film makers' 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: FILM 215, FILM 312, or permission of instructor. (Course fees apply.)

FILM 319 THE AMERICAN WEST IN DOCUMENT AND FILM **4**

Study of selected films and documents with emphasis on Western American settlements, technologies, and ecologies. The course focuses on the West as an international symbol of freedom, oppression, hope, and exploitation. Prerequisite: FILM 215, FILM 312, or permission of instructor. Offered odd years only. (Course fees apply).

FILM 415 DIRECTED FILM STUDY **1-2; 3**

Directed study of film literature in a particular area by extensive viewing and analysis. Admission by permission of instructor. Will apply as an elective on the English major. Prerequisite: FILM 312.

FILM 438 DIRECTED WRITING ABOUT FILM **1-2; 3**

Refinement of analytical skills applied to film or auteurs chosen in consultation with the instructor. Limited enrollment. Admission by permission of instructor. Prerequisite: ENGL 234.

WRITING COURSES (WRIT)

For all writing courses that are not general studies courses, ENGL 234 is a prerequisite.

ENGL 327 RESEARCH AND WRITING IN RELIGION **3**

Study of research, analysis, and writing skills in religion, including the use of library resources; instruction in reading analytically, understanding audience, and writing papers for academic, professional, and general audiences. Prerequisite: ENGL 223.

WRIT 324 CREATIVE NONFICTION WRITING **3**

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 only.

WRIT 333 POETICS **3**

Introduces students to the fundamentals of prosody and poetics. Students read across 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. Offered odd years only.

WRIT 334 POETRY WRITING **3**

A writing course designed to study and apply the basic principles of poetics. Analysis and discussion of student work.

WRIT 335 NARRATIVE WRITING **3**

Study of narrative theory and practice in the techniques of narrative writing, including characterization, theme, and plot. Analysis and discussion of student work.

WRIT 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 only.

WRIT 337 STYLISTICS **3**

This course will examine 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. Offered even years only.

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. WRIT 333 recommended.

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 436 DIRECTED DRAMA WRITING **1-2; 3**

Refinement of drama writing skills through a writing project chosen in consultation with the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: WRIT 336 and a portfolio of dramas.

WRIT 498, 499 WRITING SEMINAR **1, 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.

ENGLISH EDUCATION COURSES (ENGL)

The following courses do not apply toward an English major.

ENGL 374 LITERATURE FOR CHILDREN **3**

Study of literature for children from early childhood through elementary school. Emphasizes literary and artistic quality and appeal to children. Requires extensive reading of children's books and writing of critical analysis. Will apply toward an English minor. Offered even years only.

ENGL 375 LITERATURE FOR YOUNG ADULTS **3**

Study of literature appropriate for junior high and high school students. Emphasizes literary and artistic quality as well as theory of response to literature. Requires extensive reading of literature for young adults and writing of critical analysis. Will apply toward an English minor. Offered odd years only.

ENGL 376 MULTICULTURAL LITERATURE FOR CHILDREN AND YOUNG ADULTS **4**

A study of literature portraying children and young adult minorities in both text and illustration. Includes preparation of materials for teaching elementary and secondary students. Will apply toward an English minor. Prerequisite: ENGL 374, 375, or permission of instructor. Offered summer quarter as needed.

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 375, 384, and WRIT 389. Will not apply toward an English minor.

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 365, or EDUC 360. Credit will not be allowed for both FILM 215 and FILM 416. Will not apply toward an English major. (Course fees apply.)

GENERAL COURSES (ENGL)

ENGL 494 COOPERATIVE EDUCATION **0-2**

Individual contract arrangement involving student, faculty, and a cooperating organization. Students will develop learning objectives with the employer and academic adviser. Weekly summaries of learning experiences will be submitted. Evaluations by the employer and academic adviser are made at the completion of the co-op experience. Permission of academic adviser required for enrollment. (Will not apply to the English major or minor.) Prerequisites: 32 quarter hours including either ENGL 121 and 122 or HONR 141 and 142.

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 during each of the freshman and sophomore years while a student is in residence, and one colloquium is required each quarter of the junior and senior years while a student is in residence. Graded S or NC.

HEALTH AND PHYSICAL EDUCATION

Marvin Denney, Chair; Curtis Kuhlman, Shirley Wilson-Anderson, Rodd Strobel, Tim Windemuth.

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. 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 contains three concentrations: Preparation for Teaching, Fitness Management, Physiological Basis, and Pre-Physical Therapy.

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	3
HLTH	427	Fitness Evaluation Techniques	3
HLTH	472	Stress Management	3
HLTH	496	Seminar	1
PETH	426	Physiology of Exercise	4

Select 12-16 hours from the following courses:			12-16
(4 hours must be upper division)			
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
BIOL	305	General Ecology	4
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	420	Sociobiology	3
BIOL	449	Vertebrate Histology	4
BIOL	464	Animal Physiology	4
BIOL	466	Immunology	4
CHEM	431, 432	Foundations of Biochemistry	8
CHEM	436	Biochemistry Laboratory	2
ENVI	385	Environmental Stewardship	4
		Electives (one class must be upper-division)	9-13
			54
Cognates			
BIOL	141, 142, 143	General Biology	12
	Select one of the following:		4
	BIOL 250	Biostatistics	
	MATH 206	Applied Statistics	
	GBUS 263	Business Statistics	
CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
	Select one of the following:		4-8
	MATH 117	Accelerated Precalculus	
	MATH 121+ 122	Precalculus Mathematics I, II	
	MATH 181	Analytic Geometry and Calculus I	
PSYC	130	General Psychology	4
PHYS	211, 212, 213 and	General Physics	9
PHYS	214, 215, 216 or	General Physics Laboratory	3
CHEM	321, 322, 323 and	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2

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	3
HLTH	372	Health Promotion Planning and Evaluation	3
HLTH	427	Fitness and Evaluation	3
HLTH	437	Community Nutrition	3
HLTH	471	Human Sexuality	3
HLTH	472	Stress Management	3
HLTH	475	Programs in Health Promotion	3
HLTH	481	Internship in Health Science	12
HLTH	496	Seminar	1
PETH	426	Physiology of Exercise	4
		*Electives	8
			69

*See electives for Health Science and Health Promotion Majors

Cognates:

BIOL	141, 142, 143	General Biology	
	or		12
BIOL	121, 122, 123	Anatomy and Physiology	
GBUS	370	Business Communication	4
MATH	206	Applied Statistics	4
MKTG	381	Principles of Marketing	
	or		4
MKTG	383	Principles of Advertising	
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SPCH	101	Fundamentals of Speech Communication	4

Electives for Health Science and Health Promotion Majors

Electives must be chosen from the following courses or any HLTH course. 4 hours must be upper division. Approval of health adviser required.

ANTH	225	Cultural Anthropology	4
ENVI	385	Environmental Stewardship	4
FINA	351	Financial Management	4
FINA	451	Investments	4
HLTH	328	Basic Therapy	2
MGMT	275	Management of Small Business	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	Child and Adolescent Development	4
PSYC	220	Educational Psychology	3
PSYC	344	Social Psychology	4
PSYC	464	Introduction to Counseling	4
SOCI	435	Social Gerontology	3
SOCI	437	Death and Dying	3
SOWK	224	Human Development and the Family	4
SOWK	477	Introduction to Alcoholism and Addiction Treatment	3

PHYSICAL EDUCATION MAJOR (Bachelor of Science)

A student majoring in physical education must complete the major core requirements, one concentration, the required cognates for that concentration, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students pursuing the concentration in preparation for teaching must also complete the secondary certification requirements as listed in the School of Education section of this bulletin.

PHYSICAL EDUCATION MAJOR 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	1
			26

PREPARATION FOR TEACHING CONCENTRATION

HLTH	110	Wellness for Living	3
HLTH	208	Drugs and Society	3
HLTH	217	First Aid	2
HLTH/PSYC	370	Health Psychology	3
PEAC	120-190	Physical Activity Courses *	4

* Select 4 activities classes. One from each of the following areas: Strength; Racquet Sports; Aquatics and Aerobics

PETH	150, 151, 152	Coaching Sports Activities:	6
PETH	250, 251, 252	Coaching Sports Activities:	6
PETH	261, 262	Officiating of Sports Activities	4
PETH	278	Programming Intramural and Recreational Activities	2
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	3
			42

Cognates:

BIOL	121, 122	Anatomy and Physiology	8
MATH	206	Applied Statistics	4

FITNESS MANAGEMENT CONCENTRATION

HLTH	370	Health Psychology	3
PEAC	107-177	*Physical Activity Courses	3

* Physical activity courses must be chosen in consultation with and approved by the academic adviser assigned by the department chair.

PEAC	123	Circuit Weight Training	1
PEAC	128	Jogging	1
PEAC	133	Aerobic Rhythm	1
PEAC	151	Racquetball	1
PETH	205	Water Safety Instructor's Course	2
PETH	252	Coaching Sports Activities:	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	3
			34

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

Cognates:

ACCT	201, 202	Principles of Accounting	7
BIOL	121, 122	Anatomy and Physiology	8
CIS	140	Computer Business Applications	4
CPTR	110	Principles of Computing	2
HLTH	110	Wellness for Living	3
HLTH	220	Human Nutrition	4
MGMT	275	Management of Small Business	4
MKTG	383	Principles of Advertising	4

PHYSIOLOGICAL BASIS CONCENTRATION

BIOL	121, 122	Anatomy and Physiology	8
BIOL	464	Animal Physiology	4
HLTH	220	Human Nutrition	4
PEAC	107-177	Physical Activity Courses	5

Physical activity classes must be chosen in consultation with and approved by the academic adviser assigned by the department chair.

PETH	427	Fitness Evaluation Techniques	3
		*Electives	3
			27

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

Cognates:

BIOL	141, 142, 143	General Biology	12
BIOL	392	Cell Biology	
or			4
CHEM	431	Foundations of Biochemistry	
BIOL	250	Biostatistics	4
CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
CPTR	110	Principles of Computing	2
HLTH	110	Wellness for Living	3
MATH	117	Accelerated Precalculus	
or			5-8
MATH	121, 122	Precalculus Mathematics I, II	

PRE-PHYSICAL THERAPY CONCENTRATION

A student completing the Pre-Physical Therapy concentration completes the senior year at an approved school of physical therapy. Completion of the degree is subject to the student's acceptance and matriculation into the program. (Students who do not enter a physical therapy professional school may readily complete the Fitness Management Concentration to this degree at WWU.) In order to receive a Walla Walla University degree a student must be in residence on the WWU campus for the three quarters preceding entry into the school of physical therapy. Completion of the WWU departmental comprehensive examination is also required.

HLTH	110	Wellness for Living	3
HLTH	220	Human Nutrition	4
HLTH	370	Health Psychology	3
NRSG	234	Medical Terminology	2
PEAC	107-190	Activity Courses	5
PETH	427	Fitness Evaluation Techniques	3
		Transfer credit from an affiliated physical therapy program	45
			65

Cognates:

BIOL	121, 122	Anatomy and Physiology	8
PHYS	211-216	General Physics (including laboratory)	
and			
CHEM	101, 102	Introductory Chemistry	
or			20
CHEM	141-146	General Chemistry (including laboratory)	
and			
PHYS	201-205	Conceptual Physics (including laboratory)	
CPTR	110	Principles of Computing	2
SPCH	101	Fundamentals of Speech Communication	4
MATH	206	Applied Statistics	4
MATH	117	Accelerated Precalculus	
or			5-8
MATH	121, 122	Precalculus Mathematics I, II	
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
SOCI	204	General Sociology	4

*Students will need to complete a WWU senior outline and request to have first-year PT transcripts sent to WWU.

The WWU religion general studies requirement is partially fulfilled by a religion course taken in the first year of the clinical program. In order to avoid course duplication, students are advised to avoid taking RELH 303. World Religions course at WWU.

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 also 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 (29 hours)

BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	101, 102	Introductory Chemistry	8
		College Mathematics Course (100 level or above)	4

Communication Skills (13 hours)

ENGL	121, 122	College Writing I, II	6
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
Social Sciences (12 hours)			
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
ANTH	225	Cultural Anthropology	4
Physical Education			
PEAC	107-190		2
HLTH	110	Wellness for Living	
	or		3-4
HLTH	220	Human Nutrition	
Religion			8
		Electives	12-13
			96

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 also apply to other professional programs. A cumulative grade point average of 3.0 or more is required before entering BS professional training.

Core Requirements:

ANTH	225	Cultural Anthropology	
	or		3-4
SOCI	236	Privilege and Oppression	
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	141, 142	General Chemistry	
	and		
CHEM	144, 145	General Chemistry Lab	8
	or		
CHEM	101, 102	Introductory Chemistry	
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	3
HLTH	205	Survey of Health	2
HLTH	208	Drugs and Society	3
HLTH	220	Human Nutrition	4
HLTH	437	Community Nutrition	
	or		3
HLTH	308	Community Health	
PEAC		Physical Education Activity Courses	2
PSYC	130	General Psychology	4

SOCI	204	General Sociology	4
SPCH	101	Fundamentals of Speech Communication	4
		Electives	8-11

General Studies Requirements

Humanities (Must be from 2 areas, may include foreign language)	12
Mathematics (MATH 105 or higher recommended)	
Religion (4 credits per year)	8
Social Sciences (Select from HIST 224, HIST 454, ANTH 225, PLSC 224.)	4-8
	98-106

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 also apply to other professional programs.

Core Requirements:

ANTH	225	Cultural Anthropology	4
BIOL	121, 122	Anatomy and Physiology	8
BIOL	222	Microbiology	5
CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Lab	3
	and		
PHYS	201, 202	Conceptual Physics	6
PHYS	204, 205	Conceptual Physics Lab	2
	or		
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Lab	3
	and		
CHEM	101, 102	Introductory Chemistry	8
HLTH	110	Wellness for Living	
	or		3-4
HLTH	220	Human Nutrition	
CPTR	110	Principles of Computing	2
MATH	206	Applied Statistics	4
NRSG	234	Medical Terminology	2
PETH	325	Kinesiology	4
PETH	426	Physiology of Exercise	4
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SOCI	224	Human Development and The Family	4
			68-69

Cognates:

ART	251	Introduction to Art	
	or		4
MUHL	124	Introduction to Music	
MATH	121, 122	Precalculus Mathematics I, II	
	or		5-8
MATH	117	Accelerated Precalculus	
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
PEAC		P.E. Activity Courses	2
REL		Religion General Studies Courses	12
SPCH	101	Fundamentals of Speech Communication	4
		Humanities (Select from at least three subject areas: fine arts, foreign language, literature, philosophy, or history. One course must be upper division.)	12
		Total	**48-50**
		Electives to 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 are required for application.

PRE-OCCUPATIONAL 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-Occupational Therapy. This degree will prepare the student for admission to the Bachelor of Science degree program in Occupational Therapy at Loma Linda University and may also apply to other professional programs. A cumulative grade point average of 3.20 or more is required before entering BS professional training.

Core Requirements:

ANTH	225	Cultural Anthropology	
	or		3-4
SOCI	236	Privilege and Oppression	
BIOL	121, 122, 123	Anatomy and Physiology	12
CHEM	101	Introductory Chemistry (including lab)	4
	or		
PHYS	201	Conceptual Physics	3
	and		
PHYS	204	Conceptual Physics Laboratory	1
HLTH	110	Wellness for Living	
	or		3-4
HLTH	220	Human Nutrition	
MATH	206	Applied Statistics	4
PSYC	130	General Psychology	4

PSYC	215	Child and Adolescent Development	4
SOCI	204	General Sociology	4
		Electives	17-19
			61

Cognates

ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
SPCH	101	Fundamentals of Speech Communication	4
		Humanities	12
		Select from at least three subject areas: fine arts, foreign language, literature, philosophy, or history.	
		Religion	8
		Physical Education	2
		Mathematics	
		High school algebra or geometry or equivalent with a grade of C or better.	

In addition to the above Loma Linda University requires: A documented minimum of 40 hours of volunteer or employee work experience in occupational therapy department before acceptance. Occupational Therapist Assistant Program also available at Loma Linda University.

ATHLETIC COACHING MINOR

A student minoring in athletic coaching must complete 30 quarter hours.

HLTH	217	First Aid	2
	Select three of the following coaching sports activities: PETH 150, 151, 152, 250, 251, 252		6
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	6
			30

*Electives must be chosen from PEAC and PETH courses and approved by the Physical Education adviser.

HEALTH MINOR

A student minoring in health must complete 30 quarter hours.

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)	12
			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 adviser required.

PHYSICAL EDUCATION MINOR

A student minoring in physical education must complete 30 quarter hours:

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
			30

HEALTH COURSES (HLTH)

HLTH 110 WELLNESS FOR LIVING 3

Survey course covering current health issues; emphasizes the promotion of personal well-being. (Course fees apply.)

HTLH 205 SURVEY OF HEALTH 2

Survey of the development of health. Includes secular, biblical and Seventh-day Adventist history and current topics.

HTLH 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. Prerequisite: BIOL 121, 121, 123 or permission of the instructor.

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 266 SAFETY EDUCATION 2

Study of safety at work, home, and school with emphasis on personal and community responsibility. Offered odd years only.

HLTH 110 or permission of instructor is a prerequisite to all upper division health science courses.

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 even years only.

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 141 or 121, BIOL 105. (Course fees apply.)

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 odd years only.

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 372 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 370; 315 or permission of instructor.

HLTH 427 FITNESS EVALUATION TECHNIQUES (OR PETH 427) **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.

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 only. (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 475 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 372.

HLTH 481 INTERNSHIP IN HEALTH SCIENCE **12**

Supervised field experience in an approved health care agency. Practical experience and application of responsibilities and competencies necessary for practicing health education. Prerequisites: HLTH 350, 427, 475; HLTH 217 or current certification in First Aid and CPR.

HLTH 494 COOPERATIVE EDUCATION **0-4**

Individual contract arrangement involving students, faculty and cooperating businesses, schools or agencies to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

HLTH 496 SEMINAR **1**

Presentation and discussion of current topics in Health and Physical Education. Prerequisite: Senior standing in Health or permission of instructor.

PHYSICAL ACTIVITY COURSES (PEAC)

PEAC 107-190 PHYSICAL ACTIVITY COURSES **1**

* PEAC 107 Lifeguard Training
PEAC 113 Beginning Swimming
PEAC 114 Intermediate Swimming
* PEAC 115 Wakeboarding / Water Activities
PEAC 120 Nautilus Training I
PEAC 121 Nautilus Training II
PEAC 122 Strength Training
PEAC 123 Circuit Weight Training
PEAC 127 Tumbling
PEAC 128 Jogging
PEAC 133 Aerobic Rhythm
§ PEAC 136 Ice Skating
PEAC 142 Badminton
* PEAC 144 Golf
PEAC 146 Tennis
PEAC 151 Racquetball
* PEAC 157 Backpacking
PEAC 159 Cycling
* PEAC 161 Rock Climbing
§ PEAC 164 Downhill Skiing / * Snowboarding
PEAC 171 Basketball
PEAC 173 Flagball
PEAC 174 Soccer
PEAC 175 Softball
PEAC 177 Volleyball
§ PEAC 182 Athletics: Golf
§ PEAC 183 Athletics: Soccer
§ PEAC 184 Athletics: Softball
§ PEAC 185 Athletics: Volleyball
§ PEAC 186 Athletics: Basketball
§ PEAC 190 Independent Activity

* Special fee required. See the Financial Bulletin.

§ Graded S or NC

PHYSICAL EDUCTION THEORY COURSES (PETH)

PETH 150, 151, 152 COACHING SPORTS ACTIVITIES: **2, 2, 2**

Study of materials, methods, strategies and teaching progressions for coaching various sports activities; Autumn, flagball; Winter, basketball; Spring, 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, 251, 252 COACHING SPORTS ACTIVITIES: 2, 2, 2

Study of materials, methods, strategies and teaching progressions for coaching various sports activities. Autumn, soccer; Winter, gymnastics; Spring, golf/tennis. Offered odd years.(Course fees apply for PETH 252).

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 (OR SPED 324) 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 only.

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 206.

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 323 or permission of instructor.

PETH 427 FITNESS EVALUATION TECHNIQUES (OR HLTH 427) **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.

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. Prerequisite: Senior standing or departmental approval.

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 only.

PETH 494 COOPERATIVE EDUCATION **0-4**

Individual contract arrangement involving students, faculty, and cooperating businesses, schools or agencies to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

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.

HISTORY AND PHILOSOPHY

Montgomery Buell, Chair; Terrie Aamodt, Gregory Dodds, Linda Emmerson, Terrell Gottschall.

The department offers a major in history as well as minors in history and philosophy. In fulfilling the mission of the University, the purpose of the work in history is fourfold: to promote a better understanding of the past and an appreciation of the present; to formulate a constructive philosophy of history; to train in skills of research and evaluation; to prepare students for teaching, graduate and professional schools, and government service. In keeping with this goal, the members of the department support the principle of personal professional development, particularly participation in research and civic responsibilities, as a means of enhancing both teaching and the historical profession.

The philosophy program encourages students to evaluate their personal philosophies within a Christian context. Course requirements provide a framework for students to develop critical thinking skills, to study major figures and schools in the history of philosophy, to draw connections between philosophy and other disciplines, and to analyze moral, spiritual, metaphysical, epistemological, and logical questions and issues. The minor in philosophy will enhance student preparation for graduate programs in the humanities and theology, and for professional programs in education, law, medicine, or government.

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. Senior students must complete a departmental comprehensive examination and are required to take the MFT in history.

Core Requirements:

HIST	121, 122	History of Western Civilization	8
		(HONR 131, 132, 133 will fulfill the Western Civilization requirement, but only 8 credits will apply to history. The other 4 credits are counted as literature.)	
HIST	221, 222	History of the United States	8
HIST	306	Classical Greece and Rome	4
HIST	495	Colloquium	0
		(Six quarters required; or number of quarters in residence at WWU, whichever is fewer.)	
		*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	2,2,1
			10

Cognate:

PHIL	204	Essentials of Critical Reasoning	4

HISTORY MINOR

A student minoring in history must complete 28 quarter hours:

HIST	120, 121, 122	History of Western Civilization (HONR 131, 132, and 133 fulfill the Western Civilization requirement, but only 8 credits will apply to history.)	8-12
HIST	221, 222	History of the United States	8
		*Electives (8 must be upper division)	8-12
			28

*Approval of history adviser required.

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)	20
			28

*Approval of philosophy adviser required.

Certification Requirements for History Major

TEACHER CERTIFICATION

Students wishing Washington State teacher certification in history must fulfill certification requirements listed by the School of Education and Psychology, complete a history major, and take the following courses:

HIST 446 Pacific Northwest History, HIST 395 Methods of Teaching Social Studies, GEOG 252 Physical Geography, and PLSC 224 American Government.

Please refer to the certification check sheet available from the School of Education and Psychology for additional information.

GEOGRAPHY COURSES (GEOG)

GEOG 252 PHYSICAL GEOGRAPHY 4

Study of the earth as a dynamic system of interrelated components. This course introduces all aspects of earth systems, identifying physical phenomena and stressing their distribution and relationships. It places special emphasis on human-environmental relationships.

HISTORY GENERAL COURSES (HIST)

HIST 120, 121, 122 HISTORY OF WESTERN CIVILIZATION 4, 4, 4

Survey of European history from antiquity to the present. The first quarter covers ancient history of the Near East to early medieval Europe in the eighth century AD; the second quarter, old Europe from Charlemagne to 1815; and the third quarter, modern Europe from 1815 to the present.

HIST 221, 222 HISTORY OF THE UNITED STATES 4, 4

Survey of 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 242 MODERN EAST ASIAN HISTORY 4

A study of East Asian History since 1800, with particular emphasis on China and Japan. Offered odd years only.

HIST 305 THE ANCIENT NEAR EAST 4

Survey of the history of the Ancient Near East. Considers economic and social life as well as political developments and environmental change. Offered even years only.

HIST 335 HISTORY OF WORLD WAR II 4

Study of the military, political, and diplomatic events from the late 1930s through 1945; covers both the European and the Pacific theaters. Will not satisfy general education history requirement. Offered even years only.

HIST 357 THE AFRICAN AMERICAN EXPERIENCE 4

Examines the roles of African-Americans in shaping American history and culture from the colonial period to the present. Prerequisite: HIST 221 or 222. Offered odd years only.

HIST 382 HISTORICAL BIOGRAPHY 4

Biographical and autobiographical studies of distinguished as well as lesser-known figures throughout history. Taught every year on a rotating basis throughout the department. 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: Eight hours of general studies history.

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. Offered odd years only.

HIST 494 COOPERATIVE EDUCATION 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. Prerequisite: Approval by department.

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.

HISTORY RESEARCH COURSES (HIST)

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 **3**

Survey of historians and historical writings from the development of the historical profession in the nineteenth century to the present.

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.

EUROPEAN HISTORY COURSES (HIST)

HIST 254 HISTORY OF CHRISTIANITY **4**

Survey of 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, 275 HISTORY OF ENGLAND **4, 4**

Development and expansion of the English nation from the earliest times to the present.

HIST 306 CLASSICAL GREECE AND ROME **4**

Survey of the history of classical Greece and Rome to AD 476 with particular emphasis on cultural and political history.

HIST 435 HISTORY OF MODERN GERMANY **4**

Survey of German history since 1870; diplomatic, political, socio-economic, and ideological developments in Imperial, Weimar, Nazi, and post-World War II Germany, with special emphasis on the German Question resulting from World War II. Prerequisite: HIST 121, 122, PHIL 204, or permission of instructor. Offered even years only.

HIST 437 MEDIEVAL AND RENAISSANCE EUROPE **4**

Study of the religious, political, social, intellectual, and artistic developments from Middle Ages through the Italian Renaissance. Prerequisite: HIST 121, PHIL 204, or permission of instructor. Offered odd years only.

HIST 438 FAITH AND CONFLICT IN REFORMATION ENGLAND **4**

Seminar examining the political and religious upheavals that accompanied the rise of the English Protestantism from the reign of Henry VIII through the English Civil War, 1500-1688. Prerequisite: PHIL 204. Offered even years only.

HIST 456 MEDIEVAL AND EARLY MODERN CHRISTIANITY (OR RELH 456) **4**

The history of Christianity from the Council of Chalcedon through the Enlightenment, with an emphasis on the Lutheran and Calvinist Reformations, 400-1776. Prerequisite: HIST 121 or RELH 455, or permission of instructor.

HIST 460 SCIENCE AND THE ENLIGHTENMENT **4**

A study of the science, art, learning and culture in Early Modern Europe, 1500 to the French Revolution. Prerequisite: HIST 121, PHIL 204, or permission of instructor. Offered odd years only.

HIST 466 AGE OF REVOLUTIONS **4**

Study of revolutionary Europe, including the French Revolution, Napoleonic Revolution, Revolution of 1830, and Revolution of 1848. Prerequisite: HIST 121, PHIL 204, or permission of instructor. Offered odd years only.

HIST 467 THE GREAT WAR 1890-1919 **4**

Study of Europe leading up to and including World War I against the backdrop of nineteenth century nationalism and imperialism. Prerequisite: HIST 121, 122, PHIL204, or permission of instructor. Offered even years only.

HIST 468 INTERWAR EUROPE, 1919-1945 **4**

Study of Europe during the period between the two world wars with particular focus on post-1919 peacekeeping, the rise of totalitarianism, and the causes and course of World War II. Prerequisites: HIST 122, PHIL 204, or permission of instructor. Offered odd years only.

HIST 480 POSTWAR EUROPE, 1945 TO THE PRESENT **4**

Study of Europe since World War II with particular focus on the Cold War, western European integration, and the rise and fall of the Soviet bloc. Prerequisites: HIST 122, PHIL 204, or permission of instructor.

AMERICAN HISTORY COURSES (HIST)

HIST 283 SPAIN AND LATIN AMERICA **4**

Study of medieval and early modern Spain with an emphasis on the exploration and conquest of the Americas. Traces the development of Spain's American colonies to their independence. Offered odd years only.

HIST 337 BASEBALL AND AMERICAN CULTURE **4**

Study of 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. Offered even years only. Prerequisites: One general studies history course. (Course fees apply.)

HIST 354 AMERICAN HISTORY AND VISUAL CULTURE **4**

Study of the relationships between historical events and visual representation, including media such as fine arts, prints, political cartoons, photography and film, from the Revolutionary period to the present. Prerequisite: HIST 221 or 222. Offered even years only.

HIST 359 THE AMERICAN ECONOMY (OR GBUS 359) 4

An examination of the 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 even years.

HIST 443 COLONIAL AND REVOLUTIONARY AMERICA 4

Study of the American colonies in their religious, social, and political contexts; examines the transition from colonial status to independence. Prerequisite: HIST 221, PHIL 204, or permission of instructor. Offered odd years only.

HIST 445 THE CIVIL WAR AND RECONSTRUCTION 4

Study of the sectional crisis, the war, and its impact on postwar political, economic, and social development. Prerequisite: HIST 221, 222, PHIL 204, or permission of instructor. Offered even years only.

HIST 446 HISTORY OF THE PACIFIC NORTHWEST 4

Study of the Pacific Northwest from the age of discovery to contemporary times.

HIST 448 THE EMERGENCE OF MODERN AMERICA 4

Examines the changes in America from the end of reconstruction through the Great Depression. The course covers such issues as the rise of industry, the growth of consumerism, immigration, imperialism, Populism, and Progressivism. Offered odd years only. Prerequisites: HIST 222, PHIL 204.

HIST 449 RECENT AMERICAN HISTORY 4

Examines the topics that shaped American society, politics, foreign policy, and culture from America's involvement in World War II to the present. The course covers such topics as World War II, the Cold War, and the Vietnam War as well as the social, cultural, and economic impact of those events. Prerequisites: HIST 222, PHIL 204. Offered even years only.

HIST 450 AMERICA OVERSEAS 4

Money, power, terrorism, natural resources, and American involvement in places such as Southeast Asia, the Middle East, and Afghanistan. Prerequisites: HIST 122, 222, PHIL 204 or permission of instructor.

HIST 458 AMERICAN INTELLECTUAL HISTORY 4

A survey of the major schools of thought in American intellectual history. These include: Puritanism, the Great Awakening, the Enlightenment, Transcendentalism, and Pragmatism, as well as contemporary issues in American thought. Prerequisite: PHIL 204. Offered even years only.

PHILOSOPHY COURSES (PHIL)

PHIL 204 ESSENTIALS OF CRITICAL REASONING 4

Study of concepts and procedures basic to effective critical thinking, and extensive practice with material drawn from a variety of disciplines. Prerequisite: ENGL 121, 122, or permission of instructor.

PHIL 205 INTRODUCTION TO PHILOSOPHY 4

Study of selected writings from classical and contemporary philosophy giving a broad introduction to the issues of concern to philosophers. Particular emphasis is given to the relevance of philosophical study to Christian life and critical reflection upon the student's own philosophical ideas.

PHIL 206 INTRODUCTION TO LOGIC **4**

Study of the nature of formal argumentation, inference and proof; includes practice in constructing logically sound arguments as well as analyzing those of others; some study of informal logical fallacies. Offered even years only.

PHIL 305 MORAL PHILOSOPHY **4**

An examination of the concepts of right and wrong, considering the major meta-ethical theories of relativism and absolutism. Relativist meta-theories include egoism and cultural relativism. Absolutist meta-theories include utilitarianism, virtue ethics, Kantian ethics, and appeals to moral authority. Prerequisites: PHIL 205 or permission of the instructor.

PHIL 306 HISTORY OF PHILOSOPHY I: ANCIENT **4**

An overview of ancient Western thought from the 6th century BC to the third century AD. Examines major philosophers and philosophical movements from the pre-Socratics through the Neoplatonists. Prerequisites: PHIL 205, or permission of instructor. Offered odd years only.

PHIL 307 HISTORY OF PHILOSOPHY II: MEDIEVAL-EARLY MODERN **4**

An overview of Western thought from the fourth to the 17th century. Examines major philosophers and philosophical movements from the medieval to the early modern period. Prerequisite: PHIL 205, or permission of instructor. Offered odd years only.

PHIL 308 HISTORY OF PHILOSOPHY III: 18TH CENTURY TO THE PRESENT **4**

An overview of Western thought from the 18th century to the present. Examines major philosophers and philosophical movements during this time period. Prerequisite: PHIL 205, or permission of instructor. Offered even years only.

PHIL 407 PHILOSOPHY OF SCIENCE **4**

An introduction to contemporary issues in the philosophy of science addressing questions such as: What is a scientific theory and what distinguishes science from pseudoscience? How are scientific theories formulated and tested? What is the relationship between theory and observation? What are the scope and limits of scientific knowledge and what is the relationship between science and religion?

PHIL 410 PHILOSOPHY OF EDUCATION (OR EDUC 410) **3**

See the Education section of this bulletin.

PHIL 412 PHILOSOPHY OF RELIGION (OR RELT 412) **4**

See the Theology section of this bulletin.

PHIL 496 SEMINAR **4**

In-depth study of specific areas of philosophical research. Prerequisite: PHIL 205.

POLITICAL SCIENCE COURSES (PLSC)

PLSC 224 AMERICAN GOVERNMENT **4**

Study of the principles, organization, and development of American national, state, and local government.

INTERDISCIPLINARY PROGRAMS

AUTOMOTIVE MANAGEMENT

JoAnn Wiggins (Business), Rob Holm (Technology), Academic Advisers.

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 118 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 graduations 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	466	Body Electronics and Computer Systems	3
AUTO	473	Alternative Fuels	3
AUTO	480	Advanced Practicum (automotive)	2
TECH	204	Fundamentals of Electronics	4
TECH	321	Technology and Society	4
TECH	499	Senior Project	1
		*Electives	6
			63

*Electives must be chosen from TECH, GRPH, PHTO, DRFT and/or AVIA in consultation with adviser.

Business Core Requirements:

ACCT	201, 203	Principles of Accounting	7
CIS	140	Computer Business Applications	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
FINA	351	Financial Management	4
GBUS	263	Business Statistics	4
GBUS	361	Business Law I	4
GBUS	366	Operations Management and Production	4
GBUS	370	Business Communication	4
MGMT	371	Principles of Management	4
MGMT	374	Human Resource Management I	4
MGMT	489	Strategic Management	4
MKTG	381	Principles of Marketing	4
			55
		Total Automotive and Business Core Requirements	118

Cognates:

MATH	121	Precalculus Mathematics I	4
PHYS	201, 202	Conceptual Physics	6
PHYS	204, 205	Conceptual Physics Laboratory	2
SPCH	101	Fundamentals of Speech Communication	4

AVIATION MANAGEMENT

JoAnn Wiggins (Business), Shawn Dietrich and Loury Duffy (Technology), Academic Advisers.

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 129 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.

Technology Core Requirements:

AVIA	124	History of Aviation	2
AVIA	141	Private Pilot Lectures	4
AVIA	142	Private Pilot Flight Training	3
AVIA	143	Advanced Private Flight Training	3
AVIA	152	Cross-Country Flight	2
AVIA	234	Meteorology	2
AVIA	256	Principles of Aircraft Maintenance	4
AVIA	261	Instrument Pilot Lectures	4
AVIA	262	Instrument Flight Training	3
AVIA	263	Advanced Instrument Flight Training	3

AVIA	270	Multi-Crew Flight Operations	2
AVIA	325	Flight Performance	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	356	Flight Instructor Training I	3
AVIA	455	Crew Resource Management	2
AVIA	496	Senior Seminar	2
TECH	204	Fundamentals of Electronics	4
TECH	380	Technical Space Utilization	3
TECH	499	Senior Project	1

Choose 11 credits from the following: 11

AVIA	280	Practicum	1-6
AVIA	358	Instructor Flight Training II	3
AVIA	458	Instrument Instructor Flight Training	3
AVIA	460	Multi-Engine Instructor Flight Training	2
AVIA	480	Advanced Practicum	1-6

75

Business Core Requirements:

ACCT	201, 202, 203	Principles of Accounting	10
CIS	140	Computer Business Applications	4
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
FINA	351	Financial Management	4
GBUS	263	Business Statistics	4
GBUS	361	Business Law I	4
GBUS	370	Business Communication	4
GBUS	463	Business Ethics	4
MGMT	371	Principles of Management	4
MGMT	489	Strategic Management	4
MKTG	381	Principles of Marketing	4
			54
		Total Technology and Business Core Requirements	**129**

Cognates:

MATH	121	Precalculus Mathematics I	4
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 Advisers.

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 92 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 Graduate Records Examination subject examination in Biochemistry, Cell and Molecular Biology (this is a single examination). Transfer credit accepted towards the biochemistry major must be from major's courses at the institution originating the credit.

Major Requirements:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	264	Chemical Equilibrium and Analysis	4
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
CHEM	352	Physical Chemistry	3
CHEM	355	Physical Chemistry Laboratory	1
CHEM	350	Physical Chemistry	3
and			
CHEM	354	Physical Chemistry Laboratory	1
or			
CHEM	353	Physical Chemistry	3
and			
CHEM	356	Physical Chemistry Laboratory	1
CHEM	431, 432, 433	Foundations of Biochemistry	10
CHEM	436	Biochemistry Laboratory	2
CHEM	496, 497, 498	Chemistry Seminar	3
BIOL	141, 142, 143	General Biology	12
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	430	Molecular Biology Techniques	
or			4
BIOL	445	Advanced Microbiology	
BIOL	211	Introduction to Biological Research I	2
BIOL	416	Research in Biology	
or			2
CHEM	479	Directed Research/Project	
		Electives (selected from the following list)	12
			92

Electives:

CHEM	265	Analytical Instrumental Methods I	4
CHEM	353, 356	Physical Chemistry and Laboratory	
or			4
CHEM	350, 356	Physical Chemistry and Laboratory	
CHEM	427	Organic Structure and Mechanisms	3
CHEM	442	Inorganic Chemistry	4

CHEM	461	Analytical Instrumental Methods II	4
BIOL	430	Molecular Biology Techniques	
or			4
BIOL	445	Advanced Microbiology	
BIOL	435	Developmental Biology	4
BIOL	464	Animal Physiology	4
BIOL	466	Immunology	4
BIOL	416	Research in Biology	
or			1-4
CHEM	479	Directed Research/Project	

Cognates:

BIOL	250	Biostatistics	
or			4
MATH	206	Applied Statistics	
MATH	181, 281	Analytic Geometry and Calculus I, II	8
PHYS	211, 212, 213	General Physics	
and			
PHYS	214, 215, 216	General Physics Lab	
or			12
PHYS	251, 252, 253	Principles of Physics	
and			
PHYS	254, 255, 256	Principles of Physics Lab	
			24

BIOENGINEERING

Larry Aamodt, Director; Jon Cole, Robert Cushman, 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 adviser 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 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. ENGL 323 Writing for Engineers, which is normally taken concurrently with third-year engineering courses, is required in place of ENGL 223 Research Writing (the third quarter of the college-writing sequence). A course in speech communication is highly recommended. All majors must take the Graduate Record Examination general section.

BIOENGINEERING MAJOR (Bachelor of Science)

Major Requirements:

Core Subjects			**40-43**
BIOL	141, 142, 143	General Biology	12
CPTR	141	Introduction to Programming	4
ENGR	221, 222, 223	Engineering Mechanics	9
ENGR	228	Circuit Analysis	4
BIOL	392	Cell Biology	4
BIOL	495	*Colloquium (2-4 Quarters)	0
ENGR	495	*Colloquium (2-4 Quarters)	0
ENGR	396, 496-498	Seminar	3
or			
BIOL	211	Introduction to Biological Research I	
and			
BIOL	296	Current Topics in Biology	
and			
BIOL	316	Introduction to Biological Research II	6
and either			
BIOL	416	Research in Biology	
or			
ENGR	497, 498	Seminar	
Core Elective (*Choose one of the following courses*)			4
	CPTR 142	Data Structures, Algorithms and Objects	
	ENGR 321	Mechanics of Materials	
	ENGR 351	Linear Network Analysis	
	ENGR 331	Fluid Mechanics	
Bioengineering Electives			**8-13**
BIOL	393	Genetics	4
BIOL	464	Animal Physiology	4
BIOL	470	Biophysics	4
CHEM	350, 354	Physical Chemistry and Laboratory	
or			4
PHYS	310, 314	Modern Physics I and Laboratory	
CHEM	352, 355	Physical Chemistry and Laboratory	
or			4
PHYS	313	Thermodynamics	
CHEM	431	Foundations of Biochemistry	4
CPTR	215	Assembly Language Programming	3
ENGR	321	Mechanics of Materials	4
ENGR	322	Engineering Materials	4
ENGR	325	Instrumentation	3
ENGR	331, 364	Fluid Mechanics and Laboratory	5
ENGR	332	Thermodynamics	4
ENGR	351	Linear Network Analysis	4
ENGR	354	Digital Logic	3

ENGR	465	Heat Transfer	4
PHYS	312, 315	Physical Electronics and Laboratory	4
Electives (17 must be upper-division)			**17-25**
BIOL		Selected Courses	8-17
ENGR		Selected Courses	8-17
		Technical Electives	0-9
		Selected courses from MATH, PHYS, CHEM, CPTR, ENVI	
			73

Electives must be approved by the Bioengineering Committee after consideration of the total student program.

*Six quarters of Colloquium are required.

Cognates:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322	*Organic Chemistry	8
CHEM	325	Introduction to Organic Laboratory	1
MATH	181, 281	Analytic Geometry and Calculus I, II	8
MATH	282, 283	Analytic Geometry and Calculus III, IV	8
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), Robert Cushman (Biology), Academic Advisers.

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.

Major Requirements:

BIOL	141, 142, 143	General Biology	12
BIOL	211	Introduction to Biological Research I	2
BIOL	392	Cell Biology	4
BIOL	393	Genetics	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 Lab	1
PHYS	414	Experimental Physics I	1
PHYS	417	Physics Seminar	2
PHYS	470	Biophysics	4
PHYS		Upper Division Electives in Physics	3
			68

*Required each quarter of juniors and seniors while in residence.

Cognate Requirements

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322, 323	Organic Chemistry and Laboratory	11
CHEM	325, 326	Introduction to Organic Laboratory	2
CHEM	431, 432	Foundations of Biochemistry	8
CPTR	141	Introduction to Programming	4
MATH	181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH	312	Ordinary Differential Equations	4
MATH	315	Probability and Statistics	
or			4
BIOL	250	Biostatistics	
			61

NATURAL RESOURCES CONSERVATION AND MANAGEMENT

Montgomery Buell, Director; David Cowles, Bob Cushman (Biology), Ron Jolliffe (English), Dan Lamberton (Humanities), Steven Lee (Chemistry), Fred Liebrand (Physics), Dave Thomas (Religion), Melodie Selby (Engineering).

The interdisciplinary Natural Resources Conservation and Management program seeks to develop an appreciation of the physical world and human impact upon it. Graduates will demonstrate understanding and techniques of caring for components of our biosphere in the context of the societies in which we live and actively contribute to a more sustainable, livable world through research and planning. The Environmental Science major provides direct access to career opportunities in the private or public sector or gives the basis for further education. Although a second major, graduate school or professional school may be appropriate, the major and minor prepare students for careers in air, water and land resource management,

environmental economics, law or journalism, public policy, environmental science, or other sciences.

Students planning to seek employment following graduation are urged to accept a co-op or internship experience. Those planning to attend graduate school prior to seeking employment are encouraged to accept such an experience. All majors must take the Graduate Record Examination general section.

ENVIRONMENTAL SCIENCE MAJOR (Bachelor of Science)

A student majoring in environmental science must complete 57 quarter credits in the core, 52 credits in the cognates and 35 to 42 approved credits in an elective emphasis and emphasis cognates, the general studies program and all baccalaureate degree requirements outlined in this bulletin. Course listings are available for pre-approved elective emphases in:

- The Air Environment
- Biology/Ecology
- Chemistry
- Human Environmental Science
- Light and Radiation
- The Water Environment
- Wildlife/Ecology

Alternative elective emphasis proposals should be worked out with an assigned adviser and receive approval of the Natural Resources Committee.

Core Requirements:

BIOL	141,142,143	General Biology	12
BIOL	106	Contemporary Biology	
or			4
BIOL	305	General Ecology	
BIOL	211	Introduction to Biological Research I	2
CHEM	141,142,143	General Chemistry	9
CHEM	144,145,146	General Chemistry Laboratory	3
ENVI	151	Environmental Principles	4
ENVI	385	Environmental Stewardship	4
ENVI	386	Environmental Management	4
ENVI	479	Environmental Research/Project	2, 2
ENVI	495	Colloquium (6 quarters required)	0
ENVI	497,498	Environmental Seminar	1, 2
ECON	212	Principles of Microeconomics	4
PLSC	224	American Government	4
			57

Elective Emphasis and Emphasis Cognates: 35-42

(See program director for details for elective emphases.)

Cognates:

ART	251	Introduction to Art	
or			4
ENGL	313	Image and Text	
BIOL	250	***Biostatistics	4
CPTR	141	Introduction to Programming	4

MATH	181,281	*Analytical Geometry and Calculus I, II	
or			
MATH	123	*+Survey of Calculus	8
and			
PHIL	204	*Essentials of Critical Reasoning	
HIST	121,122	History of Western Civilization	
or			8
HONR	131,132,133	Western Thought	
PHYS	211,212,213	**General Physics	9
PHYS	214,215,216	**General Physics Lab	3
SPCH	101	Fundamentals of Speech Communication	4

Choose one of the following courses: 4

	SOCI 204	General Sociology
	PSYC 130	General Psychology
	PSYC 344	Social Psychology

Choose one of the following courses: 4

	ENGL 317	Pacific Northwest Writers
	RELT 348	Christian Ethics

52

*Highly recommended. Some elective emphases require a greater mathematical background including MATH 181 and 281. A complete sequence of calculus (MATH 181, 281, 282, 283) is valuable for all.

**Principles of Physics is required in some elective emphases.

***MATH 315, Probability and Statistics is alternatively required in some elective emphases.

+In some instances committee approval may be given for alternative electives.

ENVIRONMENTAL STUDIES MAJOR (Bachelor of Arts)

A student majoring in environmental studies must complete 48 quarter credits in the core, 24 approved credits in a concentration, 28 credits in the cognates, a minor, the general studies program, and all baccalaureate degree requirements outlined in this bulletin. Course listings are available for pre-approved concentrations in:

- Business and Industry
- Human Thought and Culture
- Communication

Alternative concentration proposals should be worked out with an assigned adviser and receive approval of the Natural Resources Committee.

Core Requirements:

ENGL	317	Pacific Northwest Writers	
	or		4
HIST	446	History of the Pacific Northwest	
ENVI	151	Environmental Principles	4
ENVI	385	Environmental Stewardship	4
ENVI	386	Environmental Management	4
ENVI	479	Environmental Research/Project	2,2
ENVI	495	Colloquium (3 total)	0

ENVI	497, 498	Environmental Seminar	1,2
BIOL	141, 142, 143	General Biology	4, 4 ,4
BIOL	305	General Ecology	4
ENGL	394	Directed Reading: Nature Writing	2
PHIL	204	Essentials of Critical Reasoning	4
PLSC	224	American Government	4
			49

Cognates:

ECON	211	Principles of Macroeconomics	4
WRIT/JOUR		An approved advanced writing course	4
RELT	348	Christian Ethics	4
Select 12 science credits from the following (note prerequisites):			12
CHEM	141, 142, 143	General Chemistry	3,3,3
CHEM	144, 145, 146	General Chemistry Laboratory	1,1,1
PHYS	211, 212, 213	General Physics	3,3,3
PHYS	214, 215, 216	General Physics Laboratory	1,1,1
Select one of the following:			4
BIOL	250	Biostatistics	
MATH	206	Applied Statistics	
			28

Business and Industry Concentration

ECON	212	Principles of Microeconomics	4
MGMT	371	Principles of Management	4
MKTG	384	Consumer Behavior	4
Select 12 credits from the following:			12
ACCT	201 and	Principles of Accounting	4
FINA	351	Financial Management	4
ENGR	123	Intro to System Design and Engineering	2
ENGR	326	Engineering Economy	3
GBUS	370	Business Communication	4
GRPH	124	Introduction to Graphics	3
MKTG	381	Principles of Marketing	4
MKTG	481	Public Relations	4
TECH	321	Technology and Society	4
			24

Human Thought and Culture Concentration

ENGL	346	Seventeenth- and Eighteenth-Century English Literature	4
HIST	460	Science and the Enlightenment	4
PHIL	496	Seminar: Environmental Ethics	4
Select 12 credits from the following:			12
ENGL	317 or	Pacific Northwest Writers	4
HIST	446	History of the Pacific Northwest	

ENGL	358	Classical Literature	4
ENGL	359	World Literature	4
ENGL	394	Directed Reading: Nature Writing	1
FILM	416	Teaching With Film Literature	4
HIST	354	American History and Visual Culture	4
HIST	359	The American Economy	4
HIST	448	The Emergence of Modern America	4
PHIL	305	Moral Philosophy	4
			24

Communication Concentration

COMM	145	Mass Communication Media	4
COMM	357	Communication Law and Ethics	4
JOUR	245	Media Writing	4
Select 12 credits from the following:			12
COMM	235	Introduction to Video	4
ENGL	234	Literary Analysis	4
JOUR	257	Introduction to Photojournalism (note prerequisites)	3
JOUR	341	Magazine Article Writing	4
JOUR	345	Specialized Writing	3
JOUR	348	Creativity and Communication	3
JOUR	412	Script Writing	3
PREL	350	Writing for Public Information	3
WRIT	324	Creative Nonfiction Writing	3
WRIT	335	Narrative Writing	3
WRIT	336	Drama Writing	3
WRIT	337	Stylistics	3
WRIT	424	Directed Creative Nonfiction Writing	1-2
			24

ENVIRONMENTAL STUDIES MINOR

A student minoring in environmental studies must complete 30 quarter credits:

BIOL	106	*Contemporary Biology	4
ECON	212	Principles of Microeconomics	4
ENVI	151	Environmental Principles	4
ENVI	385	Environmental Stewardship	4
ENVI	386	Environmental Management	4
ENVI	495	Colloquium (two quarters required)	0, 0
ENVI	496,497	Environmental Seminar	1, 1
PLSC	224	American Government	4
		Electives (approved from BIOL, CHEM, ENGR, MATH or PHYS)	4
			30

*Prerequisite for BIOL 106 is BIOL 141 or BIOL 105. BIOL 105 and BIOL 106 or BIOL 141 and BIOL 106 will satisfy the Natural Science laboratory requirement for General Studies.

ENVIRONMENTAL STUDIES COURSES (ENVI)

ENVI 151 ENVIRONMENTAL PRINCIPLES **4**

Consideration of resource, pollution and environmental quality issues through application of chemical, physical and geological principles: renewable and non-renewable resources; air, water and land pollution; human population demographics and impact; climate change, energy options, and hazardous materials. Includes at least one field trip. Prerequisite: BIOL106 recommended.

ENVI 385 ENVIRONMENTAL STEWARDSHIP **4**

An interdisciplinary consideration of environmental problems and issues: resources and pollution, energy, population dynamics, quality of life; solutions: scientific, technological, economic, social/political, ethical.

ENVI 386 ENVIRONMENTAL MANAGEMENT **4**

Limiting environmental degradation through environmental policy and economics; assessing impacts of resource depletion, population growth, non-market ecosystem values, environmental policy, trade; emphasis on local, state, federal and international environmental regulations and policy. Prerequisites: ENVI 151, 385, ECON 211 or 212, PLSC 224.

ENVI 479 ENVIRONMENTAL RESEARCH/PROJECT **2**

Each major must complete a project during the senior year.

ENVI 495 COLLOQUIUM **0**

Lectures on current environmental topics. Minors must complete two quarters. Majors must complete six quarters. Graded S or NC.

ENVI 496, 497, 498 ENVIRONMENTAL SEMINAR **1, 1, 2**

Group projects by majors and minors; oral and written presentations of results.

HUMANITIES

Dan Lamberton, Director; Thomas Emmerson (Art), David Crawford (Drama), Nancy Cross (English), Montgomery Buell (History), Jean-Paul Grimaud (Communications and Languages), Karin Thompson (Music), Linda Emmerson (Philosophy), Dave Thomas (Theology).

The humanities major is an interdisciplinary program designed for those who want to study the themes and values of the humanities-in history, the visual arts, music, philosophy, religion, and literature-and who wish to tailor their major to meet their interests. It provides a choice of content areas for those interested in teaching. The humanities major also is excellent for preprofessional students, especially those planning to study business, medicine, or law. All humanities majors are required to take the GRE (general section). The first test is paid for by the student's department of concentration.

HUMANITIES MAJOR (Bachelor of Arts)

A student majoring in humanities must complete the major core requirements, one concentration which must be chosen in consultation with the humanities adviser and the chair of the specific area, the general studies program including the general studies requirements below, and all baccalaureate degree requirements as outlined in this bulletin. Any course taken to satisfy core and/or concentration requirements cannot also be counted as satisfying general studies requirements, except as noted. ***Honors students, however, will satisfy the requirements of the Honors Program.***

HUMANITIES MAJOR CORE REQUIREMENTS:

ART	251	Introduction to Art	4
BIOL	141,142,143	General Biology	12
ENGL	234	Literary Analysis	4
HIST	120, 121, 122	History of Western Civilization	8
PHIL	205	Introduction to Philosophy	4
ANTH	225	Cultural Anthropology	
or			4
HIST	382	Historical Biography	
RELH	303	World Religions	
or			3-4
RELT/ PHIL	412	Philosophy of Religion	
MUHL	134	World Music	
or			4
MUHL	310,311	Survey of Music History	
ENGL, FREN, SPAN		Upper-division Literature	4
WRIT	333	Poetics	
or			3
WRIT	337	Stylistics	
PSYC	344	Social Psychology	
or			4
PSYC	366	Theories of Personality	
ENGL	359	World Literature	
or			4
ENGL	358	Classical Literature	
ENVI	385	Environmental Stewardship	
or			4
PHIL	407	Philosophy of Science	
HIST	458	American Intellectual History	4
HMNT	496,497	Seminar	3
			69-70

ENGLISH CONCENTRATION (HUMANITIES)

ENGL	358	Classical Literature	4
WRIT	324-336	Upper-division writing	3
ENGL		Upper-division literature	11
ENGL	470	Literary and Critical Theory	4
			22

FINE ARTS CONCENTRATION (HUMANITIES)

ART	324, 325, 326	History of World Art	9
MUHL	311, 312	Survey of Music History	8
FILM	312	Development of Film Literature	
or			4
DRMA	363	History of Theatre	
			21

HISTORY CONCENTRATION (HUMANITIES)

(Twelve quarter hours must be upper-division)

HIST	221, 222	History of the United States	8
HIST	392	Historiography	4

Choose two of the following courses:

HIST	306	Classical Greece and Rome	4
HIST	460	Science and The Enlightenment	4
HIST	466	Age of Revolutions	4
			24

LANGUAGES CONCENTRATION (HUMANITIES)

(Requires one full academic year in a study abroad program. Must be approved by Communications and Languages Department.)

French Studies:

FREN	370	Survey of French Literature	4
FREN	405	French Stylistics and Rhetoric	4
FREN	407	Survey of French and Francophone Literature	4
FREN	408	Contemporary French and Francophone Literature	4
LANG	406	Francophone Culture and Civilization	4
			20

OR

Spanish Studies:

LANG	406	Francophone Culture and Civilization	4
SPAN	370	Survey of Spanish Literature	4
SPAN	405	Spanish Stylistics and Rhetoric	4
SPAN	407	Survey of Spanish and Latino Literature	4
SPAN	408	Contemporary Spanish and Latino Literature	4
			20

PHILOSOPHY CONCENTRATION (HUMANITIES)

PHIL	204	Essential of Critical Reasoning	
or			4
PHIL	206	Introduction to Logic	
PHIL	306	History of Philosophy I: Ancient	4
PHIL	307	History of Philosophy II: Medieval-Early Modern	4

PHIL	308	History of Philosophy III: 18th Century to the Present	4
PHIL	496	Seminar	4
			20

RELIGIOUS STUDIES CONCENTRATION (HUMANITIES)

Humanities majors taking the Religious Studies Concentration must take RELH 303, World Religions, in the core requirements. Choose one class from each of the following categories plus additional classes to obtain a total of 20 credits for the concentration.

Textual Studies:			
RELB	321	Interpreting the Bible	4
RELB	454	Literature of the Bible	4
RELH	469	Advanced Studies	
RELT	469	Advanced Studies	
History:			
HIST	456	Medieval and Early Modern Christianity	4
RELH	205	Biblical Archaeology	4
RELH	455	Early Church History	3
Philosophy:			
RELT/PHIL	412	Philosophy of Religion	4
PHIL	305	Moral Philosophy	4
RELT	342	Issues of God and Faith	4
RELT	348	Christian Ethics	4
Sociology/Psychology:			
HONR	349	Religion in a Social Context	4
RELH/PSYC	425	Psychology of Religion	4
SOCI	449	Sociology of Religion	2
			20

HUMANITIES COURSES (HMNT)

HMNT 496, 497 SEMINAR **1, 2**

Study of interdisciplinary topics in humanities; includes group conferences and written and oral reports. The seminar concludes with a final paper and public presentation.

INFORMATION SYSTEMS

James Klein (Computer Science), JoAnn Wiggins (Business), Academic Advisers.

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 are required to take the MFT exams in both Business and Computer Science.

Core Requirements:

Information Systems

CIS	301	Management Information Systems	4
CPTR	141	Introduction to Programming	4
CPTR	142	Data Structures, Algorithms, and Objects	4
CPTR	215	Assembly Language Programming	3
CPTR	235	Web Application Development	4
CPTR	301	Java and Object-Oriented System Design	4
CPTR	352	Operating System Design	4
CPTR	415	Introduction to Database Systems	4
CPTR	425	Introduction to Networking and Computer I/O	4
CPTR	435	Software Engineering	4
CPTR	495	Colloquium (6 quarters required or number of quarters in residence at WWU, whichever is less)	0
CPTR	494	*Cooperative Education (three or more)	0
CPTR	496, 497, 498	Seminar	3

*Cooperative education must be in the areas of electronic business strategy, architecture and design; information systems theory and practice; physical design and implementation in emerging environments; project management and practice.

Business Fundamentals

ACCT	201, 202, 203	Principles of Accounting	10
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
FINA	351	Financial Management	4
GBUS	361	Business Law I	4
GBUS	366	Operations Management and Production	4
GBUS	370	Business Communication	4
GBUS	463	Business Ethics	4
MGMT	371	Principles of Management	4
MGMT	489	Strategic Management	4
MKTG	381	Principles of Marketing	4
			92

Cognates:

MATH	123	Survey of Calculus*	
or			4-8
MATH	181, 281	Analytic Geometry and Calculus I, II*	
MATH	250	Discrete Mathematics	4
PHIL	204	Essentials of Critical Reasoning	4
PHIL	205	Introduction to Philosophy	4
PSYC	130	General Psychology	
or			4
PSYC	140	Introduction to Psychology: Social Foundations	
SPCH	101	Fundamentals of Speech Communication	4

*Prerequisites Required

Mathematics - select from the following courses: 4

MATH	206	Applied Statistics
MATH	315	Probability and Statistics

Science - select from the following courses: 12

ASTR	141-144	Astronomy
BIOL	141-143	General Biology
CHEM	141-146	General Chemistry
PHYS	211-216	General Physics
PHYS	251-256	Principles of Physics

Communication - select from the following courses: 3-4

SPCH	207	Small Group Communication
SPCH	310	Interpersonal and Nonverbal Communication

Recommended Courses:

CIS	140	Computer Business Applications	4
JOUR	348	Creativity and Communication	3
RELH	303	World Religions	3
HIST		Non - U.S. History	4-8
LANG		Foreign Language	0-12

INFORMATION SYSTEMS MINOR

CIS	140	Computer Business Applications	4
CIS	301	Management Information Systems	4
CPTR	141	Introduction to Programming	4
CPTR	235	Web Application Development	4
CPTR	415	Introduction to Database Systems	4
CPTR	435	Software Engineering	4
		*Electives (CPTR and INFO)	6
			30

*Electives must be approved by the School of Business/Computer Science Department Adviser.

MATHEMATICS

Kenneth Wiggins, Chair; Jonathan Duncan, Heidi Haynal, Thomas Thompson, Timothy Tiffin.

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 46 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	181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH	289	Linear Algebra and Its Applications	3
MATH	312	Ordinary Differential Equations	4
MATH	451, 452	Advanced Calculus	6
MATH	461	Abstract Algebra	4
MATH	496	Seminar	1
		Electives* (must include either MATH 453 or 462; 11 must be upper division)	12
			46

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair. Credit will not be given toward the major for mathematics courses with numbers below 181. **Students seeking a teaching endorsement should consult with the certification officer in the School of Education and Psychology.**

Cognate:

CPTR	141	Introduction to Programming	4

MATHEMATICS MAJOR (Bachelor of Science)

A student majoring in mathematics must complete 57 quarter hours in the major, consisting of the core requirements and one of four options. 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	181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH	289	Linear Algebra and Its Applications	3
MATH	312	Ordinary Differential Equations	4
MATH	496	Seminar	1
			24

Cognates:

CPTR	141	Introduction to Programming	4
PHYS	251, 252, 253	Principles of Physics	9
PHYS	254, 255, 256	Principles of Physics Laboratory	3
Select one of the following three sequence options			11-12
Option 1			
BIOL	141, 142, 143	General Biology	
Option 2			
CHEM	141, 142, 143	General Chemistry	
CHEM	144, 145, 146	General Chemistry Laboratory	
Option 3			
CPTR	142, 143	Data Structures, Algorithms and Objects	

And one additional CPTR course approved by the department.

ACTUARIAL STUDIES OPTION

This option prepares the student to take the first actuarial examination. Students preparing for the second examination should consult with their advisers.

MATH	315	Probability and Statistics	4
MATH	316	Regression and Time Series Analysis	4
MATH	341	Numerical Analysis	4
MATH	451,452	Advanced Calculus	6
ACCT	201, 202	Principles of Accounting	7
ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
FINA	351	Financial Management	4
FINA	365	Risk and Insurance	4
FINA	441	Financial Markets and Institutions	4
		Electives* (Mathematics)	16
			61

MATHEMATICS PREPARATION FOR GRADUATE STUDY OPTION

MATH	451, 452, 453	Advanced Calculus	9
MATH	461, 462, 463	Abstract Algebra	12
		Electives*	12
			33

MATHEMATICS PREPARATION FOR SECONDARY TEACHING OPTION

MATH	250	Discrete Mathematics	4
MATH	315	Probability and Statistics	4
MATH	321	Geometry	4
MATH	360	Introduction to the History of Mathematics	4
MATH	451, 452	Advanced Calculus	6
MATH	461	Abstract Algebra	4
		Electives*	7
			33

APPLIED MATHEMATICS OPTION

MATH	315	Probability and Statistics	4
MATH	341	Numerical Analysis	4
MATH	316	Regression and Time Series Analysis	
or			4
MATH	413	Partial Differential Equations	

Two of the following courses:

MATH	451, 452	Advanced Calculus	6-8
MATH	461, 462	Abstract Algebra	
		Electives*	13-15
			33

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair. Credit will not be given for mathematics courses with numbers below 181. **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:

Electives* (6 must be upper division)	**28**

Credit will not be given toward the minor for MATH 206, MEDU 395 or for mathematics courses numbered below 181.

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

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

MATH	112, 113	Mathematics for Elementary Teachers	6
MATH	181, 281, 282	Analytic Geometry and Calculus I, II, III	12
MATH	206	Applied Statistics	4
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3
MATH	321	Geometry	4
MATH	360	Introduction to the History of Mathematics*	4
			37

*MATH 360 has a prerequisite of MATH 283 or permission of instructor.

MATHEMATICS COURSES (MATH)

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**

Introduction to mathematics, including algebraic concepts, sets, counting, probability, and descriptive statistics. Additional topics selected from geometry, logic, matrices, linear programming, game theory, mathematics of finance, and stochastic processes. Designed to meet the general studies requirement for the baccalaureate degree, but will not apply toward a major or minor in mathematics. Prerequisite: Satisfactory departmental placement or MDEV 003.

MATH 112, 113 MATHEMATICS FOR ELEMENTARY TEACHERS **3, 3**

Study of topics in mathematics, including number theory, geometry, numeration, number systems, graphs, algebra, statistics, and measurements. Designed to meet the general studies requirement for the baccalaureate degree. Will not apply toward a major or minor in mathematics. Must be taken in sequence.

MATH 117 ACCELERATED PRECALCULUS **5**

Introduction to college algebra and trigonometry including equations and inequalities; algebraic, exponential, logarithmic, and trigonometric functions; graphs; and complex numbers. Credit will not be allowed for both MATH 117 and MATH 121 or 122. Prerequisite: Satisfactory departmental placement or MDEV 003.

MATH 121 PRECALCULUS MATHEMATICS I **4**

Study of college algebra including integers; rational, real, and complex numbers; equations and inequalities; polynomials; algebraic, exponential, and logarithmic functions; and graphs. Credit will not be allowed for both MATH 117 and MATH 121. Prerequisite: Satisfactory departmental placement or MDEV 003.

MATH 122 PRECALCULUS MATHEMATICS II **4**

Study of college precalculus including trigonometric functions and graphs; trigonometric identities; matrices; determinants; progressions; mathematical induction; and the binomial theorem. Credit will not be allowed for both MATH 117 and MATH 122. Prerequisite: MATH 121 or satisfactory departmental placement.

MATH 123 SURVEY OF CALCULUS **4**

Introduction to calculus, including topics such as functions, limits, derivatives, and integration in one or more variables; applications from business and social sciences. Will not apply toward a major or minor in mathematics. Credit will not be allowed for both MATH 123 and MATH 181. Prerequisite: MATH 117 or 121 or a satisfactory score on a departmental placement examination.

MATH 181 ANALYTIC GEOMETRY AND CALCULUS I **4**

Study of functions, limits, continuity, derivatives, definite integrals, and the Fundamental Theorem of Calculus. Credit will not be allowed for both MATH 123 and MATH 181. Prerequisite: MATH 117 or 122 or satisfactory departmental placement. A graphing calculator is required. For specific recommendations see the Department of Mathematics World Wide Web site (http://math.wallawalla.edu).

MATH 206 APPLIED STATISTICS **4**

Study of applied statistics, including methods of describing data, distributions, sampling, confidence intervals, hypothesis testing including analysis of variance, correlation and regression. Designed to meet the general studies requirements for the baccalaureate degree, but will not apply toward a major or minor in mathematics. Prerequisite: Satisfactory departmental placement or MDEV 003.

MATH 250 DISCRETE MATHEMATICS **4**

Introduction to discrete mathematical structures. Topics include combinatorics, sets, recursion, and graph theory. Prerequisite: MATH 123 or 181.

MATH 281 ANALYTIC GEOMETRY AND CALCULUS II **4**

Study of indefinite integrals, calculus of inverse functions, and techniques and applications of integration. Prerequisite: MATH 181. A graphing calculator is required. For specific recommendations see the Department of Mathematics World Wide Web site (http://math.wallawalla.edu).

MATH 282 ANALYTIC GEOMETRY AND CALCULUS III **4**

Study of sequences, series, polar coordinates, parametric equations, and vectors. Prerequisite: MATH 281. A graphing calculator is required. For specific recommendations see the Department of Mathematics World Wide Web site (http://math.wallawalla.edu).

MATH 283 ANALYTIC GEOMETRY AND CALCULUS IV **4**

Study of differential and integral calculus of multi-variable functions, line and surface integrals, Green's theorem, divergence theorem, and Stokes' theorem. Prerequisite: MATH 282.

MATH 289 LINEAR ALGEBRA AND ITS APPLICATIONS **3**

Study of matrices and determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. Prerequisite: MATH 123 or 181.

MATH 312 ORDINARY DIFFERENTIAL EQUATIONS **4**

Study of solutions of first order differential equations, solutions of linear differential equations of order n, applications, linear systems, and series solutions. Prerequisite: MATH 283.

MATH 315 PROBABILITY AND STATISTICS **4**

Study of counting and probability, probability distributions and densities, mathematical expectation, functions of random variables, sampling distributions, interval estimation, hypothesis testing, and analysis of variance. Prerequisite: MATH 283.

MATH 316 REGRESSION AND TIME SERIES ANALYSIS **4**

Study of simple and multiple linear regression including estimation, hypothesis testing, data analysis, and appropriateness of models. Also includes a study of linear time series models including estimation, data analysis, and forecasting. Prerequisite: MATH 315. Offered even years only.

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. Offered odd years only.

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. Credit will not be allowed for both MATH 319 and ENGR 419. Offered odd years only.

MATH 321 GEOMETRY **4**

Study of geometries, concentrating on Euclidean, non-Euclidean, and projective geometries; examination of axiomatic foundations and qualitative study of the geometries; considers briefly Mohr-Mascheroni constructions and impossible constructions. Prerequisite: MATH 281 and permission of instructor. Offered even years only.

MATH 341 NUMERICAL ANALYSIS **4**

Study of numerical methods with computer applications; topics include numerical solutions of nonlinear equations, systems of equations, ordinary differential equations, interpolation, and numerical integration. Prerequisites: MATH 289; MATH 312.

MATH 351 OPERATIONS RESEARCH **4**

Introduction to deterministic models in operations research; includes linear programming, network analysis, dynamic programming, and game theory. Prerequisites: MATH 283; MATH 289 or permission of instructor. Offered odd years only.

MATH 360 INTRODUCTION TO THE HISTORY OF MATHEMATICS **4**

Introduction to the history of mathematics from the beginning of hieroglyphic writing in Egypt and cuneiform in Mesopotamia to the influence of computers in the 20th century. Topics will include ancient mathematics, geometry and algebra from Greece, mathematics from China, India, and Islam, medieval algebra and geometry, mathematics from the Renaissance and the scientific revolution including analytic geometry and calculus, analysis and algebra through the 19th century, and topics from the 20th century. Prerequisite: MATH 283 or permission of instructor. Offered even years only.

MATH 413 PARTIAL DIFFERENTIAL EQUATIONS **4**

Study of partial differential equations, boundary-value problems and Fourier series. Prerequisites: MATH 289, MATH 312. Offered even years only.

MATH 423 COMPLEX ANALYSIS **4**

Study of functions of a complex variable, the geometry of elementary functions, integration, power series, calculus of residues, and conformal mapping. Prerequisite: MATH 283. Offered odd years only.

MATH 431, 432 MATHEMATICAL PHYSICS (OR PHYS 431, 432) **3, 3**

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 only.

MATH 451, 452, 453 ADVANCED CALCULUS **3, 3, 3**

Study of functions of one and several variables including continuity, differentiation, integration, infinite series, uniform convergence, and selected topics. Prerequisite: MATH 283. Offered odd years only.

MATH 461, 462, 463 ABSTRACT ALGEBRA **4, 4, 4**

Study of groups, rings, fields, vector spaces, linear transformations, selected topics, and applications. Prerequisite: MATH 289. Offered even years only.

MATH 476 PUTNAM PROBLEM SOLVING **1; 2**

Topics include problem solving with emphasis on both oral and written communication. This course prepares students for the William Lowell Putnam Mathematical Competition. Students will be required to participate in this competition which is held annually in early December. Prerequisite: Permission of the Department of Mathematics. Graded S or NC.

MATH 494 COOPERATIVE EDUCATION **0**

Individual contract involving students, faculty, and cooperating employers which provides the student with practical experiences in an off-campus setting. Graded S or NC. Prerequisites: MATH 283, CDEV 210 or equivalent, minimum cumulative GPA 2.75 in college mathematics courses, minimum cumulative GPA of 2.75 in all college courses, and departmental approval. Open only to mathematics majors.

MATH 496 SEMINAR **1**

Includes giving an oral report and writing a scholarly paper on an approved mathematical topic. Prerequisite MATH 451 or 461. Open to Junior/Senior mathematics majors only.

MATHEMATICS EDUCATION COURSES (MEDU)

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 a major or minor in mathematics. Offered odd years only.

DEVELOPMENTAL MATHEMATICS COURSES (MDEV)

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. 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.)

MUSIC

Karin Thompson, Chair; Brandon Beck, Leonard Richter, Lyn Ritz, 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 Theory I.

Requirements for minimum piano proficiency must be completed before the student 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.

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. Students whose performance area is in a keyboard instrument will participate in the primary ensemble of their choice. Keyboard majors may substitute up to six quarters of Piano Ensemble (MUPF 285) toward the fulfillment of this requirement.

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 Students and Teachers,* available at the music office and online at 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 study are strongly encouraged to take the general GRE.

BACHELOR OF MUSIC GENERAL STUDIES REQUIREMENTS:

ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HIST	120, 121, 122	History of Western Civilization	8
HLTH		*Health	2
PEAC		Physical Activity Courses	2
		Social Science Elective (as required by general studies)	4
		Mathematics and Natural Science (as required by general studies)	12
RELB, RELH, RELT		*Religion and Theology	18
			55

*Denominational certification requires specific classes. See Education and Psychology section of this bulletin.

MUSIC EDUCATION DEGREE 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 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	0
			62

MUSIC EDUCATION TEACHER CERTIFICATION REQUIREMENTS:

Students wishing teacher certification must take the following courses and fulfill certification requirements as listed by the School of Education and Psychology.

MUED	395	Elementary School Music Methods and Materials	4
MUED	396	Secondary Music Methods	3

MUSIC EDUCATION EMPHASES (INSTRUMENTAL, CHORAL, GENERAL):

State certification is available in choral or instrumental music. Students wishing to receive certification in both areas may choose the general music option, the third area endorsed by Washington State. (Note that the choral emphasis includes additional keyboard studies.) Guidelines for all three options are available from the School of Education and Psychology. Students choose one or both 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	6
		35

Choral Emphasis

MUED 251, 252, 253	Singer's Diction	3
MUED 354	Vocal Techniques and Methods	3
MUPF	*Applied Music	20
MUPF	Keyboard Performance Studies	6
MUPF	Conducting	6
		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 116 quarter hours in the major, 63 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 Requirements:

ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
FREN	101, 102, 103	Elementary French	
or			12
GRMN	101, 102, 103	Elementary German (German recommended)	
HIST	120, 121, 122	History of Western Civilization	8
		Humanities (non-music)	4
		Mathematics and General Science (as required by general studies)	12
PEAC		Physical Activity Courses	2
RELB, RELH, RELT		Religion and Theology	16
			63

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 II	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)	48
MUPF	387	Junior Recital	0
MUPF	487	Senior Recital: Music Major	0
			116

*Twenty hours in the primary performance area must be upper division and must be distributed over at least five quarters. A maximum of 3 hours of MUPF 127 in the major performance area may apply to the major. The requirements listed below must be completed according to a student's primary area, as indicated. These performance requirements may be counted toward the applied music core requirement of 48 hours.

Piano Majors:

MUPF	127	Organ or Harpsichord	3
MUPF	276	Accompanying Practicum	0,0,0
MUPF	351	Advanced Keyboard Skills	1,1,1

Organ Majors:

MUPF	127	Piano or Harpsichord	3
MUPF	276	Accompanying Practicum	0,0,0
MUPF	351	Advanced Keyboard Skills	1,1,1

Instrumental Majors:

MUPF	285	Chamber Ensemble	3

Voice Majors:

MUED	251, 252, 253	Singer's Diction	1,1,1
MUED	354	Vocal Techniques and Methods	3

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	124	Music Notation Lab	1
MUCT	221, 222, 223	Theory II	9

MUCT	231, 232, 233	Ear Training II	3
MUCT	424	Form and Analysis	3
MUCT	426	Counterpoint	3
MUHL	134	World Music	4
MUHL	321, 322, 323	History of Music	12
MUPF		Applied Music[1]	15
MUPF	487	*Senior Recital: Music Major	0
		Electives[2]	4
			66

*A conducting or composition recital, or research project, as approved by the music faculty, may be substituted for the senior recital.

1. 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. With music faculty permission, students may substitute additional hours in upper-division theory and composition for this requirement, once upper-division performance status is attained.

2. Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair.

MUSIC MINOR

A student minoring in music must complete 30 quarter hours:

MUCT	121, 122, 123	Theory I	9
MUCT	131, 132, 133	Ear Training I	3
MUCT	124	Music Notation Lab	1
MUHL	124	Introduction to Music	
or			4
MUHL	134	World Music	
MUPF		*Applied Music (3 must be upper-division)	8
MUPF	486	Senior Recital: Music Minor	0
		Electives (2 must be upper-division)	5
			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.

COMPOSITION AND THEORY COURSES (MUCT)

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.

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.

MUCT 231, 232, 233 EAR TRAINING II **1, 1, 1**

Development of aural skills, including sight singing and ear training.

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/or the permission of the instructor. Offered as needed.

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 424 or permission of instructor. Offered odd years only.

MUCT 426 COUNTERPOINT **3**

Study of the more intricate forms of contrapuntal writing such as motet, canon, and fugue. Prerequisites: MUCT 221, 222, 223 or permission of instructor.

MUCT 434 ADVANCED COMPOSITION **1-3; 3**

Advanced composition in the larger forms. Prerequisite: MUCT 335 and/or permission of instructor. Offered as needed.

MUSIC EDUCATION COURSES (MUED)

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 even years only.

MUED 261, 262 BRASS TECHNIQUES AND METHODS 1, 1

Class instruction in the performance and teaching of brass instruments. 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. Prerequisite: fundamental ability on at least one woodwind instrument and permission of the instructor. Offered as needed.

MUED 281, 282 STRING TECHNIQUES AND METHODS 1, 1

Class instruction in the performance and teaching of string instruments. Prerequisite: fundamental ability on at least one string instrument and permission of the instructor. Offered as needed.

MUED 291, 292 PERCUSSION TECHNIQUES AND METHODS 1, 1

Class instruction in the performance and teaching of percussion instruments. 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, 334, 335 PIANO PEDAGOGY AND LITERATURE 1, 1, 1

Study of the teaching of piano, including a survey of materials, repertoire, and techniques. Offered as needed.

MUED 354 VOCAL TECHNIQUES AND METHODS 3

Study of vocal production and instruction, including a survey of materials. Offered as needed.

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. Corequisite: EDUC 390.

MUED 395 ELEMENTARY SCHOOL MUSIC METHODS AND MATERIALS4

A comprehensive study of objectives, procedures, and materials in music education for kindergarten through grade eight. Prerequisite: Permission of instructor. Corequisite: EDUC 390.

MUED 396 SECONDARY MUSIC METHODS 3

Study of objectives, procedures, and materials in music education for grades seven through twelve. By permission of the instructor only. Corequisite: EDUC 390. Offered odd years only.

MUSIC HISTORY AND LITERATURE COURSES (MUHL)

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 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 only.

MUSIC PERFORMANCE COURSES (MUPF)

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 University Singers, MUPF 255 Wind Symphony, and MUPF 266 Symphony Orchestra.

MUPF 215 UNIVERSITY SINGERS **0-1**

A large choir that performs major choral works and sings for church services.

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.

MUPF 255 WIND SYMPHONY **0-1**

A traditional concert band that performs locally on a quarterly basis and occasionally tours.

MUPF 266 SYMPHONY ORCHESTRA **0-1**

An organization that performs representative orchestral literature from the Baroque era to the present.

MUPF 276 ACCOMPANYING PRACTICUM **0**

Supervised accompanying activities, including discussion of ensemble and technique as appropriate. Prerequisite: MUPF 227 and 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.

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.

MUPF 285 ENSEMBLE **0-1**

Vocal or instrumental duos, trios, quartets, or larger groups under the direction of a music department faculty member.

CONDUCTING COURSES

MUPF 361 BASIC CONDUCTING **2**

Study of basic techniques and the art of conducting musical ensembles of all kinds. Offered even years only.

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 only.

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 only.

MUPF 365 CONDUCTING PRACTICUM **1; 2**

Conducting activities and projects are 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 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. 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 479 DIRECTED RESEARCH/PROJECT **1-3**

As approved by the faculty, an alternative to MUPF 487, Senior Recital (0 credit) in the B.A. degree in Music.

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. and B.Mus. in Music Performance degrees, in consultation with the student's applied lesson teacher. Graded S or NC.

NONDEPARTMENTAL

COOPERATIVE EDUCATION

In selected programs, students may blend their academic study with career-related, paid, productive employment in business, industry, government, or social agencies. Co-op placements, full or part-time, are arranged by the student or through academic departments. Duration of appointments is typically one quarter but may be extended or repeated. One credit hour of cooperative education is equal to 30 work hours. Also required is an accurate and complete file as directed through the Career Center. Supervision and evaluation are the responsibility of the co-op adviser in the student's major field of study, the student's employer, and the University co-op coordinator.

Participants in the Cooperative Education Program may gain valuable work experience while earning university credit. For more information, students may contact their academic departments and the Career Center.

Program Guidelines.

The following are academic guidelines for the Cooperative Education program: (1) a minimum of 30 hours of approved activity/experience must be completed to have a Cooperative Education experience recorded on the transcript for 0 credit; (2) for each credit earned, a minimum of 30 hours of approved activity must be completed; (3) the Cooperative Education experience/credit is restricted to the major; (4) excess hours cannot be used toward general electives.

CAREER DEVELOPMENT

CDEV 100 EXPERIENTIAL PROGRAM **6**

This course 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 adviser, 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 student 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.

DENT 315 INTRODUCTION TO DENTISTRY **1**

A survey of modern dental practice that combines laboratory work, clinical observation, and classroom discussions of diagnosis, treatment plan formulation, practice management and other dentistry topics. Preference will be given to Juniors and Seniors. Graded S or NC. (Course fees apply.)

CHRISTIAN SERVICE VOLUNTEER

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. Graded S or NC.

GENERAL COURSES (GNRL)

GNRL 100 PRINCIPLES OF SYSTEMATIC STUDY **2**

Study of systematic and practical techniques used in university work. Credit will not apply toward graduation or calculate into G.P.A.

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 401 CONTINUING ENROLLMENT **0**

A continuation course for students who have been approved to participate in Commencement, but have not completed degree requirements. (Course fees apply.)

READING COURSES (RDNG)

RDNG 100 DEVELOPMENTAL READING **2; 6**

Individualized instruction in reading, including comprehension, vocabulary, speed, and study skills essential for success in college studies. This course may be taken for up to six quarter hours during three quarters with materials being chosen to suit the individual's progress. Credit does not apply toward graduation.

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.

SCHOOL OF NURSING

Lucille Krull, Dean; Trudy Klein, Associate Dean; Rosemarie Buck Khng, Debbie Lampson, Mary McClay, Verlene Meyer, Michaelynn Paul, Karen Tetz, Jan Thurnhofer, Lynn Wagner.

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 a foundation for graduate study.

The freshmen and sophomore years of the nursing curriculum are taken on the College Place campus and include a combination of general studies, nursing cognates, and nursing courses. The junior and senior years are taken on the Portland, Oregon campus. A limited number of students who have completed the required prerequisites and admissions procedures can take sophomore nursing courses during the summer term on the Portland campus.

The Portland campus is located adjacent to the Adventist Medical Center. The nursing education building houses teachers' offices, classrooms, and the library. The Howard F. Hansen Hall is the residence for students on the Portland campus.

The School has contractual agreements for student clinical experience in a variety of settings, including community hospitals, service agencies, home-care and 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 National League for Nursing Accrediting Commission (NLNAC) serves as an additional resource for information regarding required tuition, fees, and length of program. The National League for Nursing Accrediting Commission, 3343 Peachtree Rd NE, Suite 500, Atlanta, Georgia 30326. Phone: 404-975-5000.

ACCREDITATION

The School of Nursing is fully accredited by the National League for Nursing Accrediting Commission. 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 admission online to the University through Marketing and Enrollment Services. See the admission requirements to the University. Additional requirements are listed below for each student category.

Once admitted to the University and prior to entering the first clinical nursing course (usually before beginning the sophomore year), each student must be accepted to the School of Nursing as a nursing major. A separate online nursing 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 categories of nursing applicants:

1. Have an acceptable grade point average (see categories below) and submit all official transcripts. Credits in Anatomy and Physiology, Chemistry, and Microbiology that are more than five years old will not be applied as cognates.
2. Submit the completed online School of Nursing application.
3. Submit two additional letters of recommendation besides the one required for admission to the University (prefer teacher, employer, or co-worker).
4. Have a passing score on the required entrance tests; reading comprehension, critical thinking/reasoning, and math. Schedule with adviser. See the *Financial Bulletin* for required testing fee.
5. Have a minimum TOEFL score of 550 (paper test) or 213 (computer based test) for those whose native language is not English. This must be passed before taking the reading comprehension, critical thinking/reasoning, and math tests.

After acceptance into the School of Nursing, the following are required:

1. A fee is required to secure a place in the program. The fee will be applied to tuition. If the applicant does not enroll in the program, the fee is not refundable (See Financial Bulletin for fee amounts).
2. Each nursing student is subject to a security check. The School of Nursing reserves the right to deny admission or remove students from the nursing program who have records of misconduct, legal or otherwise, that would jeopardize their professional performance. State licensure boards reserve the right to deny licensure in their states if applicants have a criminal history.
3. Have required immunization and TB testing. Submit immunization records to Campus Health and Wellness Office for the College Place, Washington, campus or to the School of Nursing for the Portland, Oregon, campus.
4. Obtain health insurance. Provide necessary information on the WWU health care insurance plan form, required yearly, or whenever health insurance is changed.
5. Prior to taking clinical coursework, a student must obtain current American Heart Association cardiopulmonary resuscitation (CPR) certification for health care providers. Submit a copy of your CPR-health care provider card to the School of Nursing. 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. (The uniform is the same for both campuses.)

Additional admission requirements must be met for each of the following categories in the nursing program.

Category 1, Fall Nursing Applicant: College Place, Washington, campus. In addition to the admission requirements above, applicants must have successfully completed prerequisite courses and have a GPA of 2.75 or above. The School of Nursing begins reviewing applicants on April 15 and continues until the class is full. Applicants will be notified of their status by the School of Nursing.

Category 2, Summer Entry Applicant; Portland, Oregon, campus. In addition to the admission requirements above, applicants must have a 3.25 GPA or above and have successfully completed at least 85 credits of the required cognates, general studies, and electives that apply to the nursing major. The School of Nursing begins reviewing applicants on February 1 and continues until the class is full. Applicants will be notified of their status by the School of Nursing.

Category 3, Transfer Student from Another Nursing Program.

In addition to the admissions requirements above, the applicant must:

1. Be a current student or a student within the past two years of an accredited school of nursing. The applicant must be in good standing with the previous institution with a cumulative GPA of at least 2.75 and no grade of C- or below in nursing classes or cognate courses.
2. Submit a letter of recommendation from the dean of the school of nursing from which the applicant is transferring.
3. Submit nursing class syllabi as requested for evaluation. Placement in nursing courses 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. Transfer students will be evaluated individually to determine program placement and accepted on a space-available basis.

Category 4, Registered Nurse (RN) Applicant.

In addition to the admission requirements above, applicants must:

1. Hold an associate degree in nursing from a regionally accredited college and have at least a 2.75 GPA.
2. Have an unrestricted registered nurse license in the State of Oregon. Submit a copy of this license to the School of Nursing. License must remain unrestricted throughout the program.
3. Submit to the School of Nursing a letter of recommendation from the director of the school of nursing from which the applicant graduated; or from the employer if applicant is more than five years from graduation.
4. Complete validation process. The School of Nursing 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. Placement in the program is determined by completed cognates and general studies courses and by validation examination on a space-available basis.

a. The licensed RN who completed an associate degree in nursing and passed the NCLEX-RN ***mor***e than five years prior is required to pass a standardized examination to validate nursing knowledge. (Fee Applies). After passing the validation exam, the student will receive credit; see course description NRSG 291 and 391.
b. The licensed RN who completed an associate degree in nursing and passed the NCLEX-RN ***within*** five years is not required to take a validation examination. Upon providing proof of licensure in Oregon and an official A.D. transcript, the student will receive credit; see course description NRSG 291 and 391.

Category 5, Licensed Practical Nurse (LPN). In addition to the above admission requirements, the LPN applicant must:

1. Have an unrestricted LPN license in any state. Submit a copy to the School of Nursing. License must remain unrestricted throughout the program.
2. Have at least a 2.75 GPA with no grades of C- or below in prior nursing courses or cognate courses.
3. Have completed 85 transferrable credits of required cognates, general studies and electives that apply to the nursing major. Applicants are accepted on a space-available basis.
4. Take a standardized examination to validate nursing knowledge and receive advanced standing as a junior level student. (Fee Applies.) After passing the validation exam, the student will receive credit; see course description NRSG 290.

PROGRESSION AND GRADUATION REQUIREMENTS

Any student with a WWU grade-point 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 courses may be repeated to improve the GPA if space is available.

Students who receive a grade lower than a C or withdraw because they are 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 and 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. If a request is denied, the student is dismissed from the nursing program.

Readmission to the School of Nursing is also contingent upon meeting the following criteria: 1) meet all admission requirements and 2) complete all outstanding work including standardized examinations. Readmission is not guaranteed and space for re-entering students may be limited.

A passing grade in a course cannot be achieved without the successful completion of the clinical portion. 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, 212, 213, 321, 331, 344, 421, 437, 441, cannot begin the next clinical course until the incomplete is removed.

Standardized examinations are given after completion of designated sophomore and junior nursing courses. Students who fail to achieve a satisfactory score must enroll in remedial courses. 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 exam. After auditing the class, students have one more chance to take 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.

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.

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 who are judged to be unsafe practitioners will be removed from the clinical area and are subject to dismissal as nursing majors.

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 an additional background security check and a drug screening. Students are responsible for any fee.

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.

NURSING MAJOR (Bachelor of Science)

A student majoring in nursing must complete 82 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.

Major Requirements: A minimum grade-point average of 2.75 is required. No grade lower than C will apply.

NRSG	210	Introduction to Nursing	3
NRSG	211	Fundamentals of Nursing	4
NRSG	212	Health Assessment and the Nursing Process	4
NRSG	213	Pharmacology in Nursing	4
NRSG	321	Nursing of the Acutely Ill Adult	8
NRSG	325	*Research in Nursing	3
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	475	Interpreting Lab Values	
	or		2
NRSG	490	Nursing Practicum	
NRSG	437	Advanced Acute Nursing	8
NRSG	441	Community Health Nursing	8
NRSG	445	Issues and Trends in Nursing	3
NRSG	450	NCLEX Review	3
			82

*This course is a prerequisite for 400 level nursing clinical courses

Cognates: No grade lower than C will apply.

BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	101, 102	Introductory Chemistry	8
HLTH	220	Human Nutrition	4
MATH	206	Applied Statistics	4
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SOCI	236	Privilege and Oppression	
or			3-4
SOCI	238	Health and Culture	
SOWK	224	Human Development and the Family	4
SPCH	101	Fundamentals of Speech Communication	4
or			
SPCH	207	Small Group Communication	3
			51-53

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, 122	College Writing I, II	6
ENGL	223	Research Writing	3
		Religion and Theology (minimum of 6 quarter hours in Biblical Studies)	16
		General Studies Electives (varies)	13

NURSING COURSES (NRSG)

NRSG 290 LPN VALIDATION **15**

Validation of prior nursing education for licensed practical nurses. Based on successful completion of a standardized examination, LPN's with a current license 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 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 29 upper division nursing credits and are exempt from NRSG 321, 331, 344, 354, and 450. NRSG 391 and NRSG 291 are both part of the same validation process.

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 101 NURSING PERSPECTIVES I **1**

An overview of nursing as a career choice and the Walla Walla University nursing curriculum, as well as how to prepare for entrance into the program. Designed to promote the academic success of nursing students and to provide sufficient understanding of the nature and scope of nursing for students to evaluate the career in relation to their goals and aptitudes. Introduction to essential study, math, writing, communication, critical thinking and workplace skills for success in nursing education and practice. Provides a forum for support and sharing for pre-nursing students. Recommended for nursing majors.

NRSG 102 NURSING PERSPECTIVES II **1**

Exploration of career and service opportunities in nursing. Focused preparation for the nursing admission tests. Introduction to the nursing process and to additional vocabulary and skills which will foster success in nursing. Provides a forum for support and sharing for pre-nursing students. Recommended for nursing majors.

NRSG 210 INTRODUCTION TO NURSING **3**

Introduction to professional nursing practice, education, and health maintenance. Includes concepts on historical perspectives, current trends, human needs, nursing process, and lifestyle practices necessary to prevent illness. Provides basis for developing effective communication skills and helping relationships.

NRSG 211 FUNDAMENTALS OF NURSING **4**

Emphasis on developing beginning and intermediate skills and knowledge of the nursing process; two credit hours of clinical lab included. Includes learning experiences in an adult acute or chronic health care facility. Prerequisites: BIOL 121, 122, 123. Prerequisites or corequisites: NRSG 210; PSYC 130. Lab fee applies.

NRSG 212 HEALTH ASSESSMENT AND THE NURSING PROCESS 4

Emphasis on the nursing process and physical assessment of children and adults. Includes introduction to psychosocial, spiritual, developmental, and nutritional assessment. Includes learning experiences in a health care facility. Two credit hours of clinical lab included. Prerequisite: NRSG 211. Lab fee applies.

NRSG 213 PHARMACOLOGY IN NURSING 4

Introduction to the major classifications of therapeutic drugs. Two credit hours of clinical experience includes the administration of drugs to clients in an acute care setting. Prerequisite: NRSG 211. Prerequisite or corequisite: NRSG 212. Lab fee applies.

NRSG 233 TOPICS IN NURSING 2

Study of current topics of interest in professional nursing. May include papers or other projects. Graded S or N/C. Offered as needed.

NRSG 234 MEDICAL TERMINOLOGY 2

This course focuses on providing students with a working knowledge of medical terminology used in any health career. Students learn basic roots, prefixes and suffixes, then apply that knowledge to the analysis of medical terms. Learning is organized by body systems, with information about terminology and abbreviations used for anatomy, physiology, pathology, diagnostic tests and treatments related to each system. May apply to NRSG 233, Topics in Nursing requirement.

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 310 TRANSITIONS 2

Facilitates the transition of the registered nurse, licensed practical nurse, and non-baccalaureate transfer student. Focus is on selected concepts, models, theories, and processes related to professional nursing. Required for all RN+, LPN and transfer students.

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. Lab fee applies.

NRSG 325 RESEARCH IN NURSING 3

The research process as applied to nursing, including critiques of published nursing research, methodology, and statistical analysis. Development of a research proposal is required. Prerequisites: MATH 206 or equivalent; ENGL 223.

NRSG 331 MENTAL HEALTH NURSING 8

Nursing care of clients experiencing alterations in psychosocial behavior. Focus is on etiology, assessment and providing care for clients with psychiatric disorders. Four credit hours of clinical lab included. Prerequisite: NRSG 213. Prerequisite or Corequisite: NRSG 354. Lab fee applies.

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; SOCI 324. Lab fee applies.

NRSG 354 PATHOPHYSIOLOGY **5**

Emphasizes understanding diseases of body systems and treatment as a basis for nursing assessment and intervention. Prerequisites: BIOL 121, 122, 123 BIOL 222, CHEM 101, 102, NRSG 213.

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. Lab fee applies.

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 N/C. Offered as needed.

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.

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 hours of clinical lab included. Prerequisites: NRSG 321, 331, 344, 354. Lab fee applies.

NRSG 441 COMMUNITY HEALTH NURSING **8**

Study and application of nursing, public health, and organizational theories through use of the nursing process to communities, populations, and subpopulations at risk within the community. Health beliefs and special needs of groups from diverse cultures are explored. Four credit hours of clinical lab included. Prerequisites: NRSG 321, 325, 331, 344, 354. Lab fee applies.

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**

This course 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 for nurses 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**

Individual study arrangement involving students, faculty, and health care agencies to gain additional clinical experience in an area of special interest. Prerequisite: Senior standing with a WWU junior year GPA (nursing and non-nursing courses) of 3.25 or higher. Other limitations apply - see the School of Nursing Handbook for details. Only one practicum per student is allowed. Graded S or N/C.

NRSG 494 COOPERATIVE EDUCATION **0-4**

Individual contract arrangement involving students, faculty, and cooperating health care agencies to gain practical nursing experience. Prerequisite: NRSG 213 and permission of the nursing faculty. Only two credits may apply toward the major. Graded S or NC.

PHYSICS

Thomas Ekkens, Chair; Roy Campbell, Frederic Liebrand.

The department offers a Bachelor of Arts degree and 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 physics major who is preparing for secondary teaching often chooses the Bachelor of Arts degree, including the certification requirements as outlined in the Education and Psychology section of this bulletin.

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 Arts)

A student majoring in physics must complete 50 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.

Major Requirements:

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	401, 402	Electricity and Magnetism	8
PHYS	417	Physics Seminar	3
PHYS	420	Classical Mechanics	3
PHYS, ASTR		Electives	12
			50

Electives may be ASTR 144-146 or any upper-division course with a PHYS prefix. No more than 4 hours of lower-division course work will count towards electives under the Bachelor of Arts degree.

*Students who have completed PHYS 211, 212, 213 may meet the PHYS 251, 252, 253 requirement by passing a department validation.

Required Cognates:

CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CPTR	141	Introduction to Programming	4
MATH	181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH	289	Linear Algebra and Its Applications	3
MATH	312	Ordinary Differential Equations	4

Recommended Courses:

ASTR	142, 143	General Astronomy	3,3
ASTR	145, 146	General Astronomy Laboratory	1,1
ENGR	228	Circuit Analysis	4
ENGR	325	Instrumentation	4
ENGR	354	Digital Logic	3
MATH	315	Probability and Statistics	4
MATH	341	Numerical Analysis	4
MATH	413	Partial Differential Equations	4
MATH	423	Complex Analysis	4

PHYSICS MAJOR (Bachelor of Science)

A student majoring in physics must complete 60 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.

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.

Major Requirements:

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	401, 402	Electricity and Magnetism	8
PHYS	414, 415	Experimental Physics I,II	2
PHYS	417	Physics Seminar	3
PHYS	420, 421	Classical Mechanics	6
PHYS	422, 423	Quantum Mechanics	6
PHYS		Electives	11
			60

*Students completing PHYS 211, 212, 213 may meet the PHYS 251, 252, 253 requirement upon departmental validation

Physics electives may be chosen from the following courses or chosen in consultation with adviser:

PHYS	312	Physical Electronics	3
PHYS	315	Physical Electronics Laboratory	1
PHYS	321	Modern Optics I	3
PHYS	325	Modern Optics II	3
PHYS	326, 327	Modern Optics Laboratory I, II	1,1
PHYS	331	Introduction to Nanotechnology	3
PHYS	332	Introduction to Nanotechnology Lab	1
PHYS	431, 432	Mathematical Physics	3,3
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	Introduction to Programming	4
ENGR	228	Circuit Analysis	4
MATH	181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH	289	Linear Algebra and Its Applications	3
MATH	312	Ordinary Differential Equations	4

Recommended Courses:

ASTR	142, 143	General Astronomy	3, 3
ASTR	145, 146	General Astronomy Laboratory	1, 1
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
MATH	423	Complex Analysis	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 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:

- If the student has satisfactorily completed PHYS 313 Thermodynamics as a substitution for ENGR 332 Thermodynamics, the total required quarter hours for a minor are reduced by 4 quarter hours.
- 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 3 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 received departmental certification of satisfactory knowledge in PHYS 313 Thermodynamics, the total required quarter hours for a minor are reduced by 4 quarter hours.

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.

ASTRONOMY COURSES (ASTR)

ASTR 141, 142, 143 GENERAL ASTRONOMY **3, 3, 3**

Introduction to modern astronomy with emphasis on the place of astronomy in man's cultural and scientific thought and experience. First quarter includes study of planets, moons, comets, meteors, and the solar system as a unit. Second quarter includes the sun and other stars, stellar life cycles and the fate of our sun. Third quarter includes black holes and quasars, galaxies, theories of the origin and fate of the universe, as well as perspectives on the search for other life in the universe. Any two quarters may be taken to satisfy the general science requirement. Corequisite: ASTR 144, 145, 146.

ASTR 144, 145, 146 GENERAL ASTRONOMY LABORATORY **1, 1, 1**

Laboratory and observatory activities integrated with ASTR 141, 142, 143. Corequisite: ASTR 141, 142, 143. (Course fees apply.)

PHYSICS COURSES (PHYS)

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

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**

Introduction to mechanics, relativity, thermodynamics, electromagnetism, wave motion, and optics; 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.)

UPPER DIVISION PHYSICS PREREQUISITES

PHYS 251, 252, 253 or equivalent and MATH 281, 282, 283 are prerequisites for all courses numbered PHYS 300 or above except PHYS 395.

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, nuclei and the solid state. Prerequisites: PHYS 310; MATH 315. Recommended corequisite PHYS 416. Offered odd years only.

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.

PHYS 313 THERMODYNAMICS **4**

Study of thermodynamics and elementary statistical mechanics. Systems containing very large numbers of particles are discussed, bridging the gap between the microscopic and macroscopic description of such systems. Heat, temperature, and pressure are covered and related to the motions and energies of individual atoms. Irreversible processes and their implications are also covered. Prerequisite: PHYS 310.

PHYS 314 MODERN PHYSICS LABORATORY I **1**

Laboratory activities integrated with PHYS 310 Modern Physics. Corequisite: PHYS 310.

PHYS 315 PHYSICAL ELECTRONICS LABORATORY (OR ENGR315) 1

Experimental study of the physical principles of solid state electronics devices. Corequisite: PHYS 312.

PHYS 316 MODERN PHYSICS LABORATORY II 1

Laboratory activities integrated with PHYS 311 Modern Physics. Corequisite: PHYS 311. Offered odd years only.

PHYS 321 MODERN OPTICS I 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. Corequisite: PHYS 326. Offered odd years.

PHYS 325 MODERN OPTICS II 3

Continuation of the study of light and matter. Non-linear effects in materials, lasers, and device applications in fiber optics and photonics. Prerequisite: PHYS 321 or permission of instructor. Corequisite: PHYS 327. Offered odd years.

PHYS 326 MODERN OPTICS LABORATORY I 1

Laboratory work integrated with the topics of PHYS 321. Corequisite: PHYS 321. Offered odd years.

PHYS 327 MODERN OPTICS LABORATORY II 1

Laboratory work integrated with the topics of PHYS 325. Corequisite: PHYS 325. Offered odd 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. This course is designed to complement PHYS 312 Physical Electronics and PHYS 321, PHYS 325 Modern Optics. 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 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 instrumentation, data acquisition techniques and computer interfacing. Offered odd years.

PHYS 415 EXPERIMENTAL PHYSICS II 1

Study of experimental methods in physics. Topics include physical measurement, experiment design and data analysis. Experiments in classical and modern physics will be performed. A term project is required. Offered odd years.

PHYS 417 PHYSICS SEMINAR **1; 4**

Discussion of contemporary and classical topics in physics, with emphasis placed on underlying principles and the interrelation of physical concepts. A term project is required. Three quarters offered during odd years. One quarter offered during even years.

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. Prerequisite: PHYS 420. Offered odd years.

PHYS 431, 432 MATHEMATICAL PHYSICS (OR MATH 431, 432) **3, 3**

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 even 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 123 or MATH 181 or permission of instructor. Offered even years.

PHYS 494 COOPERATIVE EDUCATION **0**

Individual contract arrangement between a cooperating employer and a student which provides the student with practical experience in an off-campus setting. Graded S or NC. Prerequisites: CDEV 210 or equivalent, completion of at least ten credit hours of upper division physics courses, and departmental approval.

PREPROFESSIONAL PROGRAMS

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 adviser.

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.

Please note that C- grades are not transferable for credit.

CHIROPRACTIC

Steven Lee, Academic Adviser.

Two years of college work are generally required, including one year of biology and at least one year of chemistry. Students should obtain a bulletin from each chiropractic college where they may wish to apply for information on specific entrance requirements. Of the dozen approved schools in the United States, Western States Chiropractic College in Portland, Oregon, is the only one in the Northwest. The admission requirements of Western State Chiropractic College presently include one-year courses in general chemistry, organic chemistry, general biology, and general physics.

CYTOTECHNOLOGY

Steven Lee, Academic Adviser.

Students preparing for the Bachelor of Science degree in Cytotechnology should plan to complete 96 quarter hours before entering the professional training. The curriculum requirements of Loma Linda University include:

ANTH	225	Cultural Anthropology	
or			4
SOCI	236	Privilege and Oppression	
BIOL	141, 142, 143	General Biology	12
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	101, 102	Introductory Chemistry	8
ENGL	121, 122	College Writing I, II	3, 3
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	3
or			
HLTH	220	Human Nutrition	4
MATH	117	Accelerated Precalculus	
or			4-5
MATH	121	Precalculus Mathematics I	

PEAC	Physical Education Activity Courses	2
	Cultural Heritage	9
	Select courses from: ART 251; MUHL 124, 134 (Applied ART/MUS 2 hrs max); PHIL 205, 206; HIST 120, 121, 122, 221, 222; ENGL 204, 207; Any foreign language	
	Religion	4 credits per year
	Social Sciences	12-16
	Select from at least two areas: ECON 204, ECON 211, 212; HIST 224; HIST 454; PSYC 130, 215, 220; SOCI 204, 225	
	Electives	
	To meet the minimum of 96 quarter hours (choose from SPCH 101, CPTR 110).	

DENTISTRY

Nelle Cornelison, Joan Redd, Academic Advisers.

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 and 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, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
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
		Religion	(one course per year)

Loma Linda University also recommends additional courses selected from the following areas:

Accounting
Anatomy
Biochemistry
Calculus
Histology
Information Systems/Computer Science
Management
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.

DENTAL HYGIENE

Curtis Kuhlman, Academic Adviser.

Loma Linda University

Students planning for careers in dental hygiene must complete 96 quarter hours with a cumulative grade-point average of 3.00 or more before seeking admission to the various dental hygiene programs. Most community college programs lead to the terminal A.S. degree, but still require one year of basic courses, including all of the sciences, before beginning the two year program. The B.S. programs have 96 hours of prerequisites. Courses required for admission to Loma Linda University are as follows.

Communication Skills		**(13 hours)**	
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
SPCH	101	Fundamentals of Speech Communication	4
Natural Science		**(24 hours)**	
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	101, 102	Introductory Chemistry	8
		College Mathematics Course (100 level or above)	4
Humanities		**(16 hours)**	
		Courses selected from the following (must be in a minimum of two areas): history, fine arts (theory), literature, philosophy, foreign language.	
Social Sciences		**(12 hours)**	
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
ANTH	225	Cultural Anthropology	4
or			
SOCI	236	Privilege and Oppression	4
Physical Education			2
HLTH	110	Wellness for Living	
or			3-4
HLTH	220	Human Nutrition	
Religion Electives			8
		(meet 96 quarter hour requirement)	
CPTR	110	Principles of Computing (highly recommended)	

EMERGENCY MEDICAL CARE/CARDIOPULMONARY SCIENCES

Joan Redd, Academic Adviser.

Students preparing for the Bachelor of Science degree in emergency medical care/cardiopulmonary sciences should plan to complete 48 quarter hours before entering the professional training. The curriculum requirements of Loma Linda University include:

ANTH	225	Cultural Anthropology	4
or		(May be taken while in the program)	
SOCI	236	Privilege and Oppression	4
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	101,102	Introductory Chemistry	8
ENGL	121,122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	3
or			
HLTH	220	Human Nutrition	4
PEAC		Physical Education Activity Courses	2
PHYS	201, 204	Conceptual Physics	0-4
		(or high school physics)	
PSYC	130	General Psychology	4
		Select 8 additional credits from PSYC 215, 220, SOCI 204	
		Mathematics	
		Two years high school level mathematics selected from Algebra I, Algebra II, geometry with a grade of C or better.	
		Religion	4 credits per year
		Electives	
		To meet the minimum of 48 quarter hours.	
		Recommended: SPCH 101, CPTR 110	

Additional general education courses may be taken at WWU before transferring.

HEALTH INFORMATION ADMINISTRATION

Norman Anderson, Academic Adviser.

Students preparing for the Bachelor of Science degree in health information administration should plan to complete 96 quarter hours before entering the professional training. The curriculum requirements of Loma Linda University include:

ACCT	201	Principles of Accounting	4
ANTH	225	Cultural Anthropology	
or			4
SOCI	236	Privilege and Oppression	
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
		(highly recommended)	

CPTR	110	Principles of Computing	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	
or			3-4
HLTH	220	Human Nutrition	
MATH	105	Finite Mathematics	
or			4
MATH	121	Precalculus Mathematics I	
NRSG	234	Medical Terminology	2
PEAC		Physical Education Activity Courses	2
PSYC	130	General Psychology	4
SPCH	101	Fundamentals of Speech Communication	4
		Cultural Heritage	9
		Select courses from: ART 251; MUHL 124,134 (Applied Art/Music 2 hours max); PHIL 205, 206; HIST 120, 121, 122, 221, 222; ENGL 204, 207; Any foreign language.	
		Natural Sciences/Mathematics	0-4
		Select courses from:	
		CHEM 101, 102, 103; MATH 121; PHYS 201, 204	
		Religion	4 credits per year
		Social Sciences	8-12
		Select Courses from:	
		ECON 211, 212; HIST 224; SOCI 204, 225	
		45 WPM typing proficiency	
		Electives	
		To meet the minimum of 96 quarter hours	

LAW

Terrell Gottschall, Norman Anderson, Academic Advisers.

There is no specific curriculum for prelaw students. Courses designed to develop skills in oral and written communication and the ability to reason and think analytically are strongly recommended. This would include, for example, course work in history, political science, economics, English and speech.

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 adviser.

MEDICINE

Bob Cushman, Gene Stone, Shirley Anderson, Academic Advisers.

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. 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, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
MATH	121, 122	Precalculus Mathematics I, II	
or			
MATH	117	Accelerated Precalculus	4-8
or			
MATH	181	Analytical Geometry and Calculus I	
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	
		Religion	16

Also recommended are:

BIOL	449	Vertebrate Histology	4
BIOL	466	Immunology	4
CHEM	431	Foundations of Biochemistry	4
MATH	181	Analytical Geometry and Calculus I	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.

*AP and CLEP credits do not meet Loma Linda University requirements for General Chemistry or General Biology.

MEDICAL TECHNOLOGY

Steven Lee, Academic Adviser.

Students interested in entering the field of medical technology should be aware that entry can be made through several different types of programs. There are three common types of programs available through our sister Seventh-day Adventist institutions and in the Pacific Northwest. They are briefly summarized below:

a. Two-plus-two program. In this program entry is made into a combined classroom/clinical program following two years of undergraduate study. A bachelors of science degree is awarded at the completion of the two-year clinical program.

b. Three-plus-one program. In this program entry is made into a clinical program following three years of undergraduate study. A

bachelors degree is awarded at the completion of a one-year clinical program.

c. Four-plus-one program. In this program a student completes a bachelors degree in any major, while taking a core of classes in preparation for the clinical training. Following graduation the student then enters a one-year clinical training program.

Entry into a clinical program is competitive. Applicants are selected on the basis of such qualities as scholarship, integrity, dependability, and motivation for medical technology.

The exact entry requirements into these programs vary. Students interested in this major should contact institutions offering the clinical program early in their university career in order to plan a course schedule. In general the course requirements will include:

BIOL	141, 142, 143	General Biology
BIOL	222	Microbiology
BIOL	466	Immunology
CHEM	141, 142, 143	General Chemistry
CHEM	144, 145, 146	General Chemistry Lab
CHEM	321, 322, 323	Organic Chemistry
CHEM	325, 326	Introduction to Organic Lab

One college-level class in mathematics.

NURSING

See Nursing section of this Bulletin.

NUTRITION AND DIETETICS

Shirley Anderson, Academic Adviser.

Students preparing for the Bachelor of Science degree in nutrition and dietetics should plan to complete 96 quarter hours before entering professional training. The curriculum requirements of Loma Linda University include:

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 Lab	3
CPTR	110	Principles of Computing	2
ENGL	121,122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	
or			3-4
HLTH	220	Human Nutrition	
PEAC		Physical Education Activity Courses	2
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4

SPCH	101	Fundamentals of Speech Communication	4
		Cultural Heritage Select courses from: ART 251; MUHL 124,134; (Applied Art/Music 2 hours max); PHIL 205,206; HIST 120, 121, 122, 221, 222; ENGL 204, 207; Any foreign Language	9
		Mathematics High school algebra and geometry or equivalent with grade of C or better	
		Professional Courses Include HLTH 220 and other approved courses	12
		Religion	4 credits per year
		Social Sciences Select from HIST 224, HIST 454, ANTH 225, PLSC 224	4-8
		Electives To meet the minimum of 96 quarter hours, CPTR 110, SPCH 310, SPCH 443.	

OCCUPATIONAL THERAPY

Curtis Kuhlman, Academic Adviser.

Students preparing for the Bachelor of Science degree in occupational therapy should plan to complete 96 quarter hours with a cumulative grade point average of 3.20 or more before entering the professional training. The curriculum requirements of Loma Linda University include:

ANTH	225	Cultural Anthropology	
or			4
SOCI	236	Privilege and Oppression	
BIOL	121, 122, 123	Anatomy and Physiology	12
CHEM	101	Introductory Chemistry (including Laboratory)	4
CPTR	110	Principles of Computing	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	
or			3-4
HLTH	220	Human Nutrition	
MATH	206	Applied Statistics	4
PHYS	201	Conceptual Physics	3
PHYS	204	Conceptual Physics Laboratory	1
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	
or			4
SOCI	224	Human Development and the Family	
SOCI	204	General Sociology	4
		Select an additional behavioral science or Sociology course.	

SPCH	101	Fundamentals of Speech	4
		Communication	
		Humanities	12
		Select from at least two subject areas: fine arts, foreign language, literature, philosophy, or history.	
		Mathematics	
		High school algebra and geometry or equivalent with grade of C or better.	
		Religion	8
		Physical Education	2
		Electives	
		To meet the minimum of 96 quarter hours. Courses in applied art, general crafts, and behavior science are recommended.	

In addition to the above Loma Linda University requires: A documented minimum of 80 hours of volunteer or employee work experience in an occupational therapy department before acceptance. Occupational Therapist Assistant program also available at Loma Linda University.

OCCUPATIONAL THERAPY ASSISTANT

Curtis Kuhlman, Academic Adviser.

The increased demand for occupational therapists has created a demand for occupational therapy assistants. These are usually two year programs and students receive an Associate Science 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
CPTR	110	Principles of Computing	2
PHYS	201+204	Conceptual Physics + Lab	
or			4
CHEM	101	Introductory Chemistry	
ANTH	225	Cultural Anthropology	
or			4
SOCI	204	General Sociology	
PSYC	130	General Psychology	4
ENGL	121, 122	College Writing I, II	3, 3
ENGL	223	Research Writing	3
SPCH	101	Fundamentals of Speech	4
		Cultural Heritage	4
		Select from ART 251 or MUHL 124 HIST 121 or 222 High school Algebra and Geometry or equivalent with grade of C or better	
		Religion	4
ART	284	Introduction to Pottery I	2
		Electives	
		To meet the minimum of 48 quarter units.	

In addition to the above, Loma Linda requires a documented minimum of 40 hours work/observation experience (volunteer/employee) in an occupational therapy department before acceptance.

OPTOMETRY

Fred Liebrand, Academic Adviser.

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 Mathematics I, II	8
		(may be satisfied by a good secondary mathematics background)	
MATH	181	Analytic Geometry and Calculus I	4
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Laboratory	3
PSYC	130	General Psychology	4

*Precalculus Mathematics should be taken the first year since it is a corequisite for General Chemistry and a prerequisite for General Physics.

Since the requirements for other preoptometry 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	141, 142, 143	General Biology	12
BIOL	121, 122, 123	Anatomy and Physiology	12
BIOL	222	Microbiology	5
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
		A course in statistics	
		An additional psychology course	

Students may also wish to request the booklet Admissions to Schools and Colleges of Optometry, available from the American Optometric Association, 243 N Lindbergh Blvd., St, Louis, MO 63141-9982.

OSTEOPATHY

Shirley Anderson, Academic Adviser.

Schools of osteopathic medicine usually require a degree from an accredited college. The course requirements are essentially the same as for medical schools. (See the medical requirements listed previously in this section of the bulletin.)

PHARMACY

Steven Lee, Academic Adviser.

At least two years of college work are required. 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	222	Microbiology	5
CHEM	141, 142, 143	General Chemistry	9
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
MATH	181, 281	Analytical Geometry and Calculus I, II	8
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Laboratory	3

All pharmaceutical colleges require three years in residency beyond the two years of prepharmacy; some require four years.

PHYSICAL THERAPY

Shirley Anderson, Steven Lee, Academic Advisers.

Entry into the practice of physical therapy is moving towards entry at the doctor's degree level. Most schools require at least *three* years of undergraduate level studies prior to acceptance into the doctoral degree program. Loma Linda University (LLU) offers a doctor of physical therapy with admission after completion of a bachelor's degree. Andrews University (AU) offers a doctor of physical therapy degree with admission after three years of college. Students *must* consult the current bulletin of the school of interest for specific entrance requirements. Common prerequisite courses taken at Walla Walla University to meet the entry requirements of physical therapy schools are:

ANTH	225	Cultural Anthropology	
or			4
SOCI	236	Privilege and Oppression	
BIOL	121, 122, 123	Anatomy and Physiology	12
or			
BIOL	141, 142, 143	General Biology	12
CHEM	141-146	General Chemistry	12
and			
PHYS		Any two quarters of physics	
or			
PHYS	211-216	General Physics	12
and			
CHEM		Any two quarters of chemistry	
CPTR	110	Principles of Computing	2
MATH	117	Accelerated Precalculus	5
or			
MATH	121	Precalculus Mathematics I	4

MATH	206	Applied Statistics	4
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4

PHYSICAL THERAPY ASSISTANT

Steven Lee, Timothy Tiffin, Academic Advisers.

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 (preferred)	
or			12
BIOL	141, 142, 143	General Biology	
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
PHYS	201	Conceptual Physics	3
PHYS	204	Conceptual Physics Laboratory	1
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
SPCH	101	Fundamentals of Speech	4
		Humanities Elective:	4
		Select from fine arts, foreign language, literature, philosophy	
		Mathematics	
		(High school algebra and geometry with grade of C or better)	
		Physical Education or Health	2
		Religion	4
		Electives	
		To meet minimum of 48 quarter hours	

A minimum of 80 hours of documented volunteer/work experience, with a Physical Therapist.

PHYSICIAN ASSISTANT

Kyle Craig, Academic Adviser.

There is a wide variation in the prerequisites for entrance into a Physician Assistant program. A minimum of 3.0 G.P.A. is usually required for science courses. A bachelor degree is required for admittance into many programs. Usually a minimum of 1,000 hours of clinical experience involving patient contact is also required. Physician Assistant programs may lead to a Bachelor of Science (B.S.) or to a Master of Science (M.S.)

Requirements may include the following courses; however students should request information about **current** admission requirements from the professional school they plan to attend.

BIOL	141, 142, 143	General Biology	12
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
CPTR	110	Principles of Computing	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	217	First Aid	2
HLTH	220	Human Nutrition	4
MATH	121, 122	Precalculus Mathematics I, II	8
MATH	206	Applied Statistics	4
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
SOCI	204	General Sociology	4
SPCH	101	Fundamentals of Speech Communication	4

PUBLIC HEALTH

Shirley Anderson, Academic Adviser.

Since the field of public health includes such a wide variety of career disciplines, the training opportunities offered by Schools of Public Health present a striking array of distinctly different program tracks.

Students preparing to enter graduate professional programs in public health should realize that the various career options require different types of preparation, and that they have a significant advantage if they anticipate prerequisite differences early. While no particular group of prerequisites can be considered constant for all program tracks, students will find that certain basic public health elements are fundamental to all. Therefore, the applicant who has included in his undergraduate preparation courses in general statistics, epidemiology, public health administration, environmental health, and behavioral science may benefit from advanced standing and/or course waivers for these requirements once accepted into the graduate program.

RADIOLOGICAL TECHNOLOGY

Curtis Kuhlman, Academic Adviser.

The minimum requirement for admission to the study of radiological technology is 42 quarter hours. The following courses are to be included for the Associate of Science degree from Loma Linda University:

BIOL	121, 122, 123	Anatomy and Physiology	12
CPTR	110	Principles of Computing	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
NRSG	234	Medical Terminology	2
PHYS	201, 202	Conceptual Physics	6
PHYS	204, 205	Conceptual Physics Laboratory	2
PSYC	130	General Psychology	
or			4
SOCI	204	General Sociology	
		Math (two years of high school math)	
		Religion	4
SPCH	101	Fundamentals of Speech Communication	4

In addition to the basic courses listed above, the following elective courses are highly recommended.

An introductory computer course
An introductory photography course
Keyboarding

A 12 hour minimum work/observation experience (volunteer/employee) in a radiology department required for LLU.

For those students planning for further academic work, a B.S. degree requires 16 units of humanities and 12-16 units of social sciences. 12-16 units science/mathematics, health education (HLTH 110 or HLTH 220), 2 P.E. activity courses and 8 units of religion. Other clinical specialties require General Chemistry, and most highly recommend General Physics. Courses with grade below C do not count on this program.

RESPIRATORY THERAPY

Curtis Kuhlman, Academic Adviser.

The minimum requirement for admission to the study of respiratory therapy is 48 quarter hours. The following courses are to be included for the Associate of Science degree from Loma Linda University:

ANTH	225	Cultural Anthropology	
or			4
SOCI	236	Privilege and Oppression	
BIOL	141, 142, 143	General Biology	
or			12
BIOL	121, 122, 123	Anatomy and Physiology	
BIOL	222	Microbiology	5
CHEM	101, 102	Introductory Chemistry	8
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
		High School Physics	
or			
PHYS	201, 202	Conceptual Physics	
and			8
PHYS	204, 205	Conceptual Physics Laboratory	
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SOCI	225	Marriage and Family Life	2
		(Select additional courses from PSYC 215, ECON 211, and SOCI.)	
		Math (high school algebra and geometry with C grade or better.)	
		Religion	4
		Electives	
		To meet the minimum of 48 quarter hours.	
		(Speech is highly recommended.)	

The ACT or SAT examination is required for students entering Loma Linda University.

Bachelor of Science
After completing an Associate in Science degree in respiratory therapy or the equivalent, the student may continue studies toward the Bachelor of Science degree, completing a computer course and the general studies requirement of 9-13 units communication, 16-20 units cultural heritage including ANTH 225, 12-16 units social sciences, 12-16 units science/math, health education + 2 PE activity courses, and 8 quarter units religion at LLU.

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

Deborah Silva, Academic Adviser.

The requirements listed below apply to Loma Linda University program. Because the basic requirements for entrance into Speech-Language Pathology and Audiology may be different, the student should confer with the school of their choice.

ENGL	121, 122	College Writing I, II	3, 3
ENGL	223	Research Writing	3
HLTH	110	Wellness for Living	3
or			
HLTH	220	Human Nutrition	4
SPCH	101	Fundamentals of Speech	4
BIOL	121, 122, 123	Anatomy and Physiology (recommended)	12
PHYS	201+204	Conceptual Physics (recommended)	3, 1
	Select additional from BIOL, PHYS, MATH, CHEM		4
MATH		(2 years of high school math with a grade of C or higher or MDEV 001, MDEV 003 (required/no credit)	
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
ANTH	225	Cultural Anthropology	4
	(one of these is required, ANTH 225 or SOCI 236)		
SOCI	236	Privilege and Oppression	4
PEAC		Two activity courses	1,1
Humanities		Choose from two areas: ART 251, MUHL 124, 134 (Applied Art/Mus 2 hrs max), any ENGL Lit, PHIL, HIST, Foreign Language courses	4, 4, 4
Religion		Any religion course 4 credits per year	4-8
Electives:		To meet minimum total requirements of 6 quarter units	

Before transferring to Loma Linda University or another school, the student should plan to complete speech-language-pathology-related courses on this campus. They include:

SPCH	107	*Voice and Articulation	4
SPPA	210	+Survey of Speech-Language Pathology and Audiology	4

*These courses may help fulfill elective speech pathology hours.

+Required

Please note that C minus (C-) grades are not transferable for credit.

VETERINARY SCIENCE

Jim Nestler, Academic Adviser.

The requirements below apply to the Washington-Oregon-Idaho (WOI) 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.

Requirements:

BIOL	141, 142, 143	General Biology	12
BIOL	250	Biostatistics	4
BIOL	393	Genetics	4
CHEM	141, 142, 143	General Chemistry	12
CHEM	144, 145, 146	General Chemistry Laboratory	3
CHEM	321, 322, 323	Organic Chemistry	11
CHEM	325, 326	Introduction to Organic Laboratory	2
CHEM	431, 432	Foundations of Biochemistry	4, 4
CHEM	436	Biochemistry Laboratory	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
MATH	121, 122	Precalculus Mathematics I, II	8
PHYS	211, 212, 213	General Physics	9
PHYS	214, 215, 216	General Physics Laboratory	3
SPCH	101	Fundamentals of Speech Communication	4
		Humanities and Social Studies	15-20

Recommended Courses:

Electives highly recommended by the WOI Regional Program include:

BIOL	222	Microbiology	5
BIOL	435	Developmental Biology	4
BIOL	464	Animal Physiology	4
CPTR	110	Principles of Computing	2
Total hours required (electives additional)			**90**

Nonacademic Requirements:

Graduate Record Examination (General Test)

Veterinary Medical Exposure and Animal Experience

Applicants must have some 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

Pamela Cress, Dean; Susan Smith, B.S.W. Director; Cheris Current, Janet Ockerman, Helo Oidjarv, Wayne Pollard, Emily Tillotson.

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 practicum 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 requirement for the Bachelor of Social Work, students must be accepted into candidacy in the junior year to continue in the program. Criteria for acceptance include a minimum overall grade point average of 2.5 with a minimum grade point average of 3.0 in core requirements.

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 (85 quarter hours) in the areas of social work, sociology, and psychology, and cognates (12 quarter hours) in economics, human biology, and political science. The core requirements include 12 hours of field practicum the senior year, which involves 420 clock hours in a supervised professional social work practice setting. In addition, SOWK 495, Colloquium, is required of all junior and senior social work majors while in residence. Senior students are required to take the School of Social Work and Sociology comprehensive examination.

Core Requirements:

PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SOCI	236	Privilege and Oppression	4
SOCI	451	Research Methods	4
SOCI	452, 453	Research Practicum I, II	2
SOWK	234	Current Social Problems	4

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	Structural History of Social Welfare	4
SOWK	350	Field Practicum Orientation	1
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 Practicum	12
SOWK	495	*Colloquium	0
		**Electives	14
		Psychology	0-8
		Social Work	3-11
		Anthropology, Corrections, Sociology	3-11
		Environmental Studies	0-4
			85

*Six colloquia required.

**Electives may be chosen from classes with the following prefixes: SOWK, SOCI, CORR, ANTH. Electives may also be chosen from PSYC 247, 344, 370, 373, 447, 466, 492, ENVI 151, or ENVI 385.

Cognates:

ECON	204	Fundamentals of Economics	4
PLSC	224	American Government	4
Choose one of the following:			4
BIOL	105	Contemporary Biology	
BIOL	121	Anatomy and Physiology	
BIOL	141	General Biology	

SOCIOLOGY MAJOR (Bachelor of Arts)

A student majoring in sociology must complete 55 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 section only.

Major Requirements:

SOCI	204	General Sociology	4
SOCI	234	Current Social Problems	4
SOCI	236	Privilege and Oppression	4
SOCI	327	Social Problems Seminar	3

SOCI	345	Sociology of Communities	4
SOCI	435	Social Gerontology	3
SOCI	451	Research Methods	4
SOCI	452, 453	Research Practicum I, II	2
SOCI	496	Seminar	2
SOWK	224	Human Development and the Family	4
		*Electives	21
			55

*Electives may be chosen from the following courses: All SOCI prefixes, ANTH 225, CORR 285, CORR 385, CORR 387, SOWK 266 and SOWK 465.

Approval of sociology adviser required.

Cognates:

ECON	204	Fundamentals of Economics	4
ENVI	151	Environmental Principles	
	or		4
ENVI	385	Environmental Stewardship	
PLSC	224	American Government	4
	(MATH 206, Applied Statistics, is highly recommended.)		

SOCIAL WELFARE MINOR

A student minoring in social welfare must complete 30 quarter hours.

SOCI	204	General Sociology	4
SOCI	236	Privilege and Oppression	4
SOWK	234	Current Social Problems	4
SOWK	264	Introduction to Social Work	4
SOWK	266	Structural History of Social Welfare	4
SOWK	375	Policy and Advocacy Practice for Social Justice	3
		*Electives	7
			30

*Electives must be chosen in consultation with the academic adviser from the following prefixes: SOWK, SOCI, ANTH, CORR.

SOCIOLOGY MINOR

A student minoring in sociology must complete 30 quarter hours:

SOCI	204	General Sociology	4
SOCI	234	Current Social Problems	4
SOCI	236	Privilege and Oppression	4
SOCI	327	Social Problems Seminar	3
SOCI	345	Sociology of Communities	4
		*Electives	11
			30

*Electives must be chosen in consultation with the academic adviser from the following prefixes: SOCI, SOWK, ANTH, CORR.

ANTHROPOLOGY COURSES (ANTH)

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 field work is embedded in the course.

CORRECTIONS, LAW ENFORCEMENT AND CRIMINAL JUSTICE (CORR)

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 only.

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 only.

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 only.

SOCIAL WORK COURSES (SOWK)

SOWK 224 HUMAN DEVELOPMENT AND THE FAMILY 4

Study of the individual as seen in the context of the family; explores the interrelation of biological, psychological, and sociocultural systems and their effect on human development and behavior; covers the complete life cycle of the growth of an individual and current theories concerning each stage of the life cycle as it applies to the modern American family as well as families of other cultures. Prerequisites: SOCI 204. Recommended prerequisite: PSYC 130.

SOWK 234 CURRENT SOCIAL PROBLEMS (OR SOCI 234) 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, 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.

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 STRUCTURAL HISTORY 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 systems of privilege, oppression, and discrimination. Prerequisite or corequisite: SOWK 264.

SOWK 350 FIELD PRACTICUM ORIENTATION 1

A field practicum orientation seminar intended to make students aware of agency possibilities, application and evaluation procedures, contracts, and the field instruction learning process. Prerequisites: SOWK 264, 371; Prerequisite or Corequisite: SOWK 372, 373.

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. 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. 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. 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 intervention models specifically designed for work with couples and families, both historical and contemporary. Students will develop practice skills through lab setting activities, role play, supervision and observation. Prerequisite: SOWK 372.

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 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 435 SOCIAL GERONTOLOGY (OR SOCI 435) 3

Provides understanding of the field of gerontology, including historical review of US and world-wide population trends. Specific aspects of aging and impacts on society are explored in-depth. Practitioner responses in human services and health care are examined. Prerequisite: SOCI 204. Offered odd years only.

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 375. Prerequisite or corequisite: SOWK 373.

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 477 INTRODUCTION TO ALCOHOLISM AND ADDICTION TREATMENT **3**

A comprehensive survey covering the basic aspects of alcohol, alcoholism, prevention and intervention, rehabilitation and treatment. Alcoholism and other addictions are studied as disease processes. Recommended prerequisite: HLTH 208.

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 adviser. Written report of research/project is required describing the project, the theoretical base, the learning experience and the conclusion. Prerequisites: Social Work Major~ SOWK 264, SOWK 371; Social Welfare Minor~ SOWK 264, SOWK 266.

SOWK 490 FIELD PRACTICUM **2-12; 12**

Training is completed under a professional social worker in a social service agency. Field instruction is offered in various settings such as: medical, mental health, school, corrections, child welfare, and community organization. Placement may be taken in one quarter (block) or concurrently with course work over two or more consecutive quarters. Twelve quarter credits (420 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 350, 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.

SOWK 495 COLLOQUIUM **0**

Lecture series designed to expose students to contemporary social workers and to assist them in their professional development. Required of all social work juniors and seniors while in residence. Graded S or NC.

GRADUATE SOCIAL WORK COURSES

Please see the *Graduate Bulletin* for a listing of Social Work graduate courses.

SOCIOLOGY COURSES (SOCI)

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 (OR SOWK 234) 4

The 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, 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.

SOCI 238 HEALTH AND CULTURE 3

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. Credit will not be allowed for both SOCI 238 and SOCI 438. Prerequisite: SOCI 204. Offered even years only.

SOCI 327 SOCIAL PROBLEMS SEMINAR: 3; 9

An in-depth seminar that focuses on a particular social problem. Specific subjects studied will vary from quarter to quarter on issues such as poverty, gender, social class, the environment, economic opportunity, human rights, and social justice. May be repeated for credit when topics vary. Prerequisites: SOCI 204, ANTH 225, or permission of instructor.

SOCI 345 SOCIOLOGY OF COMMUNITIES 4

Study of the social structure and interaction patterns of communities; emphasizes the history of community development, urbanization, and its effects on society. Introduction to demographic theory in both a national and international context; geopolitical trends and social/political implications of human populations. Gives special interest to populations at risk, racial and ethnic groups, persons with disabilities, women and children, and the elderly. Prerequisites: ANTH 255 or SOCI 204; ENVI 151 or permission of instructor. Offered odd years only.

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

This course 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 only.

SOCI 435 SOCIAL GERONTOLOGY (OR SOWK 435) 3

Provides understanding of the field of gerontology, including historical review of US and world-wide population trends. Specific aspects of aging and impacts on society are explored in-depth. Practitioner responses in human services and health care are examined. Prerequisite: SOCI 204. Offered odd years only.

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. Credit will not be allowed for both SOCI 238 and SOCI 438. Prerequisite: SOCI 204. Offered even years only.

SOCI 451 RESEARCH METHODS 4

Introduction to the principles of research design; data collection through surveys and other methods; scaling, sampling; computer assisted statistical analysis. Statistics highly recommended. Laboratory required.

SOCI 452, 453 RESEARCH PRACTICUM I, II 1, 1

Directed design and execution of an empirical research project over a two quarter period. Prerequisites: SOCI 451 for SOCI 452, SOCI 452 for SOCI 453.

SOCI 494 COOPERATIVE EDUCATION 2

Individual contract arrangement involving students, faculty, and cooperating institutions to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisites: SOCI 204, SOWK 224, SOCI 236; Pre or corequisite: SOCI 324. Two quarter hours are required during senior year (30 clock hours per quarter hour = 60 hours).

SOCI 496 SEMINAR 1-3, 3

In-depth individual examination of expected learning in sociology, including historical and contemporary knowledge. Student will demonstrate acquisition of expected competencies in both general and specific areas within the degree. Prerequisite: Permission of instructor.

TECHNOLOGY

Linda Felipez, Chair; Brent Bergherm, Shawn Dietrich, Loury Duffy, Robert Holm, R.W. Lane.

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 experiential laboratory experiences. Students may choose from an array of four-year Bachelor of Science or two-year Associate of Science degree study 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 people 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 Communications. 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 81 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 (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	466	Body Electronics and Computer Systems	3
AUTO	473	Alternative Fuels	3
AUTO	480	Advanced Practicum (automotive)	2
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
TECH	204	Fundamentals of Electronics	4
TECH	235	Introduction to Materials and Processes	2
TECH	236	Introduction to Plastics	2
TECH	241	Fabrication and Machining of Metals I	2
TECH	321	Technology and Society	4
TECH	335	Computer Applications in Technology	3
TECH	380	Technical Space Utilization	3
TECH	499	Senior Project	1
		*Electives (4 credits must be within the Technology Department)	8
			81

* Electives must be chosen from AVIA, TECH, DRFT, CPTR, FINA, GBUS, ECON, ACCT, MKTG, MGMT, GRPH, and/or PHTO in consultation with and approved by the academic adviser assigned by the department chair.

Cognates:

ACCT	201	Principles of Accounting	4
CPTR	110	Principles of Computing	2
MGMT	275	Management of Small Business	
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 93 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:

AVIA	124	History of Aviation	2
AVIA	141	Private Pilot Lectures	4
AVIA	142	Private Pilot Flight Training	3
AVIA	143	Advanced Private Flight Training	3
AVIA	152	Cross-Country Flight	2
AVIA	234	Meteorology	2
AVIA	256	Principles of Aircraft Maintenance	4
AVIA	261	Instrument Pilot Lectures	4
AVIA	262	Instrument Flight Training	3
AVIA	263	Advanced Instrument Flight Training	3
AVIA	270	Multi-Crew Flight Operations	2
AVIA	325	Flight Performance	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	356	Flight Instructor Training I	3
AVIA	358	Flight Instructor Training II	3
AVIA	455	Crew Resource Management	2
AVIA	458	Instrument Instructor Flight Training	3
AVIA	460	Multi-Engine Instructor Flight Training	2
AVIA	496	Senior Seminar	2
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
TECH	204	Fundamentals of Electronics	4
TECH	235	Introduction to Materials and Processes	2
TECH	236	Introduction to Plastics	2
TECH	241	Fabrication and Machining of Metals I	2
TECH	321	Technology and Society	4
TECH	335	Computer Applications in Technology	3

TECH	380	Technical Space Utilization	3
TECH	499	Senior Project	1
		Electives	4
			93

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

Cognates:

ACCT	201	Principles of Accounting	4
CPTR	110	Principles of Computing	2
GBUS	361	Business Law I	4
MATH	121	Precalculus Mathematics I	4
MGMT	275	Management of Small Business	
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 79 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:

DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
DSGN	315	History of Design	3
GRPH	124	Introduction to Graphics	3
GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
GRPH	262	Computer Illustration	4
GRPH	263	Web Design I	3
GRPH	320	Principles of Print Production	3
GRPH	336	Digital Imaging II	4
GRPH	341	3-D Design I	3
GRPH	345	Designing for Large Format	3
GRPH	355	Advanced Document Design	3
GRPH	365	Web Animation	3
GRPH	366	Multimedia and Special Effects	3
GRPH	370	Fundamentals of Packaging	4
GRPH	386	Graphics Production Planning	3
GRPH	445	Graphics Services	3
GRPH	492	Portfolio Design	2
PHTO	156	Principles of Photography	3
PHTO	256	Digital Photography	3

PHTO	356	Advanced Digital Photography	4
TECH	321	Technology and Society	4
TECH	499	Senior Project	1
		*Electives (selected with adviser)	4
			79

*Electives may be chosen from ART, COMM, GRPH, INFO, JOUR, MKTG, and PHTO in consultation with and approved by the academic adviser assigned by the department chair.

Cognates:

ART	161, 162, 163	Design	9
ART	184	Introduction to Drawing I	2
ART	244, 245, 246	Commercial Art	6
ART	294	Introduction to Printmaking I	2
COMM	235	Introduction to Video	4
COMM	357	Communication Law and Ethics	
	or		4
GBUS	361	Business Law I	
JOUR	245	Media Writing	4
	Select one course from the following:		
	MKTG 381	Principles of Marketing	4
	MKTG 383	Principles of Advertising	4
	MKTG 384	Consumer Behavior	4
SPCH	101	Fundamentals of Speech Communication	4

INDUSTRIAL DESIGN MAJOR (Bachelor of Science)

A student majoring in Industrial Design must complete a minimum of 89 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.

Industrial 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 Industrial Design offers the knowledge and experiences that prepare students to become competitive industrial designers.

Core Requirements:

COMM	357	Communication Law and Ethics	
	or		4
GBUS	361	Business Law I	
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2

DSGN	315	History of Design	3
GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
GRPH	262	Computer Illustration	4
GRPH	341,342,343	3-D Design I, II, III	9
GRPH	366	Multimedia and Special Effects	3
GRPH	370	Fundamentals of Packaging	4
GRPH	492	Portfolio Design	2
INDS	210	Modelmaking Techniques	2
INDS	371, 372, 373	Industrial Design	9
PHTO	156	Principles of Photography	3
TECH	138	Shielded Metal Arc Welding	2
TECH	220	Introduction to Basic Woodworking	2
TECH	223	Introduction to Fine Woodworking	2
TECH	235	Introduction to Materials and Processes	2
TECH	236	Introduction to Plastics	2
TECH	241, 242	Fabrication and Machining of Metals I, II	4
TECH	335	Computer Applications in Technology	3
TECH	499	Senior Project	1
		*Electives	15
			89

*Electives may be chosen from ART, COMM, GRPH, INDS, MKTG, PHTO, SOCI 451, 452, 453, and TECH in consultation with and approved by the academic adviser assigned by the department chair.

Cognates:

Choose one of the following:			3
ART	161, 162, 163	Design	
ART	184	Introduction to Drawing I	2
ART	194	Introduction to Painting I	2
ART	264	Introduction to Sculpture I	2
Choose one of the following:			3
ART	324, 325, 326	History of World Art	
Choose one of the following:			4
MKTG	381	Principles of Marketing	
MKTG	383	Principles of Advertising	
MKTG	384	Consumer Behavior	
PHYS	201, 202	Conceptual Physics	3,3
PHYS	204, 205	Conceptual Physics Laboratory	1,1
SPCH	101	Fundamentals of Speech Communication	4

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 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 of this bulletin.

WEB DESIGN MAJOR (Bachelor of Science)

A student majoring in Web Design must complete a minimum of 81 quarter hours in the major consisting of the core courses and technical requirements. In addition, the student must complete required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin.

Core Requirements:

CPTR	110	Principles of Computing	2
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
DSGN	315	History of Design	3
GRPH	124	Introduction to Graphics	3
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
GRPH	262	Computer Illustration	4
GRPH	263	Web Design I	3
GRPH	336, 337	Digital Imaging II, III	4,4
GRPH	365	Web Animation	3
GRPH	366	Multimedia and Special Effects	3
GRPH	445	Graphics Services	3
GRPH	463	Web Publishing	3
GRPH	480	Advanced Practicum	1
GRPH	492	Portfolio Design	2
INFO	250	Selected from Web Tech Courses	9
PHTO	156	Principles of Photography	
	or		3
PHTO	256	Digital Photography	
PHTO	356	Advanced Digital Photography	4
TECH	321	Technology and Society	4
TECH	499	Senior Project	1
		*Electives	10
			81

*Electives may be chosen from ART, COMM, CPTR, GRPH, INFO, MKTG, and PHTO in consultation with and approved by the academic adviser assigned by the department chair.

Cognates:

Choose one of the following:			3
ART	161, 162, 163	Design	
COMM	235	Introduction to Video	4
COMM	357	Communication Law and Ethics	
	or		4
GBUS	361	Business Law I	
CPTR	141	Introduction to Programming	4
CPTR	235	Web Application Development	4
SPCH	101	Fundamentals of Speech Communication	4

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.

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
DRFT	121	Fundamentals of CAD	2
TECH	204	Fundamentals of Electronics	4
TECH	335	Computer Applications in Technology	3
		*Electives	13
			59

*Electives must be chosen from TECH, PHTO, DRFT, or AVIA in consultation with and approved by the academic adviser.

Cognates:

CPTR	110	Principles of Computing	2

AVIATION TECHNOLOGY (Associate of Science)

A student majoring in Aviation Technology must complete a minimum of 58 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:

AVIA	124	History of Aviation	2
AVIA	141	Private Pilot Lectures	4
AVIA	142	Private Pilot Flight Training	3
AVIA	143	Advanced Private Flight Training	3
AVIA	152	Cross-Country Flight	2
AVIA	234	Meteorology	2
AVIA	256	Principles of Aircraft Maintenance	4
AVIA	261	Instrument Pilot Lectures	4
AVIA	262	Instrument Flight Training	3
AVIA	263	Advanced Instrument Flight Training	3
AVIA	325	Flight Performance	2
AVIA	334	Commercial Pilot Lectures	4
AVIA	335	Commercial Flight Training	3
AVIA	336	Advanced Commercial Flight Training	3
AVIA	355	Aviation Safety	2
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
TECH	321	Technology and Society	4
TECH	335	Computer Applications in Technology	3
		*Electives	3
			58

*Electives must be chosen in consultation with and approved by the academic adviser.

Cognates:

CPTR	110	Principles of Computing	2
TECH	204	Fundamentals of Electronics	4

GRAPHIC COMMUNICATIONS (Associate of Science)

A student majoring in Graphic Communications must complete a minimum of 56 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:

COMM	357	Communication Law and Ethics	
or			4
JOUR	245	Media Writing	
DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
GRPH	124	Introduction to Graphics	3
GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
GRPH	262	Computer Illustration	4
GRPH	263	Web Design I	3
GRPH	280	Practicum	3
GRPH	320	Principles of Print Production	3
GRPH	355	Advanced Document Design	3
GRPH	370	Fundamentals of Packaging	4
PHTO	156	Principles of Photography	3
		*Electives	13
			56

Electives must be chosen in consultation with and approved by the academic adviser.

Cognates:

ART	161, 162, 163	Design (choose one)	3
CPTR	110	Principles of Computing	2

AVIATION MINOR

A student minoring in Aviation must complete 30 quarter hours:

AVIA	124	History of Aviation	2
AVIA	141	Private Pilot Lectures	4
AVIA	142	Private Pilot Flight Training	3
AVIA	143	Advanced Private Flight Training	3
AVIA	234	Meteorology	2
		*Electives (3 must be upper-division)	16
			30

*Approval of aviation adviser required. Electives must be chosen in consultation with and approved by the academic adviser.

GRAPHIC ARTS MINOR

A student minoring in Graphic Arts must complete 30 quarter hours:

GRPH	135	Introduction to Digital Technology	1
GRPH	235	Digital Imaging I	4
GRPH	255	Graphic Design and Layout	4
GRPH	263	Web Design I	3
GRPH	262	Computer Illustration	4
GRPH	320	Principles of Print Production	3
GRPH	370	Fundamentals of Packaging	4
PHTO	156	Principles of Photography	3
		*Electives	4
		(Must have GRPH or PHTO prefix)	
			30

*Approval of graphics technology adviser required.

PHOTOGRAPHY MINOR

A student minoring in Photography must complete 36 quarter hours:

ART	161, or 162, or 163	Design	3
ART	312	Aesthetics and Photography	4
COMM	235	Introduction to Video	
or			4
GRPH	255	Graphic Design and Layout	
GRPH	235	Digital Imaging I	4
GRPH	336	Digital Imaging II	4
PHTO	156	Principles of Photography	3
PHTO	256	Digital Photography	3
PHTO	356	Advanced Digital Photography	4
PHTO	358	Photo Assignments	3
		*Electives	4
			36

*Electives must be chosen in consultation with and approved by the academic adviser.

TECHNOLOGY MINOR

A student minoring in Technology must complete 30 quarter hours:

DRFT	120	Perspective Drawing	2
DRFT	121	Fundamentals of CAD	2
TECH	235, 236	Materials and Processes	4
		*Electives (3 must be upper-division)	22
			30

*Approval of technology adviser required.

WEB DESIGN AND DEVELOPMENT MINOR

A student minoring in Web Design and Development must complete 33 quarter hours:

GRPH	235	Digital Imaging I	4
GRPH	262	Computer Illustration	4
GRPH	263	Web Design I	3
GRPH	273	Web Design II	3
GRPH	365	Web Animation	3
GRPH	463	Web Publishing	3
		*Electives	13
			33

*Electives must be chosen from courses with GRPH, PHTO, CPTR, COMM, and INFO prefixes and approved by the graphics adviser.

ASE VALIDATION COURSES (AUTO)

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 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 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 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.

AUTOMOTIVE COURSES (AUTO)

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. Does not apply toward an Automotive Technology major. 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: Automotive Technology major or permission of instructor.

AUTO 135 INTERNAL COMBUSTION ENGINE LABORATORY **1-2; 2**

Laboratory study of engine components through disassembly, inspection, measurement, servicing, and reassembly of engines. Corequisite: AUTO 134. (Course fees apply.)

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 **1-2; 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. Prerequisite: ELCT 241 or equivalent.

AUTO 157 ELECTRICAL SYSTEMS LABORATORY **1-2; 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 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. Prerequisites: ELCT 241. 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 LABORATORY **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. AUTO 286 recommended. Offered even years. (Course fees apply.)

AUTO 414 ADVANCED ENGINE PERFORMANCE **3**

Advanced study of automotive engine management systems theory and application. Specific emphasis on solving complicated driveability 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 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 only. (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 494 COOPERATIVE EDUCATION **0-4**

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 done at the end of the cooperative education experience. Prerequisite: Approval by department.

AVIATION COURSES (AVIA)

LECTURE COURSES (AVIA)

AVIA 124 HISTORY OF AVIATION **2**

Study of aviation history from mythology to present day. The student will also gain a further understanding of aviation careers and opportunities. Offered odd years only.

AVIA 140 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 141 PRIVATE PILOT LECTURES **4**

Study of basic concepts of aircraft performance, navigation, principles of flight, and meteorology; includes interpretation, application, and use of Federal Aviation Regulations and aviation publications. Prepares the student to pass the FAA Private Pilot Knowledge Test.

AVIA 234 METEOROLOGY **2**

Study of the atmosphere, winds, moisture, temperature, air masses, fronts, and weather forecasting with emphasis on aviation weather. Offered odd years only.

AVIA 256 PRINCIPLES OF AIRCRAFT MAINTENANCE **4**

Study of aircraft systems to include applicable federal aviation regulations. Offered even years only.

AVIA 261 INSTRUMENT PILOT LECTURES **4**

Study of aircraft flight instruments, instrument interpretation, instrument publications, regulations and procedures. Prepares student to pass the FAA Instrument Knowledge Test.

AVIA 270 MULTI-CREW FLIGHT OPERATIONS **2**

Study and application of crew communications, decision-making, leadership, flying and non-flying pilot responsibilities, and situational awareness. Prerequisite: AVIA 262 or permission of instructor. Offered even years only. (Course fees apply.)

AVIA 334 COMMERCIAL PILOT LECTURE **4**

Study of advanced aircraft systems, advanced aerodynamics, commercial operations, commercial pilot maneuvers, and the commercial environment. Prepares student to pass the FAA Commercial Knowledge Test. Prerequisite: AVIA 256 or permission of instructor.

AVIA 355 AVIATION SAFETY **2**

Study and application of pilot decision making, risk management, and handling in-flight emergencies in both single and multi-engine aircraft. Prerequisites: AVIA 270 and AVIA 340, or permission of instructor. Offered even years only. (Course fees apply.)

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 (Course fees apply.)

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.)

FLIGHT COURSES (AVIA)

Upon registering for a flight class, students are required to meet with an Aviation Director for inclusion in the flight schedule.

AVIA 142 PRIVATE PILOT FLIGHT TRAINING **3**

Pre-solo aeronautical knowledge and flight training in preparation for solo flight. Corequisite: AVIA 141 or permission of instructor.

AVIA 143 ADVANCED PRIVATE FLIGHT TRAINING **3**

Flight instruction in advanced takeoffs and landings, night operations, and cross country flight operations. Includes a review of flight maneuvers and knowledge necessary to pass the Private Pilot Practical Test. Prerequisite: AVIA 142.

AVIA 152 CROSS-COUNTRY FLIGHT **2**

Directed cross-country flight experience to meet the FAA flight requirements for the instrument rating. Prerequisite: AVIA 143.

AVIA 262 INSTRUMENT FLIGHT TRAINING **3**

Flight instruction in instrument departures, attitude instrument flying, holding procedures, instrument navigation, and enroute navigation.

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. Prerequisite: AVIA 262, or permission of instructor.

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.

AVIA 325 FLIGHT PERFORMANCE **2**

Instructor directed flight experience to meet FAA flight requirements for the Commercial Certificate.

AVIA 335 COMMERCIAL FLIGHT TRAINING **3**

Flight instruction in advanced aircraft including: systems training, complex aircraft familiarization, emergency procedures, instrument flight operations, cross-country flight, and night operations.

AVIA 336 ADVANCED COMMERCIAL FLIGHT TRAINING **3**

Flight instruction in advanced takeoffs and landings, advanced airwork, and emergency procedures. Includes training of flight maneuvers and knowledge necessary to pass the Commercial Pilot Practical Test. Prerequisite: AVIA 335.

AVIA 340 MULTI-ENGINE FLIGHT TRAINING **3**

Flight instruction in multi-engine aircraft including: takeoffs and landings, airwork, single-engine operations, and emergency procedures. Includes training of flight maneuvers and knowledge necessary to pass the Multi-Engine Rating Practical Test.

AVIA 356 FLIGHT INSTRUCTOR TRAINING I **3**

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.

AVIA 358 FLIGHT INSTRUCTOR TRAINING II **3**

Flight instruction in preparation for the Certified Flight Instructor Practical Test. This includes training in primary and advanced flight instruction techniques.

AVIA 458 INSTRUMENT INSTRUCTOR FLIGHT TRAINING **3**

Flight instruction in preparation for the Instrument Flight Instructor Practical Test.

AVIA 460 MULTI-ENGINE INSTRUCTOR FLIGHT TRAINING **2**

Flight instruction in preparation for the Multi-Engine Flight Instructor Practical Test.

AVIA 465 TRANSPORT PILOT FLIGHT TRAINING **3**

Provides the necessary flight and ground instruction in a multi-engine airplane to meet the proficiency requirements of the FAA Airline Transport Pilot Practical Test. Flight instruction includes instrument flying, with concentrated practice on approaches, emergency procedures and cross-country flight. Offered as needed.

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.

AVIA 494 COOPERATIVE EDUCATION **0-4**

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 done at the end of the cooperative education experience. Prerequisite: Approval by department.

DRAFTING COURSES (DRFT)

DRFT 120 PERSPECTIVE DRAWING **2**

Introduction to perspective drawing and design with emphasis on sketching and ideation, visualization, principles and elements of design and analysis. Specific design applications to each technological area. One lecture and three laboratory hours per week.

DRFT 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.)

DRFT 226 ARCHITECTURAL DRAWING **3**

Study of the fundamentals of designing and drawing house plans including architectural drafting standards, area planning, floor plans, elevations, sections, schedules, and specifications.

DESIGN COURSES (DSGN)

DSGN 315 HISTORY OF DESIGN **3**

A chronological study of the important periods in the history of design. Includes the history of industrial design, graphic design and new media. Consideration will be given to the period developments. Brings together cultural, business, and technical perspectives.

GRAPHICS COURSES (GRPH)

GRPH 124 INTRODUCTION TO GRAPHICS **3**

Overview of graphic communication systems including historical perspectives, theory and practice. Examines the evolution of wide and varied occupations within graphic arts.

GRPH 125 INTRODUCTION TO 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. (Course fees apply.)

GRPH 135 INTRODUCTION TO DIGITAL TECHNOLOGY **1**

Fundamentals of Macintosh computer operation. Includes an introduction to the operating system, computer orientation and application, and basic operation. Prerequisite: Freshman class standing or permission of instructor.

GRPH 235 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. Prerequisite: GRPH 135 or permission of instructor. (Course fees apply.)

GRPH 255 GRAPHIC DESIGN AND LAYOUT **4**

Study and application of visual communications fundamentals. Includes survey of typographic essentials, color theory, image acquisition, repurposing, and file management. Stresses development of print production workflow from concept through execution and output. Prerequisite: GRPH 135 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. Prerequisite: GRPH 135. (Course fees apply.)

GRPH 263 WEB DESIGN I **3**

Introduction to web design, usability theory and styles-based development. Includes application of visual editor to combine type and graphics for development of a personal web site. Prerequisites: GRPH 135 and GRPH 235 or permission of instructor. (Course fees apply.)

GRPH 273 WEB DESIGN II **3**

Intermediate web design, stressing expanded knowledge of styles-based development by completing a website design or redesign. Introduction to back-end and interactive technologies, content management systems and multivariate testing. Prerequisite: GRPH 263. (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 320 PRINCIPLES OF PRINT PRODUCTION **3**

Examination of a variety of contemporary printing methods and processes. Activities include exploration of graphics terminology, key concepts and work flow in pre-press, printing and finishing. Prerequisite: GRPH 255. Offered even years only. (Course fees apply.)

GRPH 336 DIGITAL IMAGING II **4**

Creation and manipulation of raster images in a production setting. Also includes color correction, advanced image acquisition, and integration of styled type. Prerequisite: GRPH 235. Offered odd years only. (Course fees apply.)

GRPH 337 DIGITAL IMAGING III **4**

Advanced study and application of image editing techniques for cross-media. Stresses efficient production techniques and creative problem-solving. Prerequisite: GRPH 336. Offered even years only. (Course fees apply.)

GRPH 341 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. Prerequisites: DRFT 120, GRPH 235 or permission of instructor if co-requisite. (Course fees apply)

GRPH 342 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: GRPH 341. (Course fees apply.)

GRPH 343 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 235, 341, 342 and others, to make photo realistic rendered images, appropriate for printed and virtual presentations. Prerequisite: GRPH342. (Course fees apply.)

GRPH 345 DESIGNING FOR LARGE FORMAT **3**

Examination of the birth and evolution of large format printing. Creative experience and exploration of design issues specific to the large image: Device calibration; inks; output media; lamination; and mounting. Offered odd years only. Prerequisites: GRPH 235 and GRPH 255. (Course fees apply.)

GRPH 355 ADVANCED DOCUMENT DESIGN 3

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 only. (Course fees apply.)

GRPH 365 WEB ANIMATION **3**

Methods and theory of 2-D animation concentrating on, but not limited to, web applications. Projects range from stop-frame and simple cartoon animation to design and application of banner advertising for the web. Prerequisite: GRPH 262. (Course fees apply.)

GRPH 366 MULTIMEDIA AND SPECIAL EFFECTS **3**

Examination and practice of DVD design and production. Topics include content development, typography, editing, streaming video, and disc jacket graphic design and production. Prerequisite: GRPH 235. (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 386 GRAPHICS PRODUCTION PLANNING **3**

Application and analysis of print project management workflow–from bid to completion. Includes scheduling, an in-depth glossary, survey of paper and ink, cost analysis, finishing processes and fulfillment. Offered even years only Prerequisites: GRPH 235 and GRPH 320. (Course fees apply.)

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 370, and GRPH 262. (Course fees apply.)

GRPH 463 WEB PUBLISHING **3**

Design and ethics of social network publishing, including underlying professional principles and terminology of web publishing. Application of knowledge for effective communication in the digital media world. Prerequisite: GRPH 263. (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.

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 494 COOPERATIVE EDUCATION **0-4**

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 done at the end of the cooperative education experience. Prerequisite: Approval by department.

INDUSTRIAL DESIGN COURSES (INDS)

INDS 210 MODELMAKING TECHNIQUES **2**

In a studio and laboratory environment, experience with a variety of hand tools, materials and techniques to develop scale models. Construction of study models using appropriate materials. Use of models for evaluation and communication of product design concepts. Prerequisite or co-requisite: TECH 220 or permission of instructor. (Course fees apply.)

INDS 371, 372, 373 INDUSTRIAL DESIGN **3, 3, 3**

Application of a number of problem-solving techniques and procedures related to industrial design. Students are encouraged to use innovative techniques to achieve workable solutions to selected design problems for team and special projects. Prerequisite: TECH 220 or permission of instructor. (Course fees apply.)

INDS 425, 427 SENIOR STUDIO I, II **3, 3**

Capstone Industrial Design (ID) experience to prepare the student for TECH 499, Senior Project. Each student is required to conduct an approved project with appropriate ID 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: INDS 371, 372, 373, and senior standing in ID or permission of instructor. (Course fees apply.)

PHOTOGRAPHY COURSES (PHTO)

PHTO 156 PRINCIPLES OF PHOTOGRAPHY **3**

Introduction to universal, creative photographic concepts, expressed through black and white film, manual processing and enlarging. Emphasizes control of natural light and composition to match pre-visualized image. Operational 35mm SLR camera required. Some rental cameras available. Two lectures and one laboratory per week. (Course fees apply.)

PHTO 256 DIGITAL PHOTOGRAPHY **3**

Various practices of shooting quality with a digital camera. Digital camera selection and use, processing RAW images, editing images for storying and retrieval, using images in different media and doing 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. DSLR camera required. (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 only. (Course feels apply.)

PHTO 356 ADVANCED DIGITAL 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 156 or GRPH 235. Offered even years only. (Course fees apply.)

PHTO 358 PHOTO 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 355 or equivalent. Offered odd years only.

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. Lab fees apply.

TECHNOLOGY COURSES (TECH)

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 only. (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 222 WOODWORKING **2**

Students will learn skills and techniques for designing and building individual wood projects. Laboratory work will include defining the project design, specing, and procuring materials, and building the project. Prerequisite: TECH 220. (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 235 INTRODUCTION TO MATERIALS AND PROCESSES **2**

The internal organizational structure, function and operation of a variety of manufacturing industries. Laboratory experiences focus on commonly shared processes in raw materials and production through field trip experiences of local resources.

TECH 236 INTRODUCTION TO PLASTICS **2**

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: DRFT 120 or permission of instructor. (Course fees apply.)

TECH 241 FABRICATION AND MACHINING OF METALS I **2**

Theory and practice in metal operations, including safety practices, creation, construction, measurement, print reading, engine lathe operations, turning, and threading processes. (Course fees apply.)

TECH 242 FABRICATION AND MACHINING OF METALS II **2**

Layout projects, develop improvements using measurement tools, drilling and milling operations. (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 280 PRACTICUM **1-6; 6**

Laboratory work chosen in counsel with the supervising laboratory instructor. Six credits maximum. 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 and completion of ENGL223.

TECH 335 COMPUTER APPLICATIONS IN TECHNOLOGY **3**

A study of the applications of computers and microprocessor board controllers in industrial production and process control. (Course fees apply.)

TECH 343 FABRICATION AND MACHINING OF METALS III **2**

Advanced design and development of creation and construction of metals. Use of horizontal and vertical mills, exploration of CNC programming for part design and development. Prerequisite: TECH 335. (Course fees apply.)

TECH 380 TECHNICAL SPACE UTILIZATION **3**

The study of planning and organization of technical facilities. Includes efficiency in traffic flow, material and equipment movement, production sequencing, space usage, service systems, storage, building structure, and environment control. (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 TECHNOLOGY TO CHILDREN **3**

Study of technology, as applied to the elementary grades, covering the broad areas of manufacturing, transportation, construction, and communication. Emphasis on methods of application, materials and processes. 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 494 COOPERATIVE EDUCATION **0-4**

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 done at the end of the cooperative education experience. Prerequisite: Approval by department.

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 adviser and approved by the department faculty. A presentation on completed work may be required.

SCHOOL OF THEOLOGY

David Thomas, Dean; Darold Bigger, Carl Cosaert, Paul Dybdahl, Pedrito Maynard-Reid, Zdravko Stefanovic, Alden Thompson.

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 being advanced to candidacy. This process typically takes place in the Junior year. Candidates for advancement are evaluated on the basis of spiritual qualities and interest, cultural refinement, social abilities, interpersonal skills, ministry skills, and scholarship. The process of advancement is more fully described in a separate handbook obtainable from the School of Theology. Those who achieve candidacy 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. Theology and Biblical Languages majors must also pass a Greek and Hebrew proficiency examination with a minimum score of 70 percent. These exams are typically given early in the spring quarter of each year.

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.

Major Requirements:

RELB	104	The Ministry of Jesus	4
RELB	111	Messages of the Old Testament	4
RELB	231	Exploring the New Testament	4
RELB	321	Interpreting the Bible	4
RELB		* Biblical Studies Electives	10

* All electives must be upper division. One class must be from the Old Testament and one from the New Testament.

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

Choose one from the following RELT courses:

RELT	342	Issues of God and Faith	3
RELT	456	Systematic Theology I	3
RELT	457	Systematic Theology II	3
			55

Cognates:

ENGL	327	Research and Writing in Religion	3
HIST	254	History of Christianity	4
		One Philosophy Course*	4

* PHIL 412 or PHIL 305 recommended.

Whenever possible, Religion majors are advised to take RELP 131 as their first course, followed by RELB 104 and RELT 202, in that order.

THEOLOGY MAJOR (Bachelor of Arts)

A student majoring in theology must complete 57 quarter hours in the major, the required cognates, the general studies requirements, and all baccalaureate degree requirements as outlined in this bulletin.

Major Requirements:

RELB	104	The Ministry of Jesus	4
RELB	321	Interpreting the Bible	4
RELH	455	Early Church History	3
RELH	457	History of Adventism	3
RELM	233	Introduction to Cross-Cultural Ministry	3

RELP	131	Introduction to Faith and Ministry	4
RELP	236	Church Worship	2
RELP	336	Church and Personal Ministry	4
RELP	338	Church Leadership	3
RELP	440	Crisis Ministry	2
RELP	490	Public Evangelism	1
RELP	496	Senior Seminar	2
RELT	202	Christian Beliefs	4
RELT	348	Christian Ethics	4
RELT	417	Inspiration and Revelation	3
RELT	456, 457	Systematic Theology I, II	6
RELT	495	Colloquium (12 required)	0
		*Electives (upper-division)	5
			57

*Electives must include one course from each of the two following groups:

RELB 301, 302, 303, 304, or 312

RELB 413, 437, 439, 441, 462, or 467

Cognates:

ENGL	327	Research and Writing in Religion	3
FINA	101	Personal Finance	2
HIST	456	Medieval and Early Modern Christianity	4
GREK	231, 232, 233	Greek I	9
GREK	331	Greek II (Intermediate Greek)	3
GREK	334	Greek Exegesis: Romans	3
HEBR	331, 332, 333	Hebrew I, II, III	12
PSYC	130	General Psychology	4
SPCH	101	Fundamentals of Speech Communication	4
SPCH	381	Biblical Preaching: Foundations	2
SPCH	382	Biblical Preaching: Exposition	2
SPCH	383	Biblical Preaching: Evangelism	2
		One Philosophy Course*	

* PHIL 412 or PHIL 305 recommended.

Pastoral Mentoring Experience: Theology majors must become involved for at least one school year in the mentoring program operated jointly between the School of Theology and the Upper Columbia Conference. Details of this program are available in the School of Theology office.

NOTE ON ADVANCEMENT TO CANDIDACY

Advancement to candidacy typically takes place during the junior year, except for those students transferring from other colleges or those changing majors close to the beginning of their junior year. In order to be evaluated, students must have successfully completed RELP 131, RELT 202, ENGL 224, GREK 231, 232, 233, SPCH 381, and RELP 336.

BIBLICAL LANGUAGES MAJOR (Bachelor of Arts)

A student majoring in biblical languages must complete 48 quarter hours in the major, the required cognates, the general studies programs, and all baccalaureate degree requirements as outlined in this bulletin.

Major Requirements:

GREK	231, 232, 233	Greek I	9
GREK	331, 332, 333	Greek II (Athens)	9
GREK	334	Greek Exegesis: Romans	3
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	
	or		4
RELB	231	Exploring the New Testament	
RELB	406	The Bible and Its Translations	2
		*Electives (1 upper-division RELB)	3-4
			45-46

*Electives must be chosen in consultation with and approved by the academic adviser assigned by the School of Theology.

Cognates:

ENGL	327	Research and Writing in Religion	3
HIST	305	The Ancient Near East	
	or		4
HIST	306	Classical Greece and Rome	
RELB	321	Interpreting the Bible	4
Select one of the following:			
RELB	301	Old Testament History	3
RELH	455	Early Church History	3
HIST	254	History of Christianity	4

BIBLICAL LANGUAGES MINOR

A student minoring in Biblical languages must complete 30 quarter hours of Biblical language courses:

*Electives (9 must be upper division) **30**

*Approval of Biblical languages adviser required. Recommended electives outside the minor are RELB 406, RELH 205, 455.

RELIGION MINOR

A student minoring in religion must complete 30 quarter hours of religion courses:

*Electives (12 must be upper division) **30**

*Approval of religion adviser 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.

BIBLICAL STUDIES COURSES (RELB)

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' 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 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 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 321 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.

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 406 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 413 REVELATION **3**

An exegetical study of the book of Revelation within its historical context, with special attention to its significance for Christian Eschatology.

RELB 437 MATTHEW, MARK AND JOHN **4**

An examination of the gospels, attending to the background and purpose, literary composition, theology, ethics, and relevance to contemporary issues and life.

RELB 439 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 441 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 454 LITERATURE OF THE BIBLE (OR ENGL 454) **4**

Prerequisite: General Studies literature or ENGL 234. See the English section of this Bulletin.

RELB 455 BOOK OF JUDGES: A CROSS-DISCIPLINARY APPROACH (OR ENGL 455) **4**

An interdisciplinary approach to the Book of Judges, including historical, literary, theological, archaeological, and anthropological methods. The course is designed to model various scholarly methods in the study of a biblical text. Prerequisite: One general education literature course and one biblical studies course, or permission of instructor. Will be offered even years only.

RELB 462 SIN, SALVATION, AND THE WRITINGS OF PAUL **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 467 CONFLICT AND HOPE IN THE LATER NEW TESTAMENT LETTERS **4**

An examination of Paul's prison and pastoral letters and of the general letters of the New Testament with attention to background and purpose, literary composition, theology, ethics, and relevance to contemporary issues and life.

RELIGIOUS HISTORY COURSES (RELH)

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**

See the Education and Psychology section of this bulletin.

RELH 455 EARLY CHURCH HISTORY **3**

Study of the rise of Christianity with emphasis on the development of theological concepts. Prerequisite: ENGL 224 or permission of instructor.

RELH 456 MEDIEVAL AND EARLY MODERN CHRISTIANITY (OR HIST 456) **4**

The history of Christianity from the Council of Chalcedon through the Enlightenment, with an emphasis on the Lutheran and Calvinistic Reformations, 400-1776.

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.

SOCI 449 SOCIOLOGY OF RELIGION **3**

See the Social Work and Sociology section of this bulletin.

MISSIONS COURSES (RELM)

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.

PROFESSIONAL RELIGION COURSES (RELP)

RELP 131 INTRODUCTION TO FAITH AND MINISTRY **4**

Exploration of personal faith and pastoral ministry with a focus on spiritual disciplines, call to pastoral ministry, and the scope of pastoral ministry and an acquisition of a basic Bible knowledge. 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. Prerequisites: RELP 131, RELB 132, RELT 133.

RELP 338 CHURCH LEADERSHIP **3**

Study of the theological and psychological principles of leadership applied to the church. Emphasizes Adventist church policy and programs, materials, and methods that can be used in preserving and fostering the life of the church. 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/NC.

RELP 395 METHODS OF TEACHING BIBLE IN THE SECONDARY SCHOOL **3**

Examination of religion teaching in the secondary school with emphasis on objectives, content, organization, methods and materials, as well as adolescent developmental needs and spiritual formation. Includes a practicum experience at the secondary level. Prerequisite: EDUC 390. Offered odd years and alternate summers.

RELP 440 CRISIS MINISTRY **2**

Introduction to the principles and practice of pastoral care of troubled persons 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. Prerequisite: RELP 131.

RELP 483 ADVANCED PASTORAL CARE **3**

Study of the role of the pastor in relationship to his/her ministering to families; includes study of the pastor as premarital counselor, as marriage and family counselor, and as marriage and family life enrichment leader. Prerequisite: RELP 440 or permission of instructor. Open only to theology and religion majors. Offered as needed.

RELP 490 PUBLIC EVANGELISM **1-3; 3**

Experience in evangelistic techniques to include giving Bible studies and holding public meetings. Open only to theology and religion majors. Offered as needed. Graded S or NC.

RELP 494 COOPERATIVE EDUCATION **0-3**

Individual contract arrangement involving students, faculty, and cooperating institutions to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval of the major adviser. Open only to theology and religion majors. Graded S or NC.

RELP 496 SENIOR SEMINAR **2**

Reading, writing and discussion focused on applying the range of theological disciplines to practical problems faced by the pastor. Open only to senior theology majors.

SPCH 381 BIBLICAL PREACHING: FOUNDATIONS **2**

See the Communications section of this bulletin.

SPCH 382 BIBLICAL PREACHING: EXPOSITION **2**

See the Communications section of this bulletin.

SPCH 383 BIBLICAL PREACHING: EVANGELISM **2**

See the Communications section of this bulletin.

THEOLOGY COURSES (RELT)

RELT 110 INTRODUCTION TO SEVENTH-DAY ADVENTIST BELIEF AND PRACTICE **4**

A general introduction to the Adventist community in its historical and contemporary contexts. Not open to students with senior standing. Students who have taken RELT 202 are not eligible to take RELT 110 for credit.

RELT 201 THE CHRISTIAN WAY OF SALVATION **4**

Study of the Christian offer of salvation as found through Jesus Christ and the church; considers not only the future, but also contemporary moral and social dimensions of salvation. Offered as needed.

RELT 202 CHRISTIAN BELIEFS **4**

Study 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 204 CONTEMPORARY ISSUES IN ADVENTIST THOUGHT 4

Study of current ideas and issues in Adventist theology designed for those who have an adequate background in Adventist doctrine. Offered as needed.

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 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 348 CHRISTIAN ETHICS 3-4

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.

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 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 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.

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 and HIST 456 or permission of instructor.

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 two 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.

BIBLICAL LANGUAGES COURSES (GREK, HEBR, LANE, LATN)

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.

GREK 331, 332, 333 GREEK II **3, 3, 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 **3**

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 441. Prerequisites: GREK 231 and GREK 232 or their equivalent. Offered even years only.

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, 332 or their 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.

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.

LANE 460 LANGUAGES OF THE ANCIENT NEAR EAST **1-4; 8**

Introduction to the elements of an ancient Near Eastern language, its vocabulary, grammar, syntax and cultural background. Departmental approval required.

FINANCIAL INFORMATION

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, loan promissory notes, 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 OFFICE assists current students with completing student loan applications 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	E-Mail
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 Office	509-527-2333	800-656-2333	loans@wallawalla.edu
STUDENT FINANCIAL SERVICES' 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.

ESTIMATED UNDERGRADUATE STUDENT BUDGETS

For 2011-2012

DORMITORY STUDENT

	Per Quarter	Per Year
Tuition (full-time, 13-16 hours)	$7,890	$23,670
ASWWU Membership Dues	76	228
Room Rent	1,065	3,195
Cafeteria (Meal Plan)	820	2,460
Books (average)	356	1,068
Miscellaneous	500	1,500
TOTAL	$10,707	$32,121

NON-DORMITORY STUDENT

	Per Quarter	Per Year
Tuition (full-time, 13-16 hours)	$7,890	$23,670
ASWWU Membership Dues	76	228
Books (average)	356	1,068
Miscellaneous	500	1,500
TOTAL	$8,822	$26,466

TUITION

Undergraduate Student Tuition

	Cost	Rate
Part-time Tuition (1-12 quarter hours)	$618	Per Qtr. Hr.
Full-time Tuition (13-16 quarter hours)	$7,890	Per Quarter
Overload Tuition (above 16 qtr. hours)	$525	Per Qtr. Hr.

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 $535 per quarter hour

Extension Tuition 55% of undergraduate tuition

Full-time teachers employed within driving distance of Walla Walla University may enroll for one class per quarter. Acceptance into the graduate Education Program and a copy of the school district's contract are required to qualify for the tuition rate of 55 percent of the undergraduate tuition. The balance of the tuition charge must be paid at the time of registration.

Senior Citizen Discounted Tuition

The Senior Citizen Class Program (non-degree seeking) makes it possible for students who are 65 or more years of age to take advantage of the following reduced tuition rates:

To take up to a 4 hour class for credit*	one half the regular tuition rate
To sit in on a class**	$100 per quarter

* Permission of the instructor is required.

** Class or lab fees are the responsibility of the student.

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 tuition, required fees, cafeteria meal plan, and rent plus any previous balance and less any awarded financial aid are paid before the student receives financial clearance for registration. Students and/or parents are billed for variable charges (such as bookstore and other campus purchases and additional meals beyond the student's meal plan) as those charges are incurred. International overseas students are expected to use the Regular Payment Plan.

Monthly Payment Plan

The quarter's tuition, required fees, cafeteria meal plan, and rent 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 other charges (such as bookstore and other campus purchases and additional meals beyond the student's meal plan) as those charges are incurred. Finance charges will accrue on the unpaid balance.

The schedule of payments is as follows:

	Autumn	Winter	Spring
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

The quarter's expenses (plus any previous balance and less any awarded financial aid) are processed as automatic charges to a MasterCard®, VISA® or Discover® credit card. The card holder may choose to use either the regular payment plan or monthly payment plan. At the end of the school year (or sooner if a student finishes midyear), a final charge or credit is applied to the card. Many people choose this option because it reduces the time spent arranging payment while making the user eligible for rewards many credit cards offer (frequent flyer mileage, discounts, rebates, etc.).

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 must be made in writing and signed by the student, either faxed or mailed to the Academic Records Office.

There is a $5 charge for each transcript requested.

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 (fall, winter, spring). ***[The total amount of scholarships, subsidy, and other aid cannot exceed tuition.]***

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, 2012 for the 2012-2013 school year.

INTERNATIONAL STUDENTS

International Student Deposit

Students who are not citizens or permanent residents of the United States (except Canadian students) are asked to place a $6,000 (U.S.) deposit with the University before final acceptance can be given and the I-20 form, necessary to secure the U.S. student visa, can be sent.

Insurance

Walla Walla University requires all international students to purchase the WWU Student Health and Additional Accident Insurance Plan.

Billing

International 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*. To determine ability to meet educational costs, the University requires applicants to submit a declaration of finances before final acceptance is given.

ADMINISTRATION-STAFF-FACULTY

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ADMINISTRATION

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Pedrito U. Maynard-Reid, Th.D.

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Business
JoAnn Y. Wiggins, Ph.D.

Education and Psychology
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Engineering
Douglas M. Logan, Ph.D.

Engineering Associate
Larry D. Aamodt, Ph.D.

Nursing
Lucille Benson Krull, Ph.D.

Nursing, Associate
Trudy L. Klein, M.S.

Social Work and Sociology
Pamela Keele Cress, Ph.D.

Theology
David E. Thomas, D.Min.

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Thomas J. Emmerson, M.F.A.

Biology
Robert A. Cushman Jr., Ph.D.

Chemistry
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Communications and Languages
Nancy L. Semotiuk, M.A.

Computer Science
Kenneth L. Wiggins, Ph.D.

English
Kellie A. Bond, Ph.D.

Health and Physical Education
Marvin L. Denney, M.Ed.

History and Philosophy
Montgomery S. Buell, M.A.

Mathematics
Kenneth L. Wiggins, Ph.D.

Music
Karin Thompson, Ph.D.

Physics
Thomas B. Ekkens, Ph.D.

Technology
Linda M. Felipez, Ed.D.

Director, University Libraries
Carolyn S. Gaskell, M.A.

ACADEMIC SUPPORT

Director of Academic Advisement
Betty Duncan, B.A.

Director of Career Center
Nelle Cornelison, M.Ed.

Director of Summer Session
Scott H. Ligman, Ph.D.

Director of Teaching Learning Center and Disability Services
Kristy Guldhammer, M.A.

Director of Technical Support Services

Manager, KGTS Station
Kevin Krueger, B.A.

Registrar
Carolyn Denney, M.A.

Associate Registrar
James R. Fisher, Ph.D.

UNIVERSITY ADVANCEMENT

Director, Alumni and Parent Relations
Nicole Batten, B.A.

Director, Leadership Giving and Campaigns
Dorita Tessier, B.S.

Associate Director, Capital Campaigns and Annual Giving
Breanna Bork, M.B.A.

Director, Estate Planning Services
Darius Fleck, B.B.A.

FINANCIAL ADMINISTRATION

Executive Director of Physical Plant Operations
Jerry Mason, B.S.

Director of Human Resources
Shane Voshell, B.A., SPHR

Director of Student Financial Services
Cassie Ragenovich, B.S.

Director of Information Services
Scott McFadden, B.S.

MARKETING AND ENROLLMENT SERVICES

Director of Admissions
Dallas Weis, M. Ed.

Director of Recruitment
Trevor Congleton, M.S.W.

Director of University Relations
Rosa Jimenez, B.A.

STUDENT SERVICES

Chaplain
Paddy McCoy, B.A.

Dean of Men
John Foote, B.S.

Dean of Women
Misty D. Puymon, M.S.

Director of Counseling and Testing Center
Donald E. Wallace, Ph.D.

Director of Food Service
Miles Rottman, B.A.

Residence Hall Dean (Portland Campus)
Eileen Stuart, R.N., M.S.W., A.C.S.W.

Director of Campus Health and Wellness
Wanda Nelson, M.N., A.R.N.P.

AUXILIARY

Manager, University Shop

Manager, Dairy Express
Christopher S. Gottfried, B.S.

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

INSTRUCTIONAL 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, *Associate Professor of Languages (2004)*
B.A. 1998, Occidental College
M.A. 2000, Ph.D. 2004, University of California at Santa Barbara

Norman L. Anderson, *Professor of Accounting (1987)*
B.S.B.A. 1971, Henderson State College
C.P.A. 1973, State of California
J.D. 1976, Southern Methodist University

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

Cindee M. Bailey, *Professor of Social Work and Sociology (1991)*
B.S.N. 1980; M.P.H. 1982, Loma Linda University
M.S.W. 1994, Walla Walla College
Ph.D. 1987, Oregon State University

W. Brandon Beck, *Associate Professor of Music (2000)*
B.S. 1985, Walla Walla College
M.Mus. 1988, VanderCook College of Music

Beverly G. Beem, *Professor of English (1976)*
B.A. 1967, Union College
M.A. 1969, Andrews University
Ph.D. 1974, University of Nebraska

Brent Bergherm, *Instructor in Technology (2007)*
B.A. 1999, Walla Walla College
M.A. 2010, Savannah College of Art and Design

Darold F. Bigger, *Professor of Religion (1992)*
B.A. 1966, Walla Walla College
M.Div. 1970, Andrews University
M.S.W. 1994, Walla Walla College
Ph.D. 1978, School of Theology at Claremont

Pamela Bing-Perry, *Assistant Professor of Social Work (2009)*
B.S. 1984, Union College
M.B.A. 1988, University of Kansas
M.S. 2003, Loma Linda University
D.M.F.T. 2009, Loma Linda University

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, *Assistant Professor of Social Work and Sociology (2002)*
B.A. 1987; M.S.W. 2000, Walla Walla College

Montgomery S. Buell, *Associate Professor of History (1996)*
B.A. 1990, Walla Walla College
M.A. 1995, Purdue University

David A. Bullock, *Professor of Communications (1984)*
B.A. 1976, Walla Walla College
M.A. 1985, Washington State University
Ph.D. 1994, University of Arizona

Susan Bungard, *Instructor in Religion (2004)*
B.A. 1981, Walla Walla College

Roy K. Campbell, *Professor of Physics (2001)*
B.S. 1978, Southern Adventist University
Ph.D. 1986, Florida State University

Paul F. Cimmino, *Visiting Professor of Social Work (2004)*
B.A. 1976,California State University, Northridge
M.S.W. 1977, California State University, Fresno
Ph.D. 1986, Columbia Pacific University

Bryce E. Cole, *Associate 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, *Associate Professor of Biblical Studies (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, *Associate Professor of Chemistry (2003)*
B.S. 1997, Andrews University; Ph.D. 2003, The University of British Columbia

David B. Crawford, *Instructor in Communications (2007)*
B.A. 2004, Walla Walla College
M.F.A. 2010, University of California, Riverside

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

Cheris B. Current, *Associate Professor of Social Work and Sociology (2007)*
B.A. 2002, Southern Adventist University
M.A. 2005; Ph.D. 2007, Washington State University

Robert A. Cushman Jr., *Professor of Biology (2008)*
B.S. 1975, Walla Walla College
M.S. 1983, Loma Linda University
Ph.D. 1994, Colorado School of Mines

Richard F. Daley, *Professor of Chemistry (1988)*
B.S. 1970, Southern College of Seventh-day Adventists
M.S. 1973, University of Tennessee
Ph.D. 1976, Emory University

Marvin L. Denney, *Assistant Professor of Health and Physical Education (1996)*
B.S. 1978, Walla Walla College
M.Ed. 1982, Eastern Washington University

Shawn Dietrich, Instructor in Technology (2005)
B.A., B.S. 2001, Walla Walla College

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, *Assistant 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

Loury J. Duffy, *Instructor in Technology (2004)*
B.S. 2003, Walla Walla College

Jonathan D. Duncan, *Professor of Mathematics (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 Religion (2000)*
B.A. 1992, Walla Walla College
M.Div. 1995; Ph.D. 2004, Andrews University

Robert D. Egbert, *Professor of Psychology (2001)*
B.A. 1965, Walla Walla College
M.S. 1972; M.Ed. 1974, University of Idaho
Ed.D. 1980, Temple University
Ph.D. 1994, The Union Institute

Thomas B. Ekkens, *Associate Professor of Physics (2004)*
B.S. 1991, Andrews University
M.S. 1995, Ph.D. 1999, University of Notre Dame

Karen Emerson, *Visiting Assistant Professor of Social Work (2004)*
B.A. 1973, St. Ambrose University
M.S.W. 1992, Eastern Washington University

Linda R. Emmerson, *Assistant Professor of Philosophy (2001)*
B.A. 1990, Walla Walla College
M.A. 2009, California State University, Dominguez Hills

Thomas J. Emmerson, *Professor of Art (1976)*
B.A. 1972, Walla Walla College
B.F.A. 1974; M.F.A. 1979, Otis Art Institute of Los Angeles County

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

Rob Frohne, *Professor of Engineering (1988)*
B.S.E. 1983, Walla Walla College
M.S.E.E. 1984; Ph.D. 1988, Purdue University

Joseph G. Galusha, Professor of Biology (1975-88; 1992)
B.A. 1968, Walla Walla College
M.A. 1972, Andrews University
D.Phil. 1975, Oxford University

Carolyn S. Gaskell, *Librarian (1978)*
B.A. 1976, Pacific Union College
M.A. 1977, University of Denver

Terrell D. Gottschall, *Professor of History (1986)*
B.A. 1973, Walla Walla College
M.A. 1975; Ph.D. 1981, Washington State University

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, *Assistant Professor of Social Work (1992)*
B.S.W. 1986; M.S.W. 1990, Walla Walla College

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B.A. 1974, Columbia Union College
M.A. 1979, Andrews University

Randi Hankins, *Visiting Assistant Professor of Social Work (1996)*
B.S. 1975, Central Washington University
M.S.W. 1979, Eastern Washington University

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B.A. 1999, Walla Walla College
M.F.A. 2008, National University

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B.S. 1994, Ohio State University
M.A. 1998; Ph.D. 2007, University of California Santa Barbara

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B.S. 1996, Walla Walla College
M.S. 2006, Purdue University

Linda L. Ivy, *Associate Professor of Psychology (2006)*
B.S. 1999, M.S. 2001, Ph.D. 2005, University of Oregon

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B.A. 1971, Walla Walla College
M.Div. 1974, Andrews University
M.P.H. 1980, Loma Linda University
M.A. Religion 1988, The Claremont Graduate School
M.A. Literature and Film 2007, Claremont Graduate University
Ph.D. 1990, The Claremont Graduate School

Ginger Ketting-Weller, *Professor of Education (2001)*
B.S. 1985, Walla Walla College
M.A. 1988, Loma Linda University
Ph.D. 1997, The Claremont Graduate School

Rosemarie Buck Khng, *Assistant Professor of Nursing (2008)*
B.S. 1981, Walla Walla College
M.S. 1985, Loma Linda University

Harriett Kimball-Hilario, *Visiting Assistant Professor of Social Work (2002)*
B.S. 1974, Montana State University
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