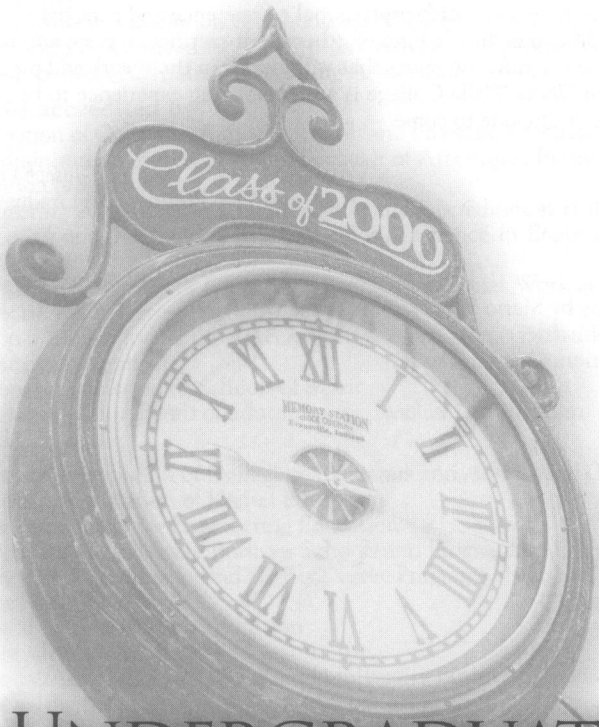
Walla Walla College

Bulletin

2003~2004



UNDERGRADUATE BULLETIN

2003~2004

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ABOUT THE COVER

Walla Walla College is proud of its graduates. They come with great hope and anticipation; they leave with professional competence and personal commitment to make a difference in the lives of others. Self-sacrifice, service and responsible citizenship are significant values that will live on in their work and play. In short, education at Walla Walla College is a life-changing experience to be enjoyed in this life and in the one to come.

-Joseph G. Galusha
Associate Vice President for Graduate Studies

Photography by Mario Panebianco
B.S. in Technology
Concentration: Graphic Design

Walla Walla College is a non-profit corporation authorized by the state of Oregon to offer and confer the academic degree of Bachelor of Science with a major in Nursing described herein, following a determination that state academic standards will be satisfied under OAR 538-030. Inquiries concerning the standards or school compliance may be directed to the Office of Degree Authorization, 1500 Valley River Drive, Suite 100, Eugene, Oregon 97401.

WALLA WALLA COLLEGE
204 South College Avenue
College Place, WA 99324
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www.wwc.edu

WALLA WALLA COLLEGE

accredited by

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

programs accredited by

Association of Collegiate 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)
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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
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Association of Collegiate Business Schools and Programs (ACBSP)
Council of Baccalaureate and Higher Degree Programs of the National League for Nursing
Council on Social Work Education
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The Attorney General of the United States for nonimmigrant 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

Equal Opportunity Commitment

Walla Walla College maintains a policy of equal educational opportunity for all applicants without regard to sex, race, color, national and/or ethnic origin, age, or physical handicaps, and in administration of its educational and admissions policies, financial affairs, employment programs, student life and services, or any other college-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.

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Room Reservations
Foreman/Conard Hall
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General Information
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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.

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

GRADUATE DEGREES

(See Graduate Bulletin)

Master of Arts in Education
Specializations:
- Curriculum and Instruction
- Educational Leadership
- Literacy Instruction
- Students-at-Risk

Master of Arts in Counseling Psychology

Master of Arts in Teaching
- Educational Leadership
- Literacy Instruction
- Instruction with State Certification (Elementary)
- Instruction with State Certification (Secondary)

Master of Science
- Biology

Master of Social Work

Master of Education
Specialization:
- Curriculum and Instruction
- Educational Leadership
- Literacy Instruction
- Students-at-Risk

WALLA WALLA COLLEGE
ACADEMIC CALENDAR 2003-2004

AUTUMN QUARTER

September	22-28	M-F	Freshman Experience and Orientation
	22-28	M-S	Registration
	29	M	Instruction Begins
October	2	R	Last Day to Register
	3	F	Portland Campus Registration
	10	F	Last Day for Registered Students to Add a Class or Change to Audit
November	18	T	Last Day to Withdraw from Classes
	23	S	Thanksgiving Vacation Begins
	30		Thanksgiving Vacation Ends (10:00 p.m.)
December	15-17	MTW	Final Exams
	26	F	Graduation Date

WINTER QUARTER

January	4	S	Registration
	5	M	Instruction Begins
	8	R	Last Day to Register
	9	F	Portland Campus Registration
	16	F	Last Day for Registered Students to Add a Class or Change to Audit
February	24	T	Last Day to Withdraw from Classes
March	15-17	MTW	Final Exams
	26	F	Graduation Date

SPRING QUARTER

March	28	S	Registration
	29	M	Instruction Begins
April	1	R	Last Day to Register
	2	F	Portland Campus Registration
	9	F	Last Day for Registered Students to Add a Class or Change to Audit
May	18	T	Last Day to Withdraw from Classes
June	7-9	MTW	Final Exams
	13	S	Commencement (8:30 a.m.)

SUMMER QUARTER

June	21	M	Instruction Begins
July	5	M	Independence Day Holiday
August	13	F	Eight-week Session Ends
	27	F	Graduation Date

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 College 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 College, 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 College 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 College 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 COLLEGE CAMPUS

Walla Walla College 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 College, in successful operation since December 7, 1892, was established in harmony with a resolution unanimously adopted at the General Conference of Seventh-day Adventists held in Battle Creek, Michigan in 1891.

The college provides assistance through Disability Support Services, to encourage the attendance and academic success of students who may have a disability. The campus and a number of buildings have been modified to provide easy wheelchair access.

PORTLAND SCHOOL OF NURSING. Walla Walla College 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.

MARINE STATION. Walla Walla College maintains a biological research facility at Rosario Beach, adjoining Deception Pass State Park, Anacortes, Washington. This facility occupies 40 acres of beach and timberland, and includes five laboratory buildings, a kitchen and assembly hall, shop and 29 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 old Administration Building still stands. In those days, it contained classrooms, offices, dormitories and cafeteria. Walla Walla College has come a long way since then.

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 Station 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, the Fine Arts Center, and the Life Sciences Complex.

In the 1970s, WWC completed the Health Sciences 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.

Today, Walla Walla College 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 College for over 100 years is very much alive today.

STUDENT LIFE

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

CHRISTIAN COMMITMENT

Walla Walla College 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 College 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 College 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.

CHAPELS. Chapels, held each Tuesday, and an occasional assembly, are important to the spiritual and social unity of the college family. All undergraduate students are required to attend.

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

OFFICE OF CAMPUS CHAPLAIN. The Campus Chaplain welcomes students seeking personal spiritual guidance. Other responsibilities include coordinating campus religious activities and sponsoring the Campus Ministries organization. Student chaplains assist the Chaplain in these activities.

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, community service projects.

OFFICE OF STUDENT MISSIONS (SM). Through the Student Missions Office, a large number of WWC students take advantage of international student mission and North American volunteer opportunities. Participating students spend up to one year away from the WWC 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 WWC 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 College. 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.

SOCIAL OPPORTUNITY

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

ASSOCIATED STUDENTS OF WALLA WALLA COLLEGE. All WWC faculty and regularly enrolled undergraduate students are members of the ASWWC. ASWWC elected officers are responsible for a wide range of social and religious activity planning, and for representing student needs and concerns to WWC administrators. The ASWWC 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 ASWWC Publications Board. The ASWWC is co-sponsored by the Vice-President for Student Administration 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, WWC 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 WWC, 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, golf, softball, volleyball; Men's sports—basketball, golf, soccer, volleyball.

INTRAMURALS. A recreational sports program in individual and team sports that encourages campus-wide involvement at all skill levels. More than 60 percent of WWC 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 at any of several ski resorts.

STUDENT HOUSING

RESIDENCE HALLS. Walla Walla College 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 Administration Office. Others are welcome as space allows. Campus residence hall options include:

Foreman/Conard Hall. This residence hall complex houses 400 women. The Foreman portion is a seven-story high-rise for upper-division women, featuring elevator service and air-conditioned rooms. The Conard portion includes a large worship room, fitness center, 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: Health Services, Counseling Resource Center, Multicultural Services, and Career Counseling.

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

APARTMENTS. The College 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 Rental Properties 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 rental office.

STUDENT SERVICES

ACADEMIC ADVISEMENT. Academic Advisement is an important part of a student's progress through a chosen program of study at WWC. 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 program to remedy the situation.

All degree seeking undergraduate students are expected to have an academic adviser at all times. Freshman are assigned specially selected academic advisers to assist them in making the most of their college 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.

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 or online. 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 WWC. 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 College 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 WWC students

ACADEMIC SERVICES.

Career Counseling Services. Please see Counseling Resource Center.

Placement Services. Schools and departments primarily assist students with job placement although job information is available in the Placement and Cooperative Education Office. Placement files can be completed by students in the office. These files can then be forwarded from the office to prospective employers. The office also participates in student placement into professional programs by facilitating interviews with recruiters. Assistance with resumes is also available to all students. For more information, contact the Placement and Cooperative Education Office.

Cooperative Education. The College provides a cooperative education program that integrates academic learning with a working 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 Placement and Cooperative Education Office.

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

COUNSELING AND TESTING. The Counseling and Testing Center provides counseling, career counseling, and testing services for WWC students.

Counseling Services. The services of the Counseling and Testing Center are designed to help students deal with the pressures of college life. Students can receive help in dealing with personal problems, in 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.

Career Couseling Services. Students seek career counseling for several reasons. They often have difficulties deciding what their major will be or in what direction their career path will go. Others have already made this decision, but find they are not as certain of their choice as they once were. Still others find themselves struggling academically in their major and may be forced to choose another major.

Career Counseling at the Counseling and Testing Center is done on an individual basis. The process of career counseling is aided by the use of tests such as the Myers-Briggs Type Indicator and the Strong Interest Inventory to help the student learn about their personality type and career interests.

Testing Services. The Counseling and Testing Center 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. Registration materials are available at the Testing Center. Tests administered at the center include:

American College Testing (ACT)
Academic Profile
College-Level Examination Program (CLEP)
Correspondence Tests
English Placement Tests
Graduate Record Examination (GRE) (subject tests only)
Law School Admission Test (LSAT)
Medical College Admission Test (MCAT)
Optometry Admission Test (OAT)
Major Field Achievement Test (MFAT)
Miller Analogies Test (MAT)

Student Assistance Program. The Counseling and Testing Center also provides services for students who are dealing with drug problems. Walla Walla College policy prohibits the use of tobacco, alcohol, and other drugs. Recognizing that not all students make choices consistent with this philosophy, the Center provides individualized assessment, testing, counseling, and referral services as well as a prevention program. The Center works closely with residence hall deans and the vice president for Student Administration to insure that students receive adequate help and support to remain drug-free.

Most services offered by the Counseling and Testing Center 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 the Counseling and Testing Center on the main floor of Meske Hall or at the Counseling and Testing Center web site. If students have any questions they are free to call the Center at 527-2147 during office hours.

KGTS. Providing Christian music and programming to Eastern Washington and Northeastern Oregon, and worldwide via the Internet, KGTS is federally licensed as an educational, community-service station. Its mission is to create an environment where the Holy Spirit can inspire listeners, Christians and seekers alike, to a growing relationship with Jesus Christ. Owned by Walla Walla College and staffed by students, the station also serves the academic needs of the Communications Department by training students in broadcasting, station management, sales and development, engineering, and research. KGTS is funded by listeners, local business underwriters, Walla Walla College and churches.

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 WWC libraries contain over 197,000 volumes, with an average of 3,000 volumes added annually and holds over 1,000 current periodical titles.

Peterson Memorial Library. The Library's Home Page at library.wwc.edu is the starting point for most library research at WWC and its branch campuses. The Library's fully automated INNOPAC Catalog can be searched from that page as can over 70 databases to which the Library subscribes. Branching from the Library's Home page are web pages designed specifically for students at the Portland Campus and the Montana Graduate Social Work sites.

Using the INNOPAC Catalog, students can search collections at the Peterson Memorial Library, Curriculum Library, Rosario Marine Biological Station, MSW Montana sites, and branch Nursing Library in Portland, OR. The INNOPAC Catalog is accessible to anyone with an Internet connection.

Selected databases are also available from the library's home page. They include such key resources as *BIOSIS, Carl Uncover, CINAHL, EBSCO's Academic Search Full-Text Premier, ERIC, PsycArticles, MedLine, MLA Bibliography, NetLibrary, NewsBank, Proquest Direct, PsychInfo, Social Work Abstracts,* and *WorldCat*. These databases can be accessed from any on-campus computer connected to the campus network. In addition, off-campus access to these databases is also available

to current students, faculty and staff of Walla Walla College. Other resources available to Peterson Memorial Library and College Place campus users include the E. G. White writings and SDA Bible Commentary series on CD-ROM.

Reading room accommodations, the open-shelf system, and periodical reading room enhance the study experience. Microform readers make accessible microforms of scholarly material. A new lab with eleven PCs, one scanner, and a printer enhance students' access to resources. In addition, the library offers six laptops for check out as well as wireless networking throughout the library.

The library's Media Center provides a small collection of videos and equipment for viewing various media. Resources in other libraries are available to students and faculty members through the library's membership in several resource sharing cooperatives, including ALICE (Adventist Library Information Cooperative). Materials not held at one of the college libraries can also be procured through the Document Delivery service operated by the Reference Department. WWC students with validated identification cards also have access to the library facilities of Whitman College, a private liberal-arts college located in downtown Walla Walla.

Curriculum Library. Located in Smith Hall, this library contains professional literature, 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 WWC's Portland, Oregon campus.

CAMPUS HEALTH SERVICE

Main Campus

A highly qualified staff provides acute care and some emergency services for students requiring medical attention. Referrals for chronic or severe emergency conditions will be made to local clinics and hospitals. Campus Health Service personnel will assist with insurance billing if necessary; 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 hospital.

TEACHING LEARNING CENTER. The Teaching Learning Center offers drop-in tutoring free of charge and private tutoring for a minimal fee to all students enrolled in Walla Walla College. The business, mathematics, engineering, computer, technology, modern languages, reading, science, and writing labs offer tutoring to students enrolled in courses. Tutoring in additional areas is available upon sufficient demand. Disability Support Services is available for students with documentable disabilities. The center also offers classes to help students improve specific academic skills.

DISABILITY SUPPORT SERVICES. Walla Walla College is committed to responding to the needs of students with disabilities as outlined in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

The college provides program access to students with permanent disabilities through a variety of services and equipment. The Disability Support Services office coordinates academic accommodations which include, but are not limited to: testing accommodations, notetakers, alternate text formats, and classroom relocation. Services must be arranged in advance, 6 weeks to guarantee services, and require documentation of the disability from an appropriate professional.

For more information about any of these services, contact Disability Support Services, Walla Walla College, 204 S. College Ave., College Place, WA 99324 (509-527-2366). Policies may be found on the web at: www.wwc.edu/services/tlc/dss.

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 College 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 College does expect students to live as members of a Christian community as detailed in the *Student Handbook*.

PUBLIC INFORMATION

The Family Educational Rights and Privacy Act (FERPA) of 1974, provides that the College will make every effort to maintain student records in confidence. No student information other than public information will be given to any third party without the written consent of the student except as noted in the college's Statement of Policy on FERPA.

Students have the right to withhold the disclosure of any or all of the following information which Walla Walla College has designated as Directory Information: the student's name, telephone number, e-mail address, date of birth, class standing, major field of study, dates of attendance and graduation, degrees and awards conferred, the most recent previous educational institution attended, participation in officially recognized activities and sports, and weight and height of athletic team members.

The above information is released except when students indicate in writing to the Academic Records Office that the information is to be withheld. A special form is available at the Records Office for this purpose.

Copies of the Act, amendments subsequent to this Act, U.S. Department of Education guidelines, and Walla Walla College's Statement of Policy on FERPA are available in the Academic Records Office. Students have the right to inspect and review official records, files, and data directly related to them kept by any office of the College. Forms for filing requests to see records are available in the Academic Records Office. Requests will be processed within 45 days from the date of filing.

ADMISSION TO THE COLLEGE

Walla Walla College welcomes to its school family any student who wishes to obtain a quality education in a Christian environment (Walla Walla College 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 college.

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

Prospective students must submit a completed application form accompanied by a non-refundable $30 (U.S.) fee. Copies of the official form are available from the Office of Enrollment or on the WWC web page at www.wwc.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 grade-point average of 2.00. Students with a cumulative grade-point average of 2.0-2.50 must complete and submit a Contract of Intent. These students will be assigned a special adviser, will be limited to 12 quarter hours the first quarter of attendance and must attend and pass during their first quarter of attendance (with a grade of C or above) a study skills class.

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.
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. WWC 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.
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 College 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

Each year a limited number of students are admitted into WWC on provisional status who lack one or more of the subjects required for entrance. Students accepted on such a basis should check with the Director of Academic Advisement about specific requirements for meeting these deficiencies. **Students need to make up these deficiencies during their freshman year to qualify for admission to the second year of studies.** Students need to satisfy entrance requirements in mathematics before enrolling for a college-level (above 100 level) mathematics class. Concurrent enrollment may be allowed with permission from the mathematics department.

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
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. (Transfer students who have junior or senior status are not required to supply WWC with an official high school transcript.)
   A student who transfers to Walla Walla College with 30 or more transferable quarter hours will not be required to write the ACT or SAT exam.
4. Official transcripts from all post-secondary institution attended.
5. Satisfactory personal reference. WWC 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 WWC School of Nursing (Portland campus) 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.**
6. 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 College 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 College. Students transferring from non-accredited institutions may be required to take validating examinations should they wish credit to be transferred to Walla Walla College.

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.

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 College 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 College must supply a letter of recommendation from one of their engineering professors at their most recent educational institution attended.

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

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.
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 College Office of Enrollment.

Returning Students

Students who have attended Walla Walla College, 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 College 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 College.
2. An acceptable citizenship record while at Walla Walla College.
3. Official transcripts from each post-secondary institution attended since the last quarter at Walla Walla College 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 College. 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.

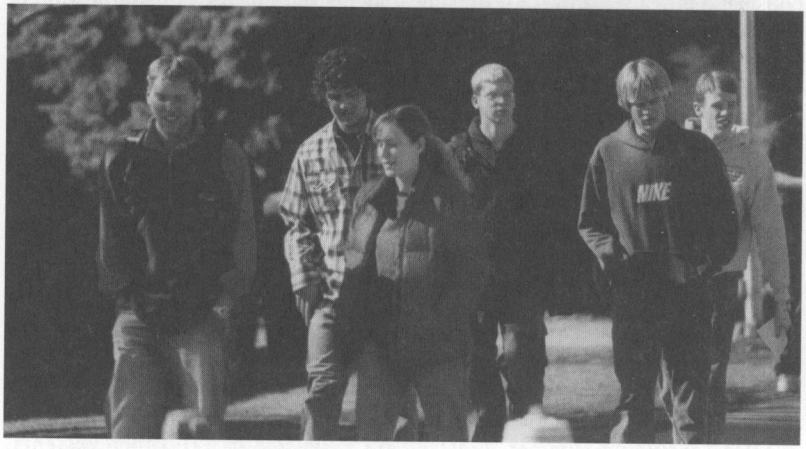
Guest Students

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 College.

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 College 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.wwc.edu. A non-refundable $30 (U.S.) application fee is required and should be submitted at the time of application.

Official Transcripts

Request official transcripts from the registrar of each institution attended and have them sent directly to the Enrollment Office of Walla Walla College. *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 college 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 WWC are not required to supply an official high school transcript if they have junior or senior level status. Transfer student who are entering WWC 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 College may be affected. International transcripts will be evaluated in conjunction with published guidelines for each country.

Academic records become the property of the college 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.**

College 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 WWC. 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 Portland campus 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.

Transfer students must be in good and regular standing from the institution most recently attended when transferring to Walla Walla College. A letter of reference is requested from the most recently attended institution. Additional forms are available from the Office of Enrollment.

TOEFL Test Requirement

If English is not the native language, students will demonstrate the ability to pursue studies in the English language by passing either the TOEFL (Test of English as a Foreign Language) or MELAB (Michigan English Language Assessment Battery). The following TOEFL scores are required for entry into Walla College:

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 College for appropriate placement in English.

Students with TOEFL scores between 550 and 600, including students transferring from an English medium secondary school, are required to take Walla Walla College'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 or 1-800-541-8900.

Room Deposit

A $150 deposit is required to reserve a residence hall room. Upon the student's departure, a refund of up to $120 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 Student Health Service 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 the Student Health Services Office or on-line (www.wwc.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 the Student Health Services.

ADMISSIONS BY EXAMINATION

Individuals without high school diplomas who have 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 admis-

sion 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 College 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 $30 (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).
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 College. 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 College Office of Enrollment.

Prior to acceptance into any program and before an I-20 form is issued to international students, a $3,000 (U.S.) deposit is necessary (except Canadian and specified U.S. Trust Territory students). See International Students 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 COLLEGE PRIOR TO LEAVING THEIR HOME COUNTRY AND ENTERING THE UNITED STATES TO STUDY AT WALLA WALLA COLLEGE.**

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.

REGISTRATION

The academic year is divided into four academic quarters, Autumn, Winter, Spring, and Summer. All students are required to register on designated days at the beginning of each quarter. Registration is official only after all procedures required by the College 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 officially registered for a course until the instructor has been informed by the Academic Records Office. 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 College recognizes that in some instances a student may not be able to provide an official transcript immediately prior to enrolling at the college. At the college'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 college academically, socially and spiritually. JumpStart includes regular orientation information, registration, financial clearance, course placement, and academic advisement. 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 Administration, and financial appeals to the Director of Student Financial Services. If satisfaction is not obtained, students may consult the Walla Walla College Grievance Policy.

WITHDRAWALS. Students withdrawing from all classes must submit an official College 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.

CONCURRENT REGISTRATION. Students registered at Walla Walla College and wishing to enroll simultaneously for courses in other colleges must have prior approval of the Associate Vice President for Academic Administration. 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 College 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 College. 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. A student may register for upper-division courses **provided that he/she has completed 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 college course work.**

SENIOR REGISTRATION FOR GRADUATE COURSES. Seniors who wish to take graduate (500-level) courses must submit a petition, a copy of the senior outline, and a current transcript to the Graduate Council 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. **Students may not take challenge or waiver examinations for courses they have audited.** Students with a Walla Walla College 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 Finance Bulletin.

COURSE LOAD

The academic study load at Walla Walla College 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 request to register for 18 quarter hours if their grade-point average for the previous quarter was 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

CLASSIFICATION OF STUDENTS

FRESHMEN. Students who have met the college 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 graduates.

NONMATRICULATED STUDENTS. Individuals ineligible for regular admission or do not intend to matriculate in an academic program at Walla Walla College are considered nonmatriculated. (See Admission to the College: 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 College is to prepare its students to be responsible individuals with Christian values. The College 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 College 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 earned is sent to students (and parents of dependent students) at the end of each quarter.

The following grades are used:

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

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, although the permanent record will show it was assigned temporarily. 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.

In order for a student to receive an Incomplete, the instructor and the student must complete a contract specifying the reasons for the student not completing the course requirements, the conditions for removal of the Incomplete, and the default grade. Teacher and student retain copies of the contract and a third copy is sent to the Office of Academic Records.

The student is responsible to meet the conditions of the contract including submission of all required work to the teacher on or before the published deadline, 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.

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

ADMISSION WITH PROBATION. Under special circumstances, students whose cumulative grade point average is less than 2.0 are admitted on academic probation. These students receive a letter specifying the terms of probationary status, which often include biweekly conferences with an adviser or special adviser. Probation students who do not meet the specified terms during their first quarter will be subject to dismissal.

ACADEMIC WARNING. A student whose cumulative grade point average and previous quarter grade point average is 2.00 or higher, but whose current quarter grade point average is below 2.00, receives a warning letter from the Associate Vice-President for Academic Administration. A copy of the letter is sent to the student's academic advisers to ensure appropriate advisement for the ensuing term.

ACADEMIC PROBATION AND DISMISSAL. When a student's cumulative grade point average on courses taken at Walla Walla College, falls below 2.00, or when a student's quarter grade point average falls below 2.00 on courses taken at WWC, for two consecutive quarters, that student is automatically placed on academic probation. Within 5 working days after quarter grades are issued, probationary status is communicated to the student in writing by the Associate Vice-President for Academic Administration. A copy of the letter is also sent to the student's academic adviser.

Academic probation entails the following conditions, each intended to assist a student in improving scholastic performance:

1. enrollment is limited to 12 quarter credits which includes any incomplete that is outstanding. Students are advised to repeat courses with a grade less than C;
2. independent study or correspondence credits are not permitted;
3. a biweekly conference with the academic adviser and a midterm progress report are required;
4. extracurricular activities which necessitate class absences are not permitted;
5. the student is not permitted to hold office in any student organization or serve as a student missionary or taskforce worker; and
6. Students are allowed to preregister for up to 12 hours.

If a student's cumulative grade point average is below 1.75, the following additional conditions must be met.

1. the student must sign an academic contract and meet all of its requirements;
2. the student must participate in a counseling and/or testing program to confirm an appropriate major; and
3. the student will meet with his/her adviser or special probation adviser on a biweekly basis.

Probationary status typically extends for one quarter, during which the student must demonstrate academic ability and seriousness of purpose. This requirement is met by a grade point average for the quarter of at least 2.3 or C+ average with no F grades.

A student meeting these criteria may continue on academic probation for the ensuing quarter, bound by the conditions outlined above, until such time as the overall grade point average reaches at least 2.00. A student whose cumulative grade point average is 2.00 or above, but who has been placed on probation because of consecutive quarter grade point averages below 2.00, must attain a quarter grade point average of at least 2.00 to clear probation. A student failing to meet these criteria is subject to academic dismissal.

Academic dismissal is by action of the Academic Standards Committee upon review of the student's overall academic progress. The Associate Vice-President for Academic Administration notifies the student, in writing, of the committee's decision and the rights and process of appeal.

Following at least six months' absence from the college, a student dismissed for academic reasons may formally apply for readmission. The Admissions Committee will review the application and seek recommendations from the Academic

Standards Committee. Convincing evidence will be required which demonstrates the student's commitment and potential for academic success.

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 Finance 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 via the Walla Walla College home page. Letters must include the student's ID number or Social Security number, birth date, dates of attendance, 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 College. There is a $5 charge per transcript.

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

ACHIEVEMENT RECOGNITION

DEAN'S LIST. The 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 College 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 College 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 College. (Certain college 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. Applica-

tion 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 Finance 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 al ready earned credit in a similar course, or taken advanced courses.
4. A maximum of 24 quarter hours by examination may be counted to ward 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 examina tion.
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 college credit.

CHALLENGE EXAMINATIONS. A challenge examination is a college-prepared or a standardized examination which, if successfully completed, will yield regular college 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.

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

Biology 101, 102, 103 General Biology
Students obtaining a 3 or higher on the Advancement Placement Biology examination will be awarded 12 quarter hours for BIOL 101, 102, 103. 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 General Chemistry. 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
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
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, 204 Introduction to Literature and College Writing
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 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). There are two types of CLEP examinations, General and Subject. Walla Walla College grants credit for Subject Examinations **only**. The test center located at the Counseling Testing Center in Meske Hall administers these computer-based tests by appointment. Candidates should consult with the test center for dates and other specific information. There is a $52 fee for each CLEP exam. These tests may not be repeated. Examination must be taken prior to the student's completion of a total of 45 quarter hours of college credit. Evaluated credit granting scores vary by department and are available in the Academic Records Office upon request.

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 College. 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 College 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 College. Students not enrolling in WWC 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 College on a limited basis. These off-campus courses provide opportunity for academic enrichment, acceleration, and continuing education.

The College 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 College, together with nine 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:

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)
University of Eastern Africa Baraton, Kenya	(Swahili)

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

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

All applications and payments for tuition, room, and board are to be made through Walla Walla College. Any deviation from this schedule by students of Walla Walla College 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 Modern Language Department and the ACA Coordinator prior to enrollment. The Registrar, the Major Department Chair, and the Academic Standards Committee will determine how the credits are applied.**

ACADEMIC PROGRAMS AND GRADUATION REQUIREMENTS

UNDERGRADUATE DEGREES OFFERED

Walla Walla College 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 College 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 College 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.

TEACHER EDUCATION PROGRAM

The Walla Walla College School of Education and Psychology is authorized by the Washington State Board of Education to recommend both residency and continuing teachers' credentials. 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, computer information systems, economics, finance, human resource management, international business, management, and marketing. For specific requirements, see the 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 two years 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.**

Degrees are conferred and diplomas issued each quarter. All coursework must be completed, transcripts received, comprehensives taken and grades received before the degree will be awarded. Dates of degrees for the 2003-2004 school year are:

Autumn ..... December 26, 2003
Winter ..... March 26, 2004
Spring ..... June 13, 2004
Summer ..... August 27, 2004

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 college 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 20% of the requirements in each major and minor must be taken at WWC in residence.
2. Degree candidates must be in residence the three quarters preceding graduation.
3. Students must be in residence the three consecutive quarters preceding graduation and must complete a minimum of 36 quarter hours, including 9 upper-division quarter hours in the major and 3 upper-division quarter hours in the minor.

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.**
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, BM, 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.**
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 College.
8. **Comprehensive Examinations.** A comprehensive examination is required for each major before a degree may be conferred. For some majors, the Major Field Achievement Test (MFAT) is used, and for others, the Graduate Record General and/or Subject Exam is used as the comprehensive. There are also some departments who provide a comprehensive exam and/or project. The bulletin details those requirements under the appropriate department.

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

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

9. **Transcripts and Correspondence Work.** Seniors must have all transfer transcripts on file in the Academic Records Office prior to the end of the final quarter in residence to avoid delay of graduation.
10. **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.
11. **Applied Music Credit Applicable Toward Baccalaureate Degree.** Not more than 9 quarter hours in applied music (including 3 quarter hours of Ensemble) may be earned toward a baccalaureate degree without an equal number of quarter hours in music courses with prefixes MUCT, MUED or MUHL. Additional hours in applied music may include ensemble hours without restrictions.
12. **Academic Profile Examination.** In order to assist the college in its assessment program, all seniors graduating with a Baccalaureate degree are required to take the Academic Profile Examination before graduation.

GENERAL STUDIES REQUIREMENTS

In keeping with the mission of the college, the educational program at Walla Walla College 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 College 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 and His Creation.

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.

The Natural World

- Students will develop an integrated understanding of science and technology and their roles in society.

Students will improve their skills in:

Critical and Creative Thinking

- Students will develop the skills for reflection, analysis, criticism synthesis, and the openness conducive for philosophical thinking.

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.

Collaboration

- Students will learn to engage in collaborative endeavors.

Students will deepen their commitment to:

God, Humanity, and the Earth

- Students will come to know and trust God and to value human beings.
- Students will develop an attitude of stewardship and ethical responsibility toward humanity and the environment.

Following is an outline of the general studies requirements for the various degrees. A full description and listing of general education courses follow the outline.

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 General Studies Honors Program, see the General Studies Honors section of this Bulletin.

CHECKLIST FOR MEETING DEGREE REQUIREMENTS

The following will help you in meeting graduation requirements at WWC. 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. 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 college bulletin for further explanations of these requirements.

_____ **General Studies requirements–see General Studies section of the bulletin**

84 hours for B.A. degrees
72 hours for B.B.A., B.S., or B.S.W. degrees
See bulletin for B.Mus. and B.S.E. degrees
32 hours for A.S. degrees

_____ **Total hours required**

192 quarter hours for Bachelors degrees (Exception: 200 for the B.S.E. degree)
96 credits must be from 4-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 Bachelors 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.

_____ **No grade lower than a C- (1.70) in the major or minor**

Exceptions:
Nursing and Education majors–C or 2.00.
Engineering–see bulletin.

_____ **GPA requirements:**

Minimum of 2.00 in each major and each minor
Minimum of 2.00 cumulative GPA
(Exceptions: Education majors, 2.75; Nursing majors, 2.50)

_____ **Comprehensives–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.

SPECIFIC COURSES FOR GENERAL STUDIES

The range of hours for each area 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, Health-related, or Nutrition: 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	274, 275	History of England	4, 4
HIST	284	History of Latin America	4
HIST	285	History of Mexico	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	344	Social Psychology	3
PSYC	455	History and Systems of Psychology	3
SOCI	204	General Sociology	4
SOCI	225	Marriage and Family Life	2
SOCI	236	Racial and Ethnic Relations	3
SPCH	401	Introduction to General Semantics	2

* 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	324, 325, 326	History of World Art	3, 3, 3
MUHL	124	Introduction to Music	4
MUHL	134	World Music	4
*MUHL	311, 312	Survey of Music History	4, 4
SPCH	363	History of Theatre	4

*Registration requires permission of instructor.

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	215	Introduction to Film Literature	4
ENGL	257, 357	The African American Experience	4, 4
ENGL	312	Development of Film Literature	4
ENGL	313	Aesthetics in Image and Text	4
ENGL	314	Advanced Themes in Literature	4
ENGL	315	Genre Film Literature	4
ENGL	316	Literature of the American West	4
ENGL	317	Pacific Northwest Writers	4
ENGL	333	Poetics	3
ENGL	358	Classical Literature	4
ENGL	359	World Literature	4
ENGL	360	Shakespeare at Ashland	2
ENGL	454	Literature of the Bible	4
ENGL	455	The Book of Judges: A Cross-disciplinary Approach	4

ENGL	456	American Literature and Art	4
FREN	406	17th Century French Literature	4
FREN	407	18th Century French Literature	4
FREN	408	19th Century French Literature	4
FREN	409	20th Century French Literature	4
SPAN	324, 325, 326	Survey of Spanish Literature	3, 3, 3
SPAN	424, 425	Contemporary Spanish Literature	3, 3
SPAN	431, 432, 433	Survey of Latin-American Literature	3, 3, 3

*Registration requires permission of instructor.

Philosophy: 0-8

EDUC	410	Philosophy of Education	3
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	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 speech and writing area must be selected from speech courses.

ENGL	184	Grammar and Style	3
JOUR	245	Newswriting	4
JOUR	341	Magazine Article Writing	4
SPCH	101	Fundamentals of Speech Communication	4
SPCH	207	Small Group Communication	3
SPCH	443	Persuasive Speaking	4
WRIT	324	Creative Nonfiction Writing	3
WRIT	325	Writing for the Professions	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	Introduction to French	4
FREN	102, 103	Elementary French	4, 4
FREN	202, 203	Intermediate French	4, 4
GREK	231, 232, 233	Greek I	3, 3, 3
GREK	331, 332	Greek II	3, 3
GRMN	101	Introduction to German	4
GRMN	102, 103	Elementary German	4, 4
LATN	211, 212, 213	Latin I	4, 4, 4
LATN	311, 312, 313	Latin II	4, 4, 4
SPAN	101	Introduction to Spanish	4
SPAN	102, 103	Elementary Spanish	4, 4
SPAN	222, 223	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 WWC.
- One laboratory science that is not offered at WWC. In this case, the completion of any additional laboratory science will fulfill the requirement.

Mathematics: 4-8

MATH	105	Mathematics with Applications	4
MATH	112, 113	Mathematics for Elementary Teachers	3, 3
MATH	117	Precalculus	5
MATH	121, 122	Fundamentals of 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	4, 4, 4
ASTR	144, 145, 146	General Astronomy Laboratory	1, 1, 1
BIOL	101, 102, 103	General Biology	4, 4, 4
BIOL	105, 106	Biology for General Studies	4, 4

BIOL	201, 202	Anatomy and Physiology	4, 4
BIOL	407	Philosophy of Science	4
CHEM	101, 102, 103	Introductory Chemistry	4, 4, 3
CHEM	141, 142, 143	General Chemistry	3, 3, 3
CHEM	144, 145, 146	General Chemistry Laboratory	1, 1, 1
**ENVI	385	Environmental Stewardship	4
GEOL	101, 102	Physical Geology	4,4
PHYS	201, 202	Invitation to Physics	3, 3
PHYS	204, 205	Invitation to 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 6 quarter hours must be from upper-division courses.

A minimum of 6 quarter hours must be from biblical studies (courses with the RELB prefix).

Students, except for Engineering and Nursing, who are acquiring a Baccalaureate degree, will be required to 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 transfer students from Seventh-day Adventist, regionally-accredited colleges:

Students may transfer any number of religion credits according to current practices governing transfer equivalents. Students must meet all above mentioned religion requirements of Walla Walla College.

Adjusted requirements for transfer students from non-Seventh-day Adventist, regionally-accredited colleges:

For those who will need a maximum of 48 credit hours (inclusive of religion) to complete their degree at Walla Walla College the following adjustments apply:

A maximum of 3 hours of religion may be transferred upon initial admission.

9 quarter hours of religion/theology at Walla Walla College are required;

3 of the 9 must be in Biblical Studies (RELB) courses;

3 of the 9 must be upper-division.

For those who will need a maximum of 49-96 credit hours (inclusive of religion) to complete their degree at Walla Walla College the following adjustments apply:

A maximum of 6 hours may be transferred upon initial admission.
12 quarter hours of religion/theology at Walla Walla College are required;
6 of the 12 must be in Biblical Studies (RELB) courses;
6 of the 12 must be upper-division.

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	216	Messages of Paul	4
RELB	221	Interpreting the Bible	4
RELB	301	Old Testament History	3
RELB	302	Pentateuch	4
RELB	303	Old Testament Psalms, Stories, & Wisdom	3
RELB	304	Hebrew Prophets I	4
RELB	305	Hebrew Prophets II	4
RELB	333	Biblical Perspectives on Healing	4
RELB	412	Daniel and Revelation	4
RELB	438	The Synoptic Gospels	3(4)*
RELB	439	Luke-Acts	3(4)*
RELB	454	Literature of the Bible	4
RELB	455	The Book of Judges: A Cross-disciplinary Approach	4
RELB	464	Thessalonians and Corinthians	3(4)*
RELB	465	New Testament Prison, Pastoral and General Letters	3(4)*
RELB	466	Galatians and Romans	3

Electives in Religion or Theology: 0-14

RELH	205	Biblical Archaeology	4
RELH	303	World Religions	3(4)*
RELH	402	Modern Denominations	3
RELH	406	History of the English Bible	2
RELH	455	Early Church History	3
RELH	457	History of Adventism	3
RELM	233	Introduction to Cross-Cultural Ministry	3
RELT	110	Seventh-day Adventist Belief and Practice	4
RELT	201	The Christian Way of Salvation	4
RELT	202	Christian Beliefs	4
RELT	242	Christian Apologetics	3
RELT	248	Christian Ethics	4
RELT	314	Christian Hope	3
RELT	321	Christian Spirituality	3
RELT	330	Christian Discipleship	3
RELT	340	Theology of Spiritual Care	4
RELT	412	Philosophy of Religion	4

RELT	417	Inspiration and Revelation	3
SOCI	449	Sociology of Religion	2

* See course description for credit clarification.

GENERAL STUDIES HONORS PROGRAM

The General Studies Honors 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 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, they follow an interdisciplinary approach to stress the unity of knowledge, and the classes are more personalized and typically are small, and some classes are team-taught.

Students finishing the program with a 3.25 cumulative honors G.P.A. receive a 13-16 hour tuition grant and, at graduation, are designated as "General Studies Honors Graduates."

Admission Requirements. The Admissions Committee considers high school grade-point average (generally 3.50 or higher), ACT test scores or equivalent, an essay submitted by the student as part of his application, and on occasion, personal interviews with applicants and recommendations from teachers. Students already enrolled in college may also apply to the program. The Honors Committee will review all applications and supporting data and notify those students who are accepted.

Students not currently in the Honors Program may petition the General Studies Honors Committee to enter a specific honors class. Petitions must be submitted to the Honors Committee chair prior to the close of registration. Class size permitting, students may be admitted on the basis of grade-point average, ACT scores, and writing skills.

Program Requirements. The following requirements must be met to complete the honors program: a cumulative grade-point average of 3.25 or better in honors courses (students who drop below 3.25 in honors courses for two consecutive quarters will be dropped from the program), and completion of at least 35 quarter hours of honors courses (listed below) including Western Thought (HONR 131, 132, 133), Research College Writing (HONR 243), Science and the Arts (HONR 310 plus either 311 or 312), and Seminar (HONR 496, 497, 498). Students who complete three quarters of Latin (LATN 211, 212, 213) will receive four hours credit toward fulfillment of honors requirements. Students who complete three quarters of Greek (GREK 231, 232, 233) will receive three hours credit toward fulfillment of honors requirements. Students must also take either MATH 123 or MATH 181 as a program requirement.

HONORS COURSES (HONR)

HISTORY AND SOCIAL SCIENCE

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 or HONR 133.)

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. Satisfies 4 hours of general studies social science or 4 hours religion. Prerequisite: HONR 131 and either HONR 132 or HONR 133, or permission of instructor.

HUMANITIES

HONR 310, 311, 312 SCIENCE AND THE ARTS **4, 4, 4**
Study of historical science and its relationship to the humanities through three successive periods: Classical period through the Renaissance, 18th and 19th centuries, and modern and postmodern periods. Laboratory required. Completion of all three quarters satisfies 8 hours laboratory science and 4 hours humanities (fine arts) or 8 hours humanities (4 fine arts, 4 philosophy) and 4 hours science. Students who take two quarters receive credit for 4 hours of science and 4 hours humanities. Students who take one quarter receive credit for 4 hours of humanities. Prerequisites: HONR 131 and either HONR 132 or 133; or permission of instructor; MATH 123 or 181. Contingent on enrollment.

LANGUAGE ARTS

HONR 141, 142 COLLEGE WRITING **3, 3**
Advanced college writing designed to integrate writing with readings of significant classic and contemporary texts which complement the general studies honors curriculum. Satisfies College Writing 121, 122 requirement.

HONR 243 HONORS RESEARCH WRITING **3**
Advanced research writing designed to integrate writing with the general studies curriculum. Students research a major issue in classic or contemporary thought and write a documented paper using primary source material. Prerequisite: HONR 142 or equivalent and admission to the Honors Program.

RELIGION

HONR 281, THE BIBLE AND ITS ENVIRONMENTS **4**
Study of certain 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 349 RELIGION IN SOCIAL CONTEXTS **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. Satisfies 4 hours of general studies social science or 4 hours religion.

SEMINAR

HONR 496, 497, 498 HONORS SEMINAR **1, 1, 1**
Seminar that 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 towards overall general studies requirements, but not to the minimum in any specific area. 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:

Areas	Hours Minimum/Maximum in specific subject areas	Hours Minimum/Maximum 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

Select a minimum of 32 quarter hours for the Associate degree.

PREPROFESSIONAL PROGRAMS

Programs are offered in a wide variety of fields to prepare students for admission to professional schools or to enter upon technical careers. Students wishing to secure admission to such schools should familiarize themselves with the admission requirements of the school of their choice. Most preprofessional curriculums require two units of high school mathematics (algebra and geometry). The following preprofessional curricula are detailed in the Preprofessional Programs section of this bulletin:

Architecture (2)*
Chiropractic (2)
Cytotechnology (2)
Dental Hygiene (2)
Dentistry (3)
Emergency Medical Care/ Cardiopulmonary Sciences (2)
Health Information Administration (2)
Law (4)
Medicine (4)
Medical Technology (4)
Nutrition and Dietetics (2)
Occupational Therapy (2)
Occupational Therapy Assistant (1)
Optometry (2)
Osteopathy (3)
Pharmacy (2)
Physical Therapy (3)
Physical Therapy Assistant (1)
Physician Assistant (2)
Public Health (4)
Radiological Technology (1)
Respiratory Therapy (1)
Speech-Language Pathology and Audiology (2)
Veterinary Science (4)

* Numbers in parenthesis indicate the years of study normally required on the Walla Walla College campus before acceptance into a professional school.

TRANSITIONAL COURSES

The transitional courses are designed for freshman students who have been accepted by the College with an inadequate background for attempting a full academic program. It consists of ENGL 100, GNRL 100, MDEV 003, NRSG 100, and RDNG 100. Students are registered for these courses on the basis of test scores from their entrance examinations and/or secondary school grades. Credit received from the courses in this curriculum do not apply to the 192 quarter hours for graduation. However, they do count towards the minimum study load for a term (see Study Load section of this Bulletin).

The Director of Academic Advisement closely advises and schedules regular academic counseling sessions for all students in this program. This counseling procedure continues throughout the freshman year, although most transitional students are able to carry a full college load by the beginning of the winter quarter.

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 informa-

tion 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

The third numeral will indicate course sequencing. Courses in which the third numerals are 1, 2, and 3, must be taken in sequence.

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 College 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 College 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.

When courses specify that they are offered odd or even years, "odd or even" refers to the year in which the academic Bulletin takes effect.

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 college level work. Credit will not apply toward graduation, but will apply to financial aid minimums and for deferment of educational loans.

Remedial courses taken and grades received will appear on the quarterly grade report and WWC transcript. However, since these courses are not college level, they will not calculate into the college GPA, academic probation status, or class level requirements.

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 WWC equivalent, but can be used for major/minor. 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 WWC equivalent, but can be used for 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 **1-4; 6**

280; 370; 490 DIRECTED FIELD WORK/PRACTICUM/ EXPERIENCE **2-16**

392 GENERAL SECONDARY METHODS COURSE (see Education) **2**

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.

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 Office of the Associate Vice President for Academic Administration. 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**

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. See Architecture program listed in the preprofessional section of this bulletin.

MAJOR IN ART (Bachelor of Arts)

A student majoring in art must complete the 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.

Core Requirements:

ART	161, 162, 163	Design	9
ART	184, 185, 186	Introduction to Drawing I, II, III	6
ART	194, 195, 196	Introduction to Painting I, II, III	12
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	324, 325, 326	History of World Art	9
			36

CONCENTRATION: Commercial Art

ART	244, 245, 246	Commercial Art	6
ART	194, 195, 196	Introduction to Painting I, II, III	*8
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	
ART	344, 345, 346	Advanced Design	9
			23

* 4 hours must be upper division.

Cognates: Commercial Art

GRPH	255	Desktop Publishing	4
HIST	120, 121	History of Western Civilization	8
PHTO	156	Principles of Photography	3
PHTO	255	Intermediate Photography	3

CONCENTRATION: Fine Art

ART	344, 345, 346	Advanced Design	9

Electives chosen from courses listed below (limited to 5 areas):

ART	194, 195, 196	Introduction to Painting I, II, III	*14
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, VI	

* 6 hours must be upper division. 23

Cognates: Fine Art

ENGL	358	Classical Literature	4
HIST	120, 121	History of Western Civilization	8
RELH	205	Biblical Archaeology	3-4
or			
ENGL	313	Aesthetics in Image and Text	
RELT	248	Christian Ethics	4
or			
PHIL	205	Introduction to Philosophy	

MINOR IN ART

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

Approval of art adviser required. 33

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. Offered even years only.

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 fee $15)

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 fee $20)

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 fee $20)

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 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 fee $20)

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. Offered odd years only.

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 fee $15)

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 fee $20)

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 fee $10)

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

Scott Ligman, Chair; David Cowles, Joe Galusha, David Lindsey, Jim Nestler, Joan Redd, Gene Stone.

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 department 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 Marine Station at Rosario Beach, adjoining Deception Pass State Park, Anacortes, Washington. For further information, including a brochure, contact the department, or rosario@wwc.edu.

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

MAJOR IN BIOLOGY (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. Candidates for this degree who plan to do graduate work in biology should counsel with the assigned academic adviser concerning the need of a foreign language. One summer term (10 credits) at the WWC Marine Station is required during which at least one upper-division, marine-oriented course must be taken. Senior students are required to take the Major Field Achievement Test (MFAT) examination in biology.

Major Requirements:

BIOL	101, 102, 103	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

10 upper division credits are required to be taken at the WWC Marine Station 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 374 Animal Behavior
BIOL 384 Sociobiology
BIOL 389 Natural History of Vertebrates
BIOL 403 Ornithology
BIOL 462 Ichthyology
BIOL 464 Animal Physiology
BIOL 468 Comparative Physiology
BIOL 475 Marine Invertebrates

Environmental Biology:
BIOL 360 Survey of the Plant Kingdom
BIOL 374 Animal Behavior
BIOL 384 Sociobiology
BIOL 389 Natural History of Vertebrates
BIOL 403 Ornithology
BIOL 426 Systematic Botany
BIOL 458 Marine Biology
BIOL 460 Marine Ecology
BIOL 462 Ichthyology
BIOL 463 Marine Phycology
BIOL 475 Marine Invertebrates

Functional Biology:
BIOL 394 Developmental Biology
BIOL 449 Vertebrate Histology
BIOL 464 Animal Physiology
BIOL 466 Immunology
BIOL 468 Comparative Physiology

Marine Biology:
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 Survey of the Plant Kingdom
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
INFO 105	Personal Computing	3
or		
CPTR 141	Introduction to Programming	4
MATH 117	Precalculus	5
or		
MATH 121, 122	Fundamentals of 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.)

See the Interdisciplinary section of this Bulletin for the following majors:

MAJOR IN BIOCHEMISTRY (Bachelor of Science)

MAJOR IN BIOENGINEERING (Bachelor of Science)

MAJOR IN BIOPHYSICS (Bachelor of Science)

MAJOR IN ENVIRONMENTAL SCIENCE (Bachelor of Science)

MINOR IN BIOLOGY

A student minoring in biology must complete 27 quarter hours.

BIOL	101, 102, 103	General Biology	12
		One of the following botanical courses: BIOL 360, 426, 463	3-5
		One of the following zoological courses: BIOL 374, 384, 389, 403, 449, 462, 464, 468, 475	3-5
		Electives	5-9
			27

Approval of biology adviser required.

BIOLOGY (BIOL)

BIOL 101, 102, 103 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 chemistry strongly recommended.

BIOL 105, 106 BIOLOGY FOR GENERAL STUDIES 4, 4

The process of science as a way of knowing, through a study of selected biological phenomena in an historical context. The laboratory emphasizes the process of science. One laboratory per week. Must be taken in sequence. Will not apply on biology major or minor.

BIOL 201, 202 ANATOMY AND PHYSIOLOGY 4, 4

Study of human (organ-system) anatomy and physiology with reference to cellular, genetic, and developmental relationships. First quarter studies include integumentary, skeletal, muscle, nervous, and endocrine systems. Second quarter focuses on circulatory, respiratory, digestive, urinary, and reproductive systems. Must be taken in sequence. One laboratory per week. Will not apply to biology major. Students taking both BIOL 101, 102, 103, and BIOL 201, 202 will receive only 16 credits toward graduation. High school or college chemistry strongly recommended. (Course fee $10)

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 103.

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. Does not apply to biology major. Prerequisites: CHEM 101, 102 or BIOL 101, 102 or permission of instructor.

BIOL 250 BIOSTATISTICS 4
Practice and theory of statistical methods in quantitative biology. Prerequisites: MATH 121, 122; INFO 105 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 103 and permission of instructor. Graded S or NC.

BIOL 101, 102, 103 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 fee $40)

BIOL 316 INTRODUCTION TO BIOLOGICAL RESEARCH II 1-2; 2
The student will work with 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 SURVEY OF THE PLANT KINGDOM 4
Study of life histories, internal anatomy, and physiology of the various members of the plant kingdom. One laboratory per week. Offered on demand.

BIOL 374 ANIMAL BEHAVIOR 4 or 5
Introduction to animal behavior with emphasis on the historical perspective and classical experiments. Contributions from diverse disciplines such as neurophysiology, ecology, endocrinology, sociology, anatomy, and medicine are drawn together to illustrate the dependence of ethology and animal behavior on the other life sciences. One laboratory per week. (College Place campus — 4 quarter hours; Marine Station — 5 quarter hours.) Offered on demand.

BIOL 384 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 389 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; Marine Station — 5 quarter hours.) Offered every 3 - 4 years at Marine Station. A weekend field trip is required. Offered odd years only. (Course fee $40) Will be offered 2005-2006.

BIOL 392, 393, 394 should be taken in sequence.

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 394 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 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; Marine Station — 5 quarter hours.) A weekend field trip is required. Offered even years only. (Course fee $40)

BIOL 407 PHILOSOPHY OF SCIENCE (OR PHIL 407) 4
Study of the scientific method as it relates to primary origins and present-day distributions of living things. Evidences from archeology and the physical and biological sciences are examined. Will not apply on biology major. Prerequisite: A completed general education science requirement.

BIOL 416 RESEARCH IN BIOLOGY 1-4; 4
The student will work with 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 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. Two laboratories per week. (College Place campus — 4 quarter hours; Marine Station — 5 quarter hours.) Offered on demand.

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; Marine Station — 5 quarter hours). Offered even years only.

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 103 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 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 on demand.

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 103; 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.

MARINE STATION:
BIOL 101, 102, 103 or equivalent is prerequisite for all courses listed below. Marine Station courses of 5 credits include an additional credit for the requirement of a research problem (See BIOL 374, BIOL 389, BIOL 403, BIOL 426,). Normally a maximum of two of the following courses are taught during a summer; see annual Marine Station bulletin.

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. Course is offered at the Marine Station.

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. Research project and field trips required.

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.

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

* Qualifies as a marine-oriented course.

SCHOOL OF BUSINESS

Clarence Anderson, Dean; Duane Anderson, Norman Anderson, Lynn Boyd, Andrew Dressler, Dana Thompson, Bruce Toews, JoAnn Wiggins.

The School of Business is nationally accredited by the Association of Collegiate Business Schools and Programs to offer the following business degrees:

- Bachelor of Business Administration degree with concentrations in Accounting, Computer Information Systems, Finance, Human Resource Management, International Business, Management, Marketing, and Small Business Management.
- Bachelor of Arts degree with a major in Business Administration.
- Bachelor of Science degree with a major in Computer Information Systems

The courses and programs offered by the School of Business are designed to provide, within the context of a liberal arts tradition and Seventh-day Adventist Christian values and ethics, professional education necessary to succeed in the competitive business environment.

The objectives are:

- to provide students the skills and knowledge needed to successfully pursue careers and/or graduate studies in business;
- to develop in students the capacity to think independently, analytically, and creatively;
- to stimulate the development of students' religious, moral, and ethical values;
- to encourage students to have a commitment to life-long learning;
- 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 enhance students' abilities to communicate clearly and effectively;
- to prepare students for positions of service within organizations associated with the Seventh-day Adventist church.

General Recommendations. To be successful in the cognate mathematics requirement, students should complete two years of high school algebra and one year of geometry. A course in keyboarding is desirable. In addition, a course in office machines would prove advantageous in several types of business environments.

Degrees Offered. The School of Business offers a Bachelor of Business Administration degree (BBA) with opportunity to concentrate in the areas of accounting, computer information systems, finance, human resource management, international business, management, marketing or small business management. No minor is required.

A Bachelor of Science degree in Computer Information Systems combines computer technology and business to prepare students for positions as programmers, systems analysts, and network administrators. No minor is required.

A Bachelor of Science degree in Business Education is offered for students who wish to teach business subjects in high school or in corporate training and development programs. No minor is required.

A Bachelor of Arts 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 is 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, business education, computer information systems, economics, 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 who anticipate graduate study in business areas or economics should note the specific requirements of the various schools to which they intend to apply. In general, it is recommended that a minimum of one quarter of calculus be included in the undergraduate program. Curricula of a quantitative nature usually require a year of calculus and additional mathematics courses.

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

A student seeking the BBA degree must complete 65 quarter hours of core requirements and a 39 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. All Business students must demonstrate skills in keyboarding.

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	263	Business Statistics	4

Upper Division Courses:

CIS	301	Management Information Systems	4
FINA	351	Financial Management	4
GBUS	361, 362	Business Law I, II	8
GBUS	366	Operations Management and Production	4
GBUS	370	Organizational Communication	4
GBUS	463	Business Environment and Ethics	3
GBUS	495	Colloquium (6 quarters required or number of quarters in residence at WWC, whichever is less)	
MGMT	371	Principles of Management	4
MGMT	489	Strategic Management	4
MKTG	381	Principles of Marketing	4
			65

Cognates:

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

*Prerequisites Required

CONCENTRATION: Accounting

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 (minimum of 90 hours of co-op required)	0-3
	* Electives	0-3
ACCT	**Electives (must be upper division)	12
		39

*Electives must be approved by the School of Business Adviser.
**Three of the following courses are required:

ACCT 341	Accounting Information Systems
ACCT 350	Not-for-Profit and Government Accounting
ACCT 421	Advanced Accounting
ACCT 435	Advanced Income Tax

Certified Public Accountant Tracks

In most states, 225 quarter (150 semester) hours are required to become a CPA. The effect of this requirement is to add 33 quarter hours above the Walla Walla College degree of 192 quarter hours. The specific education requirements to become a CPA 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 in one of the following ways:

CPA TRACK 1: BBA with an accounting concentration and the following courses:

- Accounting electives not taken in concentration. Choose from ACCT 341, 350, 421, 435, 494 — 8
- Computer Courses — 8
- WRIT 325, Writing for the Professions — 3
- FINA 451, Investments — 4
- FINA 441, Financial Institutions and Markets — 4
- Electives — 6

CPA TRACK 2: Individually tailored program.

Double Concentration: A second BBA concentration. Computer information systems, finance, or management are particularly useful.

Graduate School: Master of Accountancy, Master of Taxation, Master of Science in Computer Information Systems, or Master of Business Administration.

CONCENTRATION: Computer Information Systems (CIS)
(For all options)

CIS	130	Programming for Business I	4
CIS	230	Programming for Business II	4
CIS	290	Introduction to Network Administration	4
CIS	315	Systems Analysis and Design	4
CIS	350	Telecommunications	4
CIS	489	E-Commerce Systems Development	4
			24

Option 1
(Systems Development)

CIS	330	Programming for E-commerce	4
CIS	440	Database Management Systems	4
		*Electives	7
			15

Option 2
(Systems Support)

CIS	390	Intermediate Network Administration	4
CIS	450	Advanced Network Administration	4
		*Electives	7
			15

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

CONCENTRATION: Finance

ACCT	321, 322	Intermediate Accounting	7
FINA	365	Insurance	4
FINA	367	Real Estate	4
FINA	441	Financial Institutions and Markets	4
FINA	451	Investments	4
FINA	488	International Trade and Finance	4
		Upper division ACCT Electives	4
		*Electives	8
			39

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

CONCENTRATION: Human Resource Management

MGMT	372	Human Resource Management	4
MGMT	373	Organizational Behavior	4
MGMT	376	Employee Placement and Compensation Management	4
MGMT	377	Employee and Management Relations	4
MGMT	472	Training and Development	4
MGMT	476	Motivation and Leadership	4
MGMT	494	Cooperative Education/Internship (Minimum of 120 hours of co-op required)	0-4
		*Electives	11-15
			39

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

CONCENTRATION: International Business
(One quarter of study abroad is required)

FINA 441	Financial Institutions and Markets	4
FINA 488	International Trade and Finance	4
MGMT 488	International Management	4
MKTG 488	International Marketing Strategy	4
	Foreign Language 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.	8-12
	*Electives (4 from an approved area other than Business).	11-15
		39

*Electives may be chosen from RELH 303, RELM 233, SOCI 204; any political science, geography or history (excluding U.S. history); business, and modern language.

CONCENTRATION: Management

MGMT 372	Human Resources Management	4
MGMT 373	Organizational Behavior	4
MGMT 476	Motivation and Leadership	4
MGMT 488	International Management	4
	*Electives (12 must be upper division)	23
		39

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

CONCENTRATION: Marketing

MKTG 383	Principles of Advertising	4
MKTG 384	Consumer Behavior	4
MKTG 451	Market Survey Methods	4
MKTG 481	Public Relations	4
MKTG 487	Marketing Management	4
MKTG 488	International Marketing Strategy	4
	*Electives	15
		39

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

CONCENTRATION: Small Business Management

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 372	Human Resource Management	4
MGMT 373	Organizational Behavior	4
	*Electives	16
		39

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

MAJOR IN BUSINESS EDUCATION (Bachelor of Science)

A student majoring in business education must complete 84 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Students must demon-

strate skills in keyboarding and the use of 10-key business calculators. Students seeking certification should consult with the certification office in the School of Education and Psychology for updated information regarding certification.

ACCT 201, 202, 203	Principles of Accounting	10
BUED 395	Methods of Teaching Business Educ Subjects	4
BUED 494	Cooperative Education/Internship	1
CIS 130	Programming for Business I	4
CIS 140	Computer Business Applications	4
CIS 301	Management Information Systems	4
ECON 211	Principles of Macroeconomics	4
ECON 212	Principles of Microeconomics	4
FINA 101	Personal Finance	2
GBUS 160	Introduction to Business	4
GBUS 361	Business Law I	4
GBUS 370	Organizational Communication	4
GBUS 463	Business Environment and Ethics	3
GBUS 495	Colloquium (6 quarters required or number of quarters in residence at WWC, whichever is less.)	
MGMT 371	Principles of Management	4
MGMT 373	Organizational Behavior	4
MGMT 472	Training and Development	4
MKTG 381	Principles of Marketing	4
MKTG 384	Consumer Behavior	4
	*Electives	12
		84

Cognates:

INFO 105	Personal Computing	3
MATH 206	Applied Statistics	4
PSYC 489	Career and Lifestyle Development	3
		10

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

MAJOR IN COMPUTER INFORMATION SYSTEMS (Bachelor of Science)
A student majoring in computer information systems must complete 105 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. All students must demonstrate skills in keyboarding, word processing, spreadsheets, and databases.

Major Requirements:

ACCT 201, 202, 203	Principles of Accounting	10
ACCT 341	Accounting Information Systems	4
CIS 130	Programming for Business I	4
CIS 230	Programming for Business II	4
CIS 140	Computer Business Applications	4
CIS 290	Introduction to Network Administration	4
CIS 301	Management Information Systems	4
CIS 315	Systems Analysis and Design	4
CIS 330	Programming for E-Commerce	4
CIS 350	Telecommunications	4

CIS	390	Intermediate Network Administration	4
CIS	440	Database Management Systems	4
CIS	450	Advanced Network Administration	4
CIS	489	E-Commerce Systems Development	4
ECON	211	Principles of Macroeconomics	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	Organizational Communication	4
GBUS	463	Business Environment and Ethics	3
GBUS	495	Colloquium (6 quarters required or number of quarters in residence at WWC, whichever is less.)	
MGMT	371	Principles of Management	4
MKTG	381	Principles of Marketing	4
		**Electives	8
			105

Cognates:

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

*Prerequisites Required

**Electives may be chosen from CIS, other Business courses, CPTR, GRPH and must be approved by the School of Business adviser.

MAJOR IN BUSINESS ADMINISTRATION (Bachelor of Arts)

A student majoring in business administration must complete 61 quarter hours in the major, the required cognates, a minor, 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. All business students must demonstrate skills in keyboarding.

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	263	Business Statistics	4

Upper Division Courses:

FINA	351	Financial Management	4
GBUS	361	Business Law I	4
GBUS	370	Organizational Communication	4
GBUS	463	Business Environment and Ethics	3
GBUS	495	Colloquium (6 quarters required or number of quarters in residence at WWC, whichever is less.)	
MGMT	371	Principles of Management	4
MGMT	489	Strategic Management	4

MKTG 381	Principles of Marketing	4
	*Electives (4 must be upper division)	8
		61

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

Cognates:

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

*Prerequisites Required

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. All business students must demonstrate skills in keyboarding.

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 361	Business Law I	4
	*Electives	22
		46

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

Cognates:

MATH 105	Mathematics With Applications	4-5
or		
MATH 117	Precalculus	
or		
MATH 121	Fundamentals of Mathematics I	

MINOR IN BUSINESS

ACCT 201,202,203	Principles of Accounting	10
ECON 211	Principles of Macroeconomics	4
ECON 212	Principles of Microeconomics	4
	*Electives (8 must be upper division)	12
		30

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

MINOR IN BUSINESS EDUCATION

Students must demonstrate skills in keyboarding and the use of 10-key business calculators.

ACCT 201	Principles of Accounting	4
BUED 395	Meth of Teaching Business Education Subjects	4
CIS 140	Computer Business Applications	4

ECON	211	Principles of Macroeconomics	4
FINA	101	Personal Finance	2
GBUS	160	Introduction to Business	4
MGMT	371	Principles of Management	4
MGMT	373	Organizational Behavior	4
			30

MINOR IN COMPUTER INFORMATION SYSTEMS

CIS	130	Programming for Business I	4
CIS	140	Computer Business Applications	4
CIS	301	Management Information Systems	4
CIS	315	Systems Analysis and Design	4
		*Electives (4 must be in Accounting)	14
			30

MINOR IN ECONOMICS

ECON	211	Principles of Macroeconomics	4
ECON	212	Principles of Microeconomics	4
ECON	441	Financial Institutions and Markets	4
ECON	488	International Trade and Finance	4
FINA	451	Investments	4
		*Electives (6 must be upper division)	10
			30

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

MINOR IN MARKETING

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)	10
			30

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

ACCOUNTING (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. Courses must be taken in sequence.

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

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. Prerequisites: 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 ADVANCED INCOME TAX 4
Study of United States federal income taxation of corporations, partnerships, and fiduciaries. Prerequisite: ACCT 335.

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

BUSINESS EDUCATION (BUED)

BUED 395 METHODS OF TEACHING BUSINESS EDUCATION SUBJECTS 4
Survey of the objectives, methods, and techniques of teaching business education subjects in the secondary school; requires observation, demonstration, and class presentations. Offered on demand.

BUED 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4
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. Graded S or NC. No credit will be allowed toward the major for the BA in Business. Prerequisite: Approval by School of Business faculty.

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 130 PROGRAMMING FOR BUSINESS I 4
An introductory course in program design, development and structure for business applications, in an object-oriented environment.

CIS 230 PROGRAMMING FOR BUSINESS II 4
Additional business programming concepts and techniques, with a focus on updating files, accessing databases and creating object classes. Prerequisite: CIS 130 or CPTR 141. Offered even years only.

CIS 140 COMPUTER BUSINESS APPLICATIONS 4
Fundamental and intermediate spreadsheet and database software applications emphasizing problem solving for business. Prerequisite: Working knowledge of personal computers, Microsoft Windows, and word Processing.

CIS 290 INTRODUCTION TO NETWORK ADMINISTRATION 4
A study of network administration using a local area network operating system. Covers network concepts, installation, organization of the server and workstations, and management and enhancement of the network. Prerequisites: CIS 120, CIS 130 or permission of instructor.

CIS 301 MANAGEMENT INFORMATION SYSTEMS 4
Survey of the fundamental concepts of the computer as a tool for the individual and business and an overview of Information Systems for E-Commerce. Topics include the history of computers, technology, societal and ethical issues and structure of information systems that support a wide range of organizational functions. Includes the development, operation, and evaluation of information systems, along with ethical, managerial, and international issues. Prerequisite: CIS 140.

CIS 315 SYSTEMS ANALYSIS AND DESIGN 4
A study of the systems development life cycle of analysis, design, development, implementation and evaluation. This course emphasizes analysis and design of information systems to meet today's business needs. Prerequisite: CIS 130. Offered even years only.

CIS 330 PROGRAMMING FOR E-COMMERCE 4
Advanced programming concepts and techniques with a focus on client server computing for E-Commerce. The class will use Visual Basic, JavaScript, XHTML, or other web oriented tools. Prerequisite: CIS 230. Offered even years only.

CIS 350 TELECOMMUNICATIONS 4
Study of telecommunication technology, ethics, devices, and industry. Includes telephone-related services, voice mail, teleconferencing, facsimile transmission, electronic mail, advanced networking technologies, data communications, cellular services, and data security. Prerequisite: CIS 120 or permission of instructor.

CIS 390 INTERMEDIATE NETWORK ADMINISTRATION 4
An intermediate course in the tools of E-Commerce, including installation, configuration, and maintenance of the hardware and software of a local area network, Internet protocols, web servers, and Internet service providers. Prerequisites: CIS 130 and CIS 290.

CIS 440 DATABASE MANAGEMENT SYSTEMS 4
Concepts and methods in the management of the organizational data resource. Includes database management objectives, selection, acquisition, design, definition, creation, update, maintenance, revision, and use; role of the database administrator; database integrity, security, and privacy. Prerequisite: CIS 140, CIS 301, 315 strongly recommended.

CIS 450 ADVANCED NETWORK ADMINISTRATION 4
Advanced study of the networking and Internetworking environment. This course includes such topics as middleware, multiple networks, security, performance, protocols, and client/server technology. Prerequisite: CIS 390.

CIS 489 E-COMMERCE SYSTEMS DEVELOPMENT 4
A capstone course that integrates the breadth of knowledge of Computer Information Systems and the common body of business knowledge. The primary focus is the development of a computerized information system that solves an organizational information problem. This includes systems analysis and design, programming, database design and development, web page development, client-server computing, and network administration within an organizational environment. Prerequisite: Senior CIS major.

CIS 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4
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. Graded S or NC. No credit will be allowed toward the major for the

B.A. in Business. A reaction paper is required. Prerequisites: Junior or Senior standing and approval by School of Business faculty.

ECONOMICS (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 INSTITUTIONS AND MARKETS (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. Prerequisite: ECON 211 or permission of instructor. Offered even 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, and GBUS 263 or permission of instructor. Offered even years only.

FINANCE (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 FINANCIAL MANAGEMENT 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 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 4
Survey of the basic principles of real estate ownership, acquisition, finance, valuation, investment, property management, and sales. Recommended FINA 351 and GBUS 361, 362. Offered even years only.

FINA 441 FINANCIAL INSTITUTIONS AND MARKETS (OR ECON 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. Prerequisite: ECON 211 or permission of instructor. Offered even years only.

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 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, and GBUS 263 or permission of instructor. Offered even years only.

FINA 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4

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. Graded S or NC. No credit will be allowed toward the major for the BA in Business. A reaction paper is required. Prerequisites: FINA 351 and one other business course approved by adviser and approval by the School of Business faculty.

GENERAL BUSINESS (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.

GBUS 263 BUSINESS STATISTICS 4

Survey of descriptive and inferential statistics with emphasis on business and economics applications. Includes probability, probability distributions, sampling distributions, estimation and hypothesis testing. Prerequisite: MATH 123 or 181. Strongly recommended: CIS 140.

GBUS 361 BUSINESS LAW I 4

An introduction to the judicial system, sources of law, and the legal environment in which individuals and 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 forecasting, linear programming, network models, queues, transportation and assignment problems, inventory models, production scheduling, quality control, layout, and maintenance problems. Prerequisite: GBUS 263.

GBUS 370 ORGANIZATIONAL 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 ENVIRONMENT AND ETHICS 3

Introduces students to the interplay between organizations and their technological, economic, social, and political environments. The impact of a dynamic environment upon the firm is explored, and appropriate organizational responses are assessed. Ethical considerations of business decisions are examined in light of a Christian value system. Case studies. Open to Senior Business majors and minors only.

GBUS 495 COLLOQUIUM 0
Lecture series on current business practice. Business degree candidates must satisfactorily complete six quarters during their sophomore through senior years. Graded S or NC.

MANAGEMENT (MGMT)

MGMT 275 MANAGEMENT OF SMALL BUSINESS 4
Exploration of small business opportunities and an overview from an entrepreneurial perspective of the managerial tools involved in starting, managing, and maintaining a succesful small business venture. Recommended: ACCT203.

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 372 HUMAN RESOURCES MANAGEMENT 4
A survey of objectives and problems associated with personnel management in organizations. Primary emphases include human resources planning and forecasting, job analysis and evaluation, and personnel recruitment. Topics address employee selection and assessment, training and development, performance evaluation, compensation and benefits, grievance procedures, and disciplinary actions. Prerequisite: MGMT 371..

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 376 EMPLOYEE PLACEMENT AND COMPENSATION MANAGEMENT 4
Study of considerations involved in selecting and compensating employees, including legal issues; selection of criteria; testing; health and safety concerns; performance measurements and assessment; salary, wage, and benefit issues. Prerequisite: MGMT 372.

MGMT 377 EMPLOYEE AND MANAGEMENT RELATIONS 4
Study of terminology, laws, court rulings, rights, and procedures as they relate to employees, unions, and management. The responsibility of human resource managers in meeting the expectations of these different stakeholders is emphasized. Prerequisites: GBUS 361, MGMT 371, MGMT 372. Offered even years only.

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 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.

MGMT 488 INTERNATIONAL MANAGEMENT 4
An analysis of organizational and operating problems associated with managing a business across international borders. Prerequisite: MGMT 371. Offered odd years only.

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 organi-

zational settings. Library research, business simulations, in-depth case analyses, and formal presentations required. Prerequisites: business core requirements completed or concurrently taken.

MGMT 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4
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. Graded S or NC. No credit will be allowed toward the major for the BA in Business. A reaction paper is required. Prerequisites: MGMT 371 and one other business course approved by adviser and approval by School of Business faculty.

MARKETING (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.

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 SURVEY METHODS 4
Introduction to collecting market information from secondary and primary sources. The focus of the class is on market surveys: Writing survey instruments, evaluating their effectiveness, data entry and analysis, and developing recommendations for marketing management and business strategies. Recommended: GBUS 263, MKTG 381.

MKTG 481 PUBLIC RELATIONS 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 analyzes a firm's public relations in detail.

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 INTERNATIONAL MARKETING STRATEGY 4
Marketing to and in a global marketplace. Emphasizes the impact different cultures, laws, business practices, perceptions, products, and governments have on the strategic marketing plan. Prerequisite: MKTG 381 or permission of instructor. Offered even years only.

MKTG 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4
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 B.A. in Business. A reaction paper is required. Prerequisites: MKTG 381 and one other business course approved by adviser and approval by School of Business faculty. Graded S or NC.

CHEMISTRY

Steven Lee, Chair; Kyle Craig, Richard Daley, Robert Rittenhouse.

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.

MAJOR IN CHEMISTRY (Bachelor of Arts)

A student majoring in chemistry 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. A minor must be chosen for the Bachelor of Arts degree. Senior students are required to take the Major Field Achievement Test (MFAT) examination in chemistry.

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 351, 352, 353	Physical Chemistry	9
CHEM 354, 355, 356	Physical Chemistry Laboratory	3
CHEM 479	Directed Research/Project	2
or		
CHEM 494	Cooperative Education	
CHEM 496, 497	Chemistry Seminar	2
	*Electives	3
		54

*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
PHYS 211, 212, 213	General Physics	12
PHYS 214, 215, 216	General Physics Laboratory	
or		
PHYS 251, 252, 253	Principles of Physics	
PHYS 254, 255, 256	Principles of Physics Laboratory	

MAJOR IN CHEMISTRY (Bachelor of Science)

A student majoring in chemistry must complete 66 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 Achievement Test (MFAT) examination in chemistry.

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 351, 352, 353	Physical Chemistry	9
CHEM 354, 355, 356	Physical Chemistry Laboratory	3
CHEM 479	Directed Research/Project	3
or		
CHEM 494	Cooperative Education	
CHEM 496, 497	Chemistry Seminar	2
	*Electives	14
		66

*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
PHYS 211, 212, 213	General Physics	12
PHYS 214, 215, 216	General Physics Laboratory	
or		
PHYS 251, 252, 253	Principles of Physics	
PHYS 254, 255, 256	Principles of Physics Laboratory	

MINOR IN CHEMISTRY

A student minoring in chemistry must complete 28 quarter hours; 3 must be upper division. 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 (CHEM)

CHEM 101, 102, 103 INTRODUCTORY CHEMISTRY **4, 4, 3**
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 during the CHEM 101 and 102 courses. (CHEM 101 and 102 course fee $20)

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 fee $20)

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 fee $50)

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 fee $50)

CHEM 351, 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 265.

CHEM 354, 355, 356 PHYSICAL CHEMISTRY LABORATORY 1, 1, 1
Laboratory integrated with CHEM 351, 352, 353. Corequisite: CHEM 351, 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 428 POLYMER CHEMISTRY 3
An introduction to polymers, their characterization and synthesis. One laboratory per week. Prerequisite: CHEM 323. Offered even years only.

CHEM 431 BIOCHEMISTRY OF PROTEINS (AUTUMN) 4
An introduction to the chemistry of proteins, study of catalytic mechanisms of enzymes, and the structure and function of biological membranes. Includes an introduction to lipids, carbohydrates, and nucleic acids. Prerequisite: CHEM 323.

CHEM 432 BIOCHEMISTRY OF METABOLISM (WINTER) 3
An introduction to the metabolism of carbohydrates, lipids, amino acids, and nucleic acids in living organisms. Prerequisite: CHEM 431.

CHEM 433 BIOCHEMISTRY OF NUCLEIC ACIDS (SPRING) 2
Study of RNA and protein synthesis, mechanism of DNA repair, recombination, and recombinant DNA technology including protein synthesis, cloning, construction and use of cDNA libraries, and site-directed mutagenesis. Prerequisite: CHEM 432

CHEM 435 BIOCHEMISTRY OF PROTEINS LABORATORY (WINTER) 1
An introduction to the techniques used in the separation, purification, and characterization of proteins, particularly enzymes. One laboratory per week. Prerequisite: CHEM 431, CHEM 326 or CHEM 336.

CHEM 436 BIOCHEMISTRY OF NUCLEIC ACIDS LABORATORY (SPRING) 2
An introduction to laboratory techniques in nucleic acid biochemistry, with emphasis on molecular cloning and protein expression. Two laboratories per week. Prerequisite: CHWM 435; Corequisite: CHEM 433.

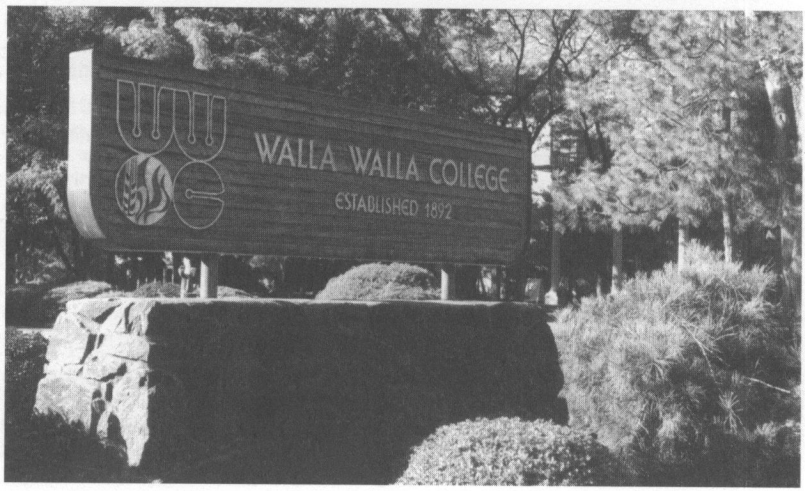
CHEM 442 INORGANIC CHEMISTRY 4
Study of the physical and chemical properties of inorganic and coordination compounds. Emphasis is placed on the use of molecular orbital, ligand field and crystal field theories as tools to understanding the structure and reactivity of inorganic compounds. One laboratory per week. Prerequisites: CHEM 143, 351 or permission of instructor. Offered even years only. Offered on demand.

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 CHEMISTRY SEMINAR 1, 1
Formal introduction to fields of current chemical research. Student will prepare and present papers covering various areas of chemical research as well as attend all Chemistry Colloquia. Prerequisites: CHEM 265; CHEM 323 or permission of instructor.



COMMUNICATIONS

Pamela Harris, Chair; David Bullock, Marilynn Loveless, Nancy Semotiuk, Deborah Silva.

The department's programs are intended to develop articulate Christian communicators while preparing students in communications-related professions. The department offers two majors, with minors in speech communication, journalism, communications, and drama.

The mass communication major is offered through the cooperation of several departments whose courses include mass communication areas. It trains, primarily, those interested in journalism, broadcasting, audio and visual production, public relations, and fund raising. This major also provides a preprofessional foundation that enables students to take advanced work in a specialized communications area such as advertising or marketing.

Students interested in preparing for careers in institutional development (fund raising) are advised to take a major in mass communication (journalism and public relations concentration) or business. Additional electives in communications and business may be selected in consultation with the communications department.

The speech communication major emphasizes public, small group, and interpersonal communication. It is designed for the student intending to teach oral communication or is used as an adjunct to other preparations in which interpersonal and public speech communication skills are particularly important.

MAJOR IN MASS COMMUNICATION (Bachelor of Arts)
A student majoring in Mass Communication must complete the core requirements and one concentration totaling 61 hours, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to complete a senior project.

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 487	Senior Project	1
COMM 496, 497	Seminar in Mass Media	3
JOUR 245	Newswriting	4
JOUR 246	Reporting Methods	3
SPCH 101	Fundamentals of Speech Communication	4
		31

CONCENTRATION: Journalism and Public Relations

COMM 333	Strategies for Fund Raising	4
JOUR 247	Copy Editing	3
JOUR 257	Photojournalism	3
JOUR 341	Magazine Article Writing	4
JOUR 451	Publication Production	4

MKTG 481	Public Relations	4
	Electives (3 must be writing; 4 may be COMM)	8
	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.	30

CONCENTRATION: Media

COMM 301	Audio Production	4
COMM 302	Video Studio Production	4
COMM 303	Video Field Production	4
COMM 352	Broadcasting and Society	4
MKTG 381 or MKTG 383 or MKTG 481	Principles of Marketing / Principles of Advertising / Public Relations	4
	Electives (3 must be writing; may include COMM, JOUR and the following:)	10
SPCH 107	Voice and Articulation	
SPCH 211	Oral Interpretation	
SPCH 242	Acting	
SPCH 252	Play Performance	
SPCH 253	Technical Production	
SPCH 363	History of Theatre	
SPCH 365	Play Direction	
	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.	30

Cognates:

ART 244 or GRPH 268	Commercial Art / Computer Layout and Design	2-3
GRPH 255	Desktop Publishing	4
INFO 105	Personal Computing	3
PHTO 156	Principles of Photography	3

MAJOR IN SPEECH COMMUNICATION (Bachelor of Arts)

A student majoring in Speech Communication must complete 50 quarter hours in the major, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take a departmental comprehensive exam.

Major Requirements:

COMM 145	Mass Communication Media	4
JOUR 245	Newswriting	4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 107	Voice and Articulation	4
SPCH 211	Oral Interpretation	4
SPCH 310	Interpersonal and Nonverbal Communication	3

SPCH 341		Argumentation	4
or			
SPCH 443		Persuasive Speaking	
SPCH 496		Seminar in Speech Communication	2
		Electives (12 must be upper division; may include up to 8 hours from among courses with COMM or JOUR prefixes, or courses cited in the SPCH curriculum but offered by other departments.)	21
			50

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

MINOR IN COMMUNICATIONS

A student minoring in communications must complete 30 quarter hours.

	Electives (selected from COMM, JOUR, 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:

ENGL 215	Introduction to Film Literature	4
PHTO 156	Principles of Photography	3
MKTG 383	Principles of Advertising	4
MKTG 481	Public Relations	4
GRPH 255	Desktop Publishing	4

Approval of communications adviser required.

MINOR IN SPEECH COMMUNICATION

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

SPCH 101	Fundamentals of Speech Communication	4
	Electives (9 must be upper division)	23
		27

Approval of speech communication adviser required.

MINOR IN DRAMA

A student minoring in drama must complete 30 quarter hours.

ART 161	Design	3
SPCH 242	Acting	4
SPCH 252	Play Performance	2
SPCH 253	Technical Production	2
SPCH 363	*History of Theatre	4
SPCH 365	*Play Direction	3
	Electives	12
		30

A minimum of 2 hours required for SPCH 252 and 253. Additional hours may apply as electives. 9 of the 30 hours must be upper division.

* Classes alternate

Electives may be chosen from the following:

ART 244	Commercial Art	2
COMM 302	Video Studio Production	4
ENGL 215	Introduction to Film Literature	4

WRIT 336	*Drama Writing	3
ENGL 358	*Classical Literature	4
ENGL 445	*Shakespeare	3
ENGL 464	*Development of English Drama	3
PEAC 181	Fencing	1
SPCH 107	Voice and Articulation	4
SPCH 211	Oral Interpretation	4

* Classes alternate

Approval of drama adviser required.

MINOR IN JOURNALISM

A student minoring in journalism must complete 27 quarter hours.

COMM 145	Mass Communication Media	4
JOUR 245	Newswriting	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.

COMMUNICATIONS (COMM)

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.

COMM 275 COMMUNICATION THEORY 2

Examination of contemporary thought on the nature and process of communication. Offered on demand.

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, and post-production editing. Emphasis is on multi-camera directing, production planning and visual aesthetics. Includes an introduction to single camera production and video editing. Prerequisites: COMM 231 or 235 or permission of instructor.

COMM 303 VIDEO FIELD PRODUCTION 4

Study and experience in single-camera production, directing and video editing of interview, documentary drama, news, and music video programs. Covers A/B roll special effects editing and an introduction to nonlinear editing. Prerequisite: COMM 302.

COMM 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.

COMM 352 BROADCASTING AND SOCIETY 4
Study of the development and operation of broadcast, cable, and related media and their impact on society. Includes an introduction to audience analysis and an overview of world systems of broadcasting. Offered even years only.

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. Covers nonlinear digital editing. Using advanced techniques, students create professional quality projects for designated uses. Prerequisites: COMM 301, 302, 303. Offered even years only.

COMM 410 VIDEO POST PRODUCTION OPERATIONS 1
Experience and in–depth study of the operation of communication department post-production video and audio facilities. Prerequisites: COMM 301, 302. Offered on demand.

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 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. Graded S or NC.

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 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.

ENGL 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.

MKTG 481 PUBLIC RELATIONS 4
See the Business section of this bulletin.

SOCI 451 RESEARCH METHODS 4
See the Social Work section of this bulletin.

JOURNALISM (JOUR)

JOUR 245 NEWSWRITING 4
Introduction to gathering facts and writing news stories for mass media audiences. Prerequisites: ENGL 121 and 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 PHOTOJOURNALISM 3
Photography for publication; includes composition, cropping, caption writing, and picture-page layout basics. Students are expected to have their own cameras. Prerequisite: PHTO 156 or equivalent. One laboratory per week required. Not a writing elective. (Course fee: $60)

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 350, WRITING FOR PUBLIC INFORMATION 3
An application of news writing principles to public information 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. Offered even years only.

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.

WRIT 325 WRITING FOR THE PROFESSIONS 3
See the English section of this bulletin.

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 ORGANIZATIONAL COMMUNICATION 3
See the Business section of this bulletin.

SPEECH COMMUNICATION (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 (OR TESL 107) 4
Study of and practice in improving the speaking voice. Emphasizes the structure and function of the speech mechanism, quality and effectiveness of voice; stresses developing clear enunciation and articulation. As a guide to correct pronunciation, the International Phonetic Alphabet is also included.

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 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 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.

SPCH 252 PLAY PERFORMANCE 0-4; 4
Analysis, rehearsal, and performance of a play chosen by the instructor. May be taken only by permission of the instructor.

SPCH 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.

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. Offered odd years only.

SPCH 363 HISTORY OF THEATRE 4
Study of the history and development of the theater from the Greek to the twentieth century. Offered even years only.

SPCH 365 PLAY DIRECTION 3
Fundamentals of play direction; each student produces and directs a one-act play or one act from a longer play for public performance. Prerequisite: SPCH 242 or permission of instructor.

SPCH 381, 382, 383 BIBLICAL PREACHING 2, 2, 2
Preparation and delivery of Biblical sermons for worship, evangelism, and special worship occasions. Laboratories and Sabbath speaking appointments included. Prerequisite: SPCH 101.

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 on demand.

SPCH 401 INTRODUCTION TO GENERAL SEMANTICS 2
Study of the use of language to influence human behavior, to solve problems, and to resolve conflicts. Offered even years only.

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 THE RHETORIC OF WESTERN THOUGHT 3
Study of the principles of rhetoric proposed by Aristotle, Quintillian, Cicero, and others; the relationship of the principles of rhetoric to contemporary speechmaking. Prerequisite: SPCH 101. Offered on demand.

SPCH 496, 497 SPEECH COMMUNICATION SEMINAR 1,1
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 (SPPA)

SPPA 210 SURVEY OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY 3
Survey of communication disorders with major emphasis given to the etiologies, symptomatologies, and the recognition of speech, language, voice, and hearing disorders.

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.)

COMPUTER SCIENCE

Anthony Aaby, Chair; Larry Aamodt, 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 concentration in computer engineering, Bachelor of Science in Engineering (B.S.E.) Degree. The School of Business offers a Bachelor of Business Administration degree (B.B.A.) with a concentration in computer information systems (C.I.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 data processing. 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.

The curriculum follows the guidelines of the Association for Computing Machinery and the Institute of Electrical and Electronics Engineers.

MAJOR IN COMPUTER SCIENCE (Bachelor of Arts)

A student majoring in computer science must complete 48 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 MFAT 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 and Algorithms	4, 4
CPTR 215	Assembly Language Programming	3
CPTR 316	Programming Paradigms	4
CPTR 352	Operating System Design	4
CPTR 445	Introduction to Artificial Intelligence	4
CPTR 495	Colloquium (4 quarters required)	0
	Electives (13 must be upper division)	21
		48

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

Cognates:

ELCT 241	Fundamentals of Electronics	4
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

MAJOR IN COMPUTER SCIENCE (Bachelor of Science)

A student majoring in computer science must complete the core requirements and one of the three options including the corresponding cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the MFAT examination. Students planning to go to graduate school in Computer Science should also take the Graduate Record Examination, general and subject (Computer Science) sections.

Core Requirements:

CPTR	141	Introduction to Programming	4
CPTR	142, 143	Data Structures and Algorithms	4, 4
CPTR	215	Assembly Language Programming	3
CPTR	316	Programming Paradigms	4
CPTR	454	Design and Analysis of Algorithms	4
CPTR	495	Colloquium (4 quarters required)	0
CPTR	496, 497, 498	Seminar	1, 1, 1
			26

STANDARD OPTION

This option provides a broad preparation for a career or additional study in computer science. It is designed to meet the CSAB guidelines for computer science.

Computer Science

CPTR	345	Theory of Computation	4
CPTR	350	Computer Architecture	4
CPTR	352	Operating System Design	4
CPTR	425	Introduction to Networking	4
ENGR	354	Digital Logic	3
		Electives	16
			35

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

Cognates:

MATH	181, 281 282, 283	Analytical Geometry and Calculus I-IV	16
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3
MATH	315	Probability and Statistics	4
MATH	341	Numerical Analysis	4
PHYS	251, 252, 253	Principles of Physics	3, 3, 3
PHYS	254, 255, 256	Principles of Physics Laboratory	1, 1, 1
			43

A maximum of 44 hours in the electives and application domain may be taken from a department other than Computer Science.

SOFTWARE SYSTEMS OPTION

This option emphasizes software development, applications, and/or systems programming.

Computer Science

CPTR	352	Operating System Design	4
	or		
CPTR	460	Parallel and Distributed Computation	
CIS	315	Systems Analysis and Design	4
CIS	440	Database Management Systems	4
		Electives	23
			35

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

Cognates

ELCT	241	Fundamentals of Electronics	4
MATH	123	Survey of Calculus	4
MATH	206	Applied Statistics	4
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3
			19

Application Domain

This option requires 30 credit hours in an application domain or a minor. The application domain/minor must be chosen in consultation with and approved by the academic adviser assigned by the department chair.

HARDWARE SYSTEMS OPTION

This option emphasizes the design of computer systems.

Computer Science

CPTR	350	Computer Architecture	4
CPTR	352	Operating System Design	4
CPTR	425	Introduction to Networking	4
ENGR	354	Digital Logic	3
ENGR	355	Embedded System Design	3
		Electives	18
			36

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

Cognates

ENGR	228	Circuit Analysis	4
ENGR	433	Digital Design	4
MATH	181, 281	Analytic Geometry and Calculus I-IV	16
	282, 283		
MATH	250	Discrete Mathematics	4
MATH	289	Linear Algebra and Its Applications	3
MATH	315	Probability and Statistics	4
MATH	341	Numerical Analysis	4
PHYS	251, 252, 253	Principles of Physics	3, 3, 3
PHYS	254, 255, 256	Principles of Physics Laboratory	1, 1, 1
			51

COMPUTER ENGINEERING (Bachelor of Science in Engineering)

See the Engineering section of this bulletin.

COMPUTER PROGRAMMING (Associate of Science)

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

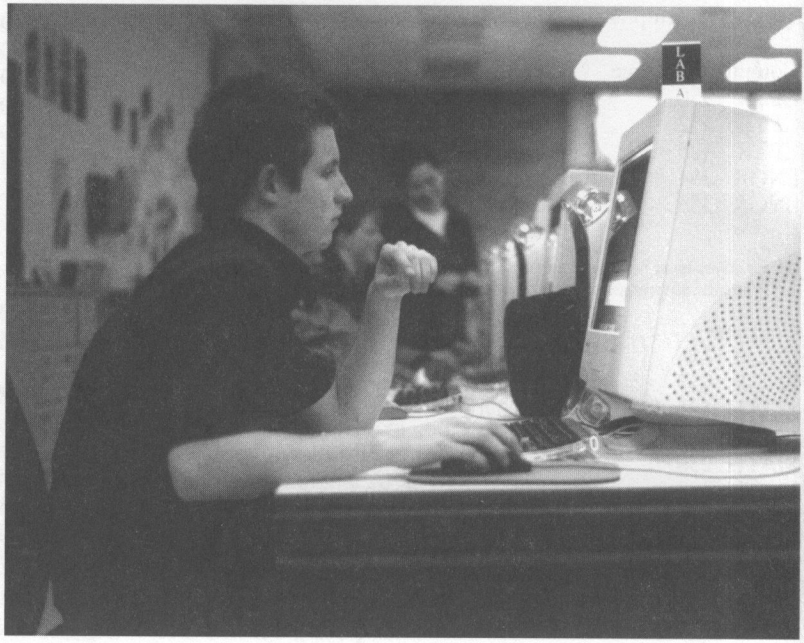
Area Requirements:

CPTR 141	Introduction to Programming	4
CPTR 142, 143	Data Structures and Algorithms	8
CPTR 215	Assembly Language Programming	3
	Electives	38
		53

Electives must be chosen in consultation with and approved by the academic advisor assigned by the department chair and will usually have one of the following prefixes: ACCT, CIS, CPTR, FINA, GBUS, MATH, or MGMT.

Cognates:

MATH 117	Precalculus	5-8
or		
MATH 121, 122	Fundamentals of Mathematics I, II	
MATH 206	Applied Statistics	4
MATH 250	Discrete Mathematics	4
MATH 289	Linear Algebra and Its Applications	3



MINOR IN COMPUTER SCIENCE

A student minoring in Computer Science must complete 30 quarter hours. Three credits must be upper division.

COMPUTER SCIENCE (CPTR)

CPTR 141 INTRODUCTION TO PROGRAMMING 4
Introduction to software engineering principles, computer science and the C family of programming languages. Laboratory work required.

CPTR 142, 143 DATA STRUCTURES AND ALGORITHMS 4, 4
Topics include lists, stacks, queues, trees, graphs, ADTs, sorting and searching, efficiency notations, and hashing. 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 SYSTEM SOFTWARE AND PROGRAMMING 4
Introduction to Unix, system administration, system software including database management systems and web servers, and system programming. Prerequisite: CPTR 141 or CIS 130.

CPTR 245 OBJECT-ORIENTED SYSTEM DESIGN 4
Software design and construction in the context of Object-Oriented Programming libraries. May be taught in C++ or Java. Prerequisite: CPTR 143.

CPTR 316 PROGRAMMING PARADIGMS 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. Prerequisites: CPTR 143, MATH 250.

CPTR 345 THEORY OF COMPUTATION 4
Study of the basic theoretical principles of computer science. Areas covered include automata and formal languages, computability by Turing machines and recursive functions, uncomputability, and computational complexity. Emphasis on practical implications. Prerequisite: MATH 250. Offered odd 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
History, evolution, and philosophies; tasking and processes; process coordination and synchronization; scheduling and dispatch; physical and virtual memory organization; device management; file systems and naming; security and protection; communications and networking; distributed operating systems; and real-time concerns. Laboratory work required. Prerequisite: 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 matrix transform methods to manipulate 2- and 3-dimensional data structures. Graphical operations include scaling, translation, rotation, and reflection. Prerequisites: CPTR 141; MATH 117 or equivalent. Offered even years only.

CPTR 415 INTRODUCTION TO DATABASES 4
Introduction to the design, use, and programming of database systems, and database management system implementation. Prerequisites: CPTR 143, MATH 250.

CPTR 425 INTRODUCTION TO NETWORKING 4
A study of networking algorithms, network architecture, network elements, data link, switching and routing, end-to-end protocols, data security, and programming. Prerequisite: CPTR 352.

CPTR 435 SOFTWARE ENGINEERING 4
Study of the issues involved in building large software systems. Topics include the methods, languages, and tools used in contemporary software development, including process models, project management, metrics, analysis and design, verification and validation, reliability, object-oriented concepts, professionalism and ethics. Prerequisites: CPTR 143, 221.

CPTR 445 INTRODUCTION TO ARTIFICIAL INTELLIGENCE 4
A survey of key concepts and applications of artificial intelligence (AI) and an in-depth experience with a language commonly used for building AI systems. Subtopics include: knowledge representation, state space/searching, heuristic search, expert systems, expert system shells, natural language processing, propositional logic, learning, cognitive models and vision. Prerequisite: CPTR 143.

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 studying the various kinds of classical algorithms. Proof-of-correctness methods are presented. Examples of NP-complete and NP-hard problems are discussed. Prerequisites: CPTR 143 and MATH 250.

CPTR 460 PARALLEL AND DISTRIBUTED COMPUTATION 4
Concurrency and synchronization; architectural support; programming language constructs for parallel computing; parallel algorithms and computability; messages vs. remote procedure calls vs. shared memory models, structural alternatives; coupling; naming and winding; verification, validation, and maintenance issues, fault tolerance and reliability; replication and avoidability; security; standards and protocol; temporal concerns; data coherence; load balancing and scheduling; appropriate applications. Prerequisites: CPTR 143, MATH 289. Offered odd years only.

CPTR 464 COMPILER DESIGN 4
Study of the techniques of translating conventional programming language source into executable machine codes. Topics include lexical analysis, syntactic analysis and parsing, static and runtime storage management, and code generation. Prerequisite: CPTR 143. Offered even years only.

CPTR 494 COOPERATIVE EDUCATION 0-2
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. Computer science degree candidates must satisfactorily complete four quarters, at least one of which must be during the senior year. Graded S or NC.

CPTR 496, 497, 498 SEMINAR 1, 1, 1
Presentation and discussion of current topics of interest with 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 (INFO)

INFO 105 PERSONAL COMPUTING 3
An introduction to personal computing including hardware, operating system, office applications (word processing, spreadsheets, and databases) and the Internet. Does not apply toward a major or minor in computer science. (Course fee $75)

INFO 150 SOFTWARE APPLICATION 1
Study of application software from a user perspective. Topics vary and may be repeated for credit when topics vary. Prerequisites vary depending on the software package and level. See Class Schedule. (Course fee $25)

INFO 240 WEB TECHNOLOGY 1
Study of web technologies from a web development perspective. Topics vary and may be repeated for credit. Prerequisite: Permission of instructor. (Course fee $25)

INFO 250 SYSTEM SOFTWARE 1
Study of system software from a user and/or administrative perspective. Topics vary and may be repeated for credit when topics vary. Prerequisite: Permission of instructor.

COMPUTER INFORMATION SYSTEMS (CIS)

See the Business section of this bulletin.

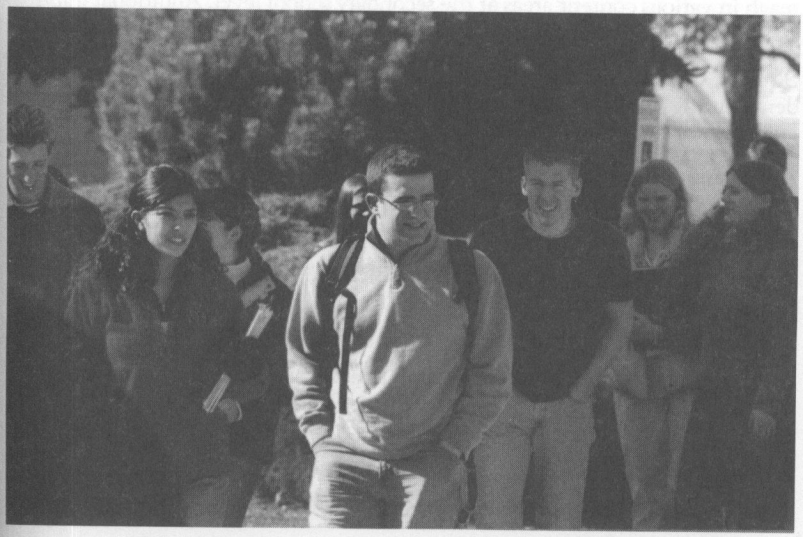
CIS 301 MANAGEMENT INFORMATION SYSTEMS 4

CIS 315 SYSTEMS ANALYSIS AND DESIGN 4

CIS 390 INTERMEDIATE NETWORK ADMINISTRATION 4

CIS 440 DATABASE MANAGEMENT SYSTEMS 4

CIS 494 COOPERATIVE EDUCATION/INTERNSHIP 1-4



SCHOOL OF EDUCATION AND PSYCHOLOGY

Mark Haynal, Dean; Austin Archer, Robert Egbert, Ginger Ketting-Weller, Tamara Randolph, Gail Rittenbach, Lee Stough.

The School of Education and Psychology offers programs leading to a Bachelor of Science degree with majors in elementary education, and a Bachelor of Arts degree with a major in psychology. Minors are available in education, psychology, and preparation is provided for state and denominational certification in elementary education, or secondary teaching. 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.

TITLE II OF HIGHER EDUCATION

Walla Walla College
School of Education and Psychology
Report Card for 2001 - 2002

Mission: The School of Education and Psychology at Walla Walla College supports the mission of the college 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; and
- the integration of learning, faith, and service.

Teacher Preparation Programs: WWC 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.wwc.edu/academics/departments/education.

Student Characteristics: The Teacher Certification Program enrolled 79 students during the 2001-2002 academic year. Most of these students were 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.

For a complete description, see: http://www.wwc.edu/academics/bulletins/undergrad/current/educ.html.

Accreditation:

- Northwest Association of Schools and Colleges
- Accrediting Association of Seventh-day Adventist Schools, Colleges, & Universities
- All of the college'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 62 and 150 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:

- Three of our professors of education are recipients of the Thomas & Violet Zappara Excellence in Teaching Award.
- In 2001-2002, one elementary education major received the Outstanding Senior Award for Elementary Education.
- In 2001-2002, 12 teacher certification candidates were awarded the Eleanor Schofield Memorial Teachers' Scholarship.
- In 2001-2002, one elementary education major received the Richard and Dena Hammill Scholarship.

PROGRAM STATISTICS:

S.1	Total number of students in your teacher preparation program, all specializations in academic year 2001-2002	79
S.2	Number of students in supervised student teaching in academic year 2001-2002	31
	Number of faculty members who supervised student teachers:	
S.3A	Full-time faculty in professional education	3
S.3B	Part-time faculty in professional education but full-time in the institution	0
S.3C	Part-time faculty in professional education, not otherwise employed by the institution	14
S.4	Total faculty student teaching supervisors (Sum of S.3A, S.3B, S.3C)	17
S.5	Student teacher/faculty ratio	3:1
S.6A	The average number of student teaching hours per week required	24
S.6B	The total number of weeks of supervised student teaching required	10

S.7 Average total number of hours required 240

This report is provided in accordance with the requirements of The Higher Education Act, Title II, Section 207 (f) (1) and (2).

To view the 2001-2002 Report Card please go online to: http://www.wwc.edu/academics/departments/education/reportcard%2001-02.html

MAJOR IN ELEMENTARY EDUCATION (Bachelor of Science)

To be considered for admission into the Teacher Certification Program, 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 (TCP) 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, and cognates. 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 courses that apply to these requirements. Any course graded lower than a C cannot apply. A total of two repeats is permitted in any course or any combination of courses in the Pre-Candidacy courses and the Teacher Certification Program combined. Senior students are required to take the Major Field Achievement Test in Education. 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 a minimum of 6 months prior to the beginning of the anticipated student teaching quarter.

Major Requirements:

Pre-Candidacy Courses

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. Stu-

dents 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 sequence is required.

Pre-Candidacy Courses:

EDUC 210	Foundations of Education	3
EDUC 247	Elementary School Exploratory	1
PSYC 130	General Psychology	4
PSYC 215	Child and Adolescent Development	4
PSYC 220	Educational Psychology	3
SPED 210	Foundations of Special Education	3

Pre-Candidacy Cognates:

ENGL 121, 122	College Writing I, II	6
MATH 112, 113	Mathematics for Elementary Teachers	6

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.

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 480	Student Teaching in the Elementary School	12
EDUC 495	Colloquium: Child Abuse	0

Minor in an Approved Content Area

Elementary education majors will complete a minimum of 30 quarter hours in an approved academic minor, even though, in some instances, requirements for the minor may be less. See your adviser for details and an endorsement checksheet, if applicable.

Approved Content Areas (* no endorsement)

Art	English
Biology	French
*Business Education	German

Chemistry	*Health
Drama	History
Mathematics	*Sociology
Music	Spanish
Physical Education	*Speech
Physics	
*Psychology	

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:

EDUC	381	Elementary Curriculum and Instruction: Religion	2
EDUC	495	Colloquium: Small Schools	0

16 Religion credits are required for certification and must include:

RELH	457	History of Adventism	3
RELT	202	Christian Beliefs	4
RELT	417	Inspiration and Revelation	3

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	4
	or		
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
		Physical Science Coursework	4/8
		Life Science Coursework	4/8

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

Note: Pre-candidacy course, SPED 210, also partially fulfills the requirements of this section.

Certification requirements listed in this Bulletin will change September 1, 2004. Those changes will apply to any student completing his/her certification program after August 31, 2005. Please contact the Certification Officer at the School of Education and Psychology for a current description of certification requirements. It is the student's responsability to regularly obtain and use the most current requirements when planning his/her certification program.

PREPARATION FOR SECONDARY TEACHING

To be considered for admission into the Teacher Certification Program, 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 (TCP) 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 primary endorsement (major) 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 coursework and in each endorsement area. No grade lower than C will apply. A total of two repeats is 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 a minimum of 6 months prior to the beginning of the anticipated student teaching quarter.

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 sequence is required.

Pre-Candidacy Courses:

EDUC 210	Foundations of Education	3
EDUC 267	Middle School Exploratory	1
PSYC 130	General Psychology	4
PSYC 215	Child and Adolescent Development	4
PSYC 220	Educational Psychology	3
SPED 210	Foundations of Special Education	3

Pre-Candidacy Cognates:

ENGL 121, 122	College Writing I, II	6
MATH 105	Mathematics with Applications (or more advanced math course)	4

Teacher Certification Program:

EDUC 365	Instructional Methodology	3
EDUC 367	Instructional Methodology Practicum	1
EDUC 390	Measurement and Evaluation in Education	4
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 481	Student Teaching in the Secondary School	12
EDUC 495	Colloquium: Child Abuse	0
		51

Teacher Certification Program Cognates:

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

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:

RELH 457	History of Adventism	3
RELT 202	Christian Beliefs	4
RELT 417	Inspiration and Revelation	3

Approved Primary and Supporting Endorsements

Endorsement requirements frequently exceed graduation requirements. For example, endorsements typically require a methods class appropriate for secondary teaching (5-12). See an adviser in the department offering the endorsement or in the School of Education and Psychology for a current certification checksheet.

Majors (must include courses required for endorsement)

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

Minors

Note: Endorsements are available for the following minors. See the certification officer for details.

Art
Biology
Chemistry
Drama
English
French
German
Health/Fitness
History
Mathematics
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.

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.

Certification requirements listed in this Bulletin will change September 1, 2004. Those changes will apply to any student completing his/her certification program after August 31, 2005. Please contact the Certification Officer at the School of Education and Psychology for a current description of certification requirements. It is the student's responsibility to regularly obtain and use the most current requirements when planning his/her certification program.

MINOR IN EDUCATION

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 such acceptance with the secretary of the School of Education and Psychology. Without acceptance into the Teacher Certification Program, students may only take EDUC, PSYC, or SPED courses that do not list acceptance as a prerequisite.

EDUC 210	Foundations of Education	3
EDUC 247	Elementary School Exploratory	1
or		
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 CHLD, EDUC, or SPED courses.

MAJOR IN PSYCHOLOGY (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 college careers.

A student majoring in psychology 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 Major Field Achievement Test in Psychology.

Major Requirements:

PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
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: Introduction	2
PSYC	472	Research Methods II: Experimental Psychology	2
PSYC	473	Research Methods III: Research Project	2
PSYC	492	Abnormal Psychology	4
		*Electives (must be upper division)	6
			47

*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	101, 102, 103	General Biology	12
BIOL	201, 202	Anatomy and Physiology	8
BIOL	374	Animal Behavior	4
CHEM	101, 102, 103	Introductory Chemistry	11
MATH	121, 122	Fundamentals of 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

MINOR IN PSYCHOLOGY

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 (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 ELEMETARY SCHOOL EXPLORATORY 1
A three-week internship in a multigrade elementary classroom, designed to acquaint the intern 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 internship in a public middle school classroom. Designed to acquaint the intern with student behavior at the grade level assigned, along with teacher responsibilities for planning, implementing, and managing the instructional program, including 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 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 a diverse population and gain understanding of cultural differences. The student 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 2
An introduction to technology tools for teachers. Includes use of the internet for research and instruction; an introduction to Web page design; online gradebooks and communication services; tools for creating multimedia presentations; and the latest in electronic devices that teachers can use for teaching and classroom management.

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.

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 & INSTRUCTION: SCIENCE AND HEALTH 2 or 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. Registration for 2 credits requires permission of the School of Education and Psychology. 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 103, 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 431 PSYCHOLOGY OF READING (OR SPED 431) 3
Study of the psychological, perceptual, developmental, and physiological aspects of reading.

EDUC 434 TRENDS IN EDUCATION (OR SPED 434) 1-3; 6
Current theory and practice in teaching and learning in elementary or secondary schools. Elective credit or renewal of teacher certification. Prerequisite: Admission to Teacher Certification Program or Teacher Certification.

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 480 STUDENT TEACHING IN THE ELEMENTARY SCHOOL 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 college 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. Prerequisites: EDUC 360, 373, 405 and permission of the School of Education and Psychology. Graded S or NC.

EDUC 481 STUDENT TEACHING IN THE SECONDARY SCHOOL 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 college 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 & Psychology. Prerequisites: EDUC 365, 367 and permission of the School of Education and Psychology. Graded S or NC.

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: 0
Small Schools — Theory and application of procedures and practices in multigrade and multiage elementary classrooms. Graded S or NC.
Child Abuse — Identification, impact, and prevention of physical, emotional, sexual, and substance abuse. Discussion of teachers' legal responsibilities. Graded S or NC.

EDUC 496 SEMINAR 1-3; 6
In-depth examination of a specific topic in education. Topics may include cooperative learning, curriculum reform, small-school pedagogy, media applications, etc. Prerequisite: upper division major/minor in education or permission of instructor.

PSYCHOLOGY (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 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: PSYC 130 or 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. This course will not apply toward a psychology major.

PSYC 266 LEARNING AND BEHAVIOR 3
Basic learning phenomena in animals and humans including classical and operant conditioning, as well as 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
Theories of personality development, assessment, and adjustment. Prerequisite: PSYC 130.

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 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 SOWK 437) 3
Study of the process of death and dying from four distinct perspectives: cultural, social, personal, and professional.

PSYC 441 COUNSELING EXCEPTIONAL INDIVIDUALS AND THEIR FAMILIES (OR SPED 441) 3
Students will learn school, family, and community partnerships to improve learning for students with disabilities and their families, understanding and applying knowledge of family systems including cultural and linguistic diversity. Students will also learn transition planning for new settings including planning post-school outcomes. Students will be able to counsel with parents regarding the grieving process, behavioral management plans and coping techniques and counsel exceptional students regarding academic and vocational plans. Students will be able to counsel with school personnel about teaching techniques and behavior management strategies.

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 3
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.

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 101 or 201; or permission of instructor.

PSYC 471 RESEARCH METHODS I: INTRODUCTION 2
Introduction to procedures for reviewing and evaluating psychological research. Includes completion of a comprehensive review and critique of research in a specific area of psychology.

PSYC 472 RESEARCH METHODS II: EXPERIMENTAL PSYCHOLOGY 2
Advanced study of research design and interpretation in psychology. Includes completion of a research proposal in the area of psychology reviewed in PSYC 471. Prerequisites: PSYC 130, PSYC 471, MATH 206 or equivalent.

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 489 CAREER AND LIFESTYLE DEVELOPMENT 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
Behavioral disturbances, therapeutic measures, and related theories. Prerequisites; PSYC 130; PSYC 215 or 366.

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 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.

SPECIAL EDUCATION (SPED)

SPED 210 FOUNDATIONS OF SPECIAL EDUCATION 3
An introduction to special education as a field of study and practice in American schools. Examines social and historical foundations, the characteristics of handicapping conditions, and their impact on the educational setting. Prerequisite: PSYC 215 or permission of instructor.

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 373 MANAGEMENT OF EXCEPTIONAL INDIVIDUALS 4
In-depth examination and administration of various models and techniques for the management of exceptional individuals within the classroom, home and community. On-site field experience required.

SPED 410 ADAPTIVE TECHNOLOGY IN SPECIAL EDUCATION 3
Students will be able to select, evaluate, and adapt commercially available materials and equipment including computer applications. Focusing on curriculum modification and adaptation (including modification of the essential academic learning requirements), accommodations, special aids, technology, and equipment, the student will become proficient with these techniques.

SPED 415 TEACHING THE PRESCHOOL EXCEPTIONAL CHILD 3
Diagnosis and instructional planning on behalf of the preschool (0-6 years of age) exceptional child.

SPED 430 LEGAL AND PROFESSIONAL ISSUES IN SPECIAL EDUCATION 3
Students will learn procedural and substantive legal issues in special education. The students will summarize the history of special education, noting specific landmark events, court cases, and laws that have contributed most to the field. Students will explain the steps in the referral process and state the main issues that generally arise. Students will discuss current issues and trends in special education.

SPED 431 PSYCHOLOGY OF READING (OR EDUC 431) 3
Study of the psychological, perceptual, developmental, and physiological aspects of reading.

SPED 433 ASSESSMENT OF EXCEPTIONAL INDIVIDUALS 4
Examination and administration of assessment measures for exceptional individuals. On-site field experience required. Prerequisites: SPED 210 and EDUC 390. (Course fee $20)

SPED 434 TRENDS IN EDUCATION (OR EDUC 434) 1-3; 6
Current theory and practice in teaching and learning in elementary or secondary schools. Elective credit or renewal of teacher certification. Prerequisite: Admission to Teacher Certification Program or Teacher Certification.

SPED 435 READING DIAGNOSIS AND REMEDIATION 3
The diagnosis of problems in reading and the exploration of remedial strategies and techniques. Field experience required. Prerequisite: EDUC 360 or equivalent.

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 437 TEACHING STUDENTS WITH SEVERE DISABILITIES 4
In-depth examination and implementation of effective teaching techniques for students with severe disabilities. The student will also study classroom set-up for accommodations of these students in the regular classroom.

SPED 438 CONSULTATION AND COLLABORATION IN SCHOOLS 2
Students will learn school, family, and community partnerships to improve learning for students with disabilities. They will understand and apply knowledge of family systems including cultural and linguistic diversity. Students will also learn collaboration, teaming, partnerships and supervision of paraeducators. Students will design multidisciplinary teams including community agencies, paraprofessionals and parents of students with disabilities to provide effective programming.

SPED 440 FUNCTIONAL ASSESSMENT (OR CHLD 440) 3
Students will assess and evaluate using functional behavior analysis. Students will also understand the role of functional assessment in student placement and curriculum modification and adaptation, and making accommodations for special needs students.

SPED 441 COUNSELING EXCEPTIONAL INDIVIDUALS AND THEIR FAMILIES (OR PSYC 441) 3

Students will learn school, family, and community partnerships to improve learning for students with disabilities and their families, understanding and applying knowledge of family systems including cultural and linguistic diversity. Students will also learn transition planning for new settings including planning post-school outcomes. Students will be able to counsel with parents regarding the grieving process, behavioral management plans and coping techniques, and counsel exceptional students regarding academic and vocational plans. The students will be able to counsel with school personnel about teaching techniques and behavior management strategies.

SPED 480 PRACTICUM IN SPECIAL EDUCATION 1-4; 4

Provides a broad spectrum of closely supervised experience in actual field settings, including assessment, management, and instruction techniques. Prerequisites: SPED 373, 433, 436, 437, and permission of special education adviser. May not be taken concurrently with student teaching.

SPED 482 STUDENT TEACHING IN AN INCLUSIVE CLASSROOM 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 college 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. **NOTE: Students wishing to receive endorsements in both Elementary and Special Education must enroll in this Student Teaching Experience.** 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 Certification, available from the School of Education and Psychology. Prerequisites: EDUC 360, 373, 390, 405, SPED 373, 436, 437, 438, 440, 480 and permission of the School of Education and Psychology.

SPED 483 STUDENT TEACHING IN A SPECIAL EDUCATION CLASSROOM 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 college 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. **NOTE: Students receiving only a Special Education endorsement must enroll in this Student Teaching experience.** 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 Certification, available from the School of Education and Psychology. Prerequisites: EDUC 360, 373, 390, SPED 373, 436, 437, 438, 440, 480 and permission of the School of Education and Psychology.

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.

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

SCHOOL OF ENGINEERING

Robert Wood, Dean; Larry Aamodt, Bryce Cole, Jon Cole, Carlton Cross, Laurel Dovich, Rob Frohne, Rodney Heisler, Curtis Nelson, Don Riley, 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, 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 will encourage 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. degree is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc., under the category of engineering.

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.

For architectural studies see the Preprofessional Programs: Architecture in this bulletin.

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. 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 College 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 College. 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 College. 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 core requirements, the mathematics and science requirements, and one engineering concentration. 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.

Chemistry, Mathematics and Physics courses taken to meet core requirements in the BSE degree are considered cognates and therefore may be counted toward meeting 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 College. 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

Speech: (3-4 credits)

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

HEALTH AND PHYSICAL EDUCATION **2-3**
The physical education requirements can be met by choosing 100-level activity courses (PEAC 101-197)

RELIGION **16-18**
(6 credits must be upper division. 6 credits must be RELB courses. See Religion General Studies section of this bulletin.)

HUMANITIES AND SOCIAL STUDIES **10-15**
(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:

SPCH 363	History of Theatre	4

Literature:

ENGL 204	Introduction to Literature	4
ENGL 210-212	Survey of English & American Literature	4, 4, 4
ENGL 214	Themes in Literature	4
ENGL 215	Introduction to Film Literature	4
ENGL 315	Genre Film Literature	4
ENGL 316	Literature of The American West	4
ENGL 317	Pacific Northwest Writers	4
ENGL 344	Medieval Literature	4
ENGL 345	Renaissance Literature	4
ENGL 346	Restoration and Neoclassic Literature	4
ENGL 354	Romantic English Literature	4
ENGL 355	Victorian Literature	4
ENGL 356	Modern English Literature	4
ENGL 257, 357	The African-American Experience	4
ENGL 358	Classical Literature	4

ENGL 359	World Literature	4
ENGL 364	Romantic American Literature	4
ENGL 365	Realistic American Literature	4
ENGL 366	Modern American Literature	4
ENGL 444	Major Author	3
ENGL 445	Shakespeare	3
ENGL 454	Literature of The Bible	4
ENGL 455	The Book of Judges: A Cross-Disciplinary Approach	4
ENGL 456	American Literature and Art	4
ENGL 464	Development of English Drama	3
ENGL 465	Major British Novels	4
FREN 406	17th Century French Literature	4
FREN 407	18th Century French Literature	4
FREN 408	19th Century French Literature	4
FREN 409	20th Century French Literature	4
SPAN 324-326	Survey of Spanish Literature	3, 3, 3
SPAN 424, 425	Contemporary Spanish Literature	3, 3
SPAN 431-433	Survey of Latin-American Literature	3, 3, 3

Music:

MUHL 124	Introduction to Music	4
MUHL 134	World Music	4
MUHL 311, 312	Survey of Music History	4, 4

Philosophy:

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 407	Philosophy of Science	4
PHIL 412	Philosophy of Religion	4

SOCIAL STUDIES (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	3
SOCI 204	General Sociology	4
SOCI 234	Current Social Problems	3
SOCI 236	Racial and Ethnic Relations	3
SOCI 324	Human Development and The Family	4
SOCI 325	The Social Psychology of Family Life	3
SOCI 327	Sociology of Sex Roles	3
SOCI 345	Sociology of Communities	3
SOCI 449	Sociology of Religion	2
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 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 285	History of Mexico	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 The Rise of Industrial America 1850-1900	4
HIST 446	History of the Pacific Northwest	4
HIST 448	The Emergence of Modern America	4
HIST 454	Classical Political Thought	4
HIST 456	Medieval and Early Modern Christianity	4
HIST 466	Age of Revolutions	4
HIST 467	Nationalism, Imperialism and War 1850-1919	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
WRIT 325	Writing for The Professions	3
FREN 101	Introduction to French	4
FREN 102	Elementary French	4
GBUS 361	Business Law I	4
GRMN 101	Introduction to German	4
GRMN 102	Elementary German	4
HLTH 110	Wellness for Living	3
HLTH 208	Drugs and Society	3
HLTH 220	Human Nutrition	4
SOCI 225	Marriage and Family Life	2
SPAN 101	Introduction to Spanish	4
SPAN 102	Elementary Spanish	4
SPCH 101	Fundamentals of Speech Communication	4
SPCH 207	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 profes-

sional career and be prepared to move into new or developing technical area 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	4	–	r	r	–
ENGR 121, 122, 123	Introduction to Engineering	6	r	r	r	r
ENGR 326	Engineering Economy	3	r	r	r	r
ENGR 495	Colloquium (3 quarters required)	0	r	r	r	r
ENGR 396, 496, 497 498	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, 222, 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

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 Applications	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 Requirements		27	31	27	27

SCIENCE (24 credits)		**Credits**	**CE**	**CpE**	**EE**	**ME**
CHEM 141, 142, 143	General Chemistry	9	r	r	r	r
CHEM 144, 145, 146	General Chemistry Laboratory	3	r	r	r	r
PHYS 251, 252, 253	Principles of Physics	9	r	r	r	r
PHYS 254, 255, 256	Principles of Physics Laboratory	3	r	r	r	r
	Minimum Requirements		24	24	24	24

MATHEMATICS/SCIENCE ELECTIVE (4 credits)						
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.

CONCENTRATION: Civil Engineering (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
	A minimum of 2 courses must be chosen from civil engineering electives. The other may be chosen from approved BIOL, CHEM, CPTR, ENGR, MATH or PHYS.	

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

CONCENTRATION: Computer Engineering (52 credits)

CPTR 143	Data Structures and Algorithms	4
CPTR 215	Assembly Language Programming	3
CPTR 316	Programming Paradigms	3
CPTR 350	Computer Architecture	4
CPTR 352	Operating System Design	4
CPTR 425	Introduction to Networking	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 & CS Electives	12

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

CONCENTRATION: Electrical Engineering (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

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

CONCENTRATION: Mechanical Engineering (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

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

MAJOR IN BIOENGINEERING (Bachelor of Science)

See the Interdisciplinary section of this bulletin.

ENGINEERING (ENGR)

ENGR 121, 122, 123 INTRODUCTION TO ENGINEERING 2, 2, 2

Introduction to the design process and elements of professional engineering. Engineering communications, with emphasis on sketching, conventional engineering drafting prac-

tices, Computer Aided Design and Computer Aided Engineering (CAD/CAE), pictorial representations; principles of descriptive geometry, computer-based engineering calculations. Laboratory work required. ENGR 121 prerequisite to ENGR 123.

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; Kirchoff'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 312 PHYSICAL ELECTRONICS, (OR PHYS 312) 3
Study of the physical principles of solid state electronic devices, including photovoltaics. 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 demonstrational 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; 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. 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; problems using applications of relaxation methods, finite differences, least squares, modeling and simulation techniques, and finite elements. Prerequisites: CPTR 141, ENGR 321, ENGR 331, ENGR 341, MATH 312, MATH 315; Corequisites: ENGR 342, ENGR 364, MATH 289.

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. An HP-48 calculator, or equivalent is required. 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. An HP-48 calculator or equivalent is required. 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 fee $50)

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 fee $50)

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. 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 SEMINAR 0
Presentation and discussion of senior project reports of those students who are completing the seminar sequence. Prerequisite: Junior standing in engineering. Graded S or NC.

ENGR 431 ELECTROMECHANICAL ENERGY CONVERSION 4
Study of the principles of electromechanical energy conversion devices and their application to electrical machinery; three-phase circuits, magnetic circuits, force and torque;

transformers, permanent magnets, electromagnets; three-phase circuits, AC and DC excitation of energy conversion devices, DC and AC machines, performance, 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 in 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 sewage and stormwater collection systems. Computation laboratory required. Prerequisites: CPTR 141; ENGR 343.

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
Design of facilities for disposal of wastewaters to land and water systems; analysis of surface waters receiving wastewater effluents. 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 on demand.

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 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 wave guides; 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. An HP-48 calculator, or equivalent is required. Prerequisite: ENGR 352. ENGR 455, MATH 315 strongly recommended. Offered odd 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 ELECTRIC MACHINES AND CONTROLS 3
AC power systems and energy conversion in induction machines, synchronous machines; dynamics, performance, power electronics and control; design and applications. Laboratory work required. Prerequisite: ENGR 431. Offered even 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 DESIGN 4
Study of design of mechanical systems and controls in air conditioning and heating of buildings. Modern aspects of solar heating and cooling will be included.

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 odd 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. Offered even years only.

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 SEMINAR 1, 1, 1
Presentation and discussion of current topics of interest within professional engineering. Each student is required to conduct an approved engineering design project from conception to final oral and written reports. 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 and also ENGL 323 for ENGR 496.

ENGLISH

Nancy Cross, Chair; Terrie Aamodt, Beverly Beem, Ronald Jolliffe, Dan Lamberton, Sylvia Nosworthy, Carolyn Shultz, LuAnn Venden, Gary Wiss.

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, and pre-professional 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 flexibility of the minor allows students to design it according to individual interests.

MAJOR IN ENGLISH (Bachelor of Arts)

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; ENGL 210, 211, 212; ENGL 234), and demonstrate grammar competence with a minimum score of 80% 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 Achievement Test (MFAT): Literature in English. Students planning to attend graduate school are advised to take the Graduate Record Examination, general and subject (English) sections.

Core Requirements for Major:

ENGL 210, 211, 212	Survey of English and American Literature	12
ENGL 234	Literary Analysis	4
English Literature before 1800 selected from:		7
ENGL 344	Medieval Literature	4
ENGL 345	Renaissance Literature	4
ENGL 346	Restoration & Neoclassical Literature	4
ENGL 444	Major Author (before 1800)	3
ENGL 445	Shakespeare	3
Nineteenth-Century English and American Literature selected from:		3-4
ENGL 354	Romantic English Literature	4
ENGL 355	Victorian Literature	4
ENGL 364	Romantic American Literature	4
ENGL 365	Realistic American Literature	4
ENGL 444	Major Author (19th Century)	3

ENGL 470	Literary and Critical Theory	4
ENGL 484 or 485	Language	3
ENGL 495	Colloquium (4 quarters)	0
		33-34

Option I: Standard English Major

WRIT 324-336	Writing	3
ENGL 496, 497	Seminar	3
	Electives	19-20
		24-25

Option II: 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.

ENGL 384	Advanced English Grammars (Also fulfilled with 12 hours of Latin or Greek)	3
ENGL 333 or ENGL 385 or ENGL 389	Poetics / Stylistics / Writing Theory	3
WRIT 324-336	Writing	6
WRIT 424-436	Directed Writing	2
WRIT 498-499	Writing Seminar	3
	Electives	7
		24-25

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

Cognates:

HIST 274, 275 or HONR 131, 132, 133	History of England / Western Thought	8
SPCH 211 or SPCH 242	Oral Interpretation / Acting	4

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 384	Advanced English Grammars	3
ENGL 374	Literature for Children	
or		3
ENGL 375	Literature for Young Adults	
WRIT 389	Writing Theory	3
ENGL 395	Methods of Teaching High School English	3
ENGL 416	Teaching Film Literature	4

MINOR IN ENGLISH

ENGL 210, 211, 212	Survey of English and American Literature	12
ENGL 234	Literary Analysis	4
ENGL 344 to 368	English or American Literature	4
	Electives (6 must be upper division; 3 may be ENGL 374 or 375)	10
		30

Approval of English adviser required.

GENERAL STUDIES WRITING (ENGL)

ENGL 121, 122, 223; or HONR 141, 142, and ENGL 223 are prerequisites to all upper division writing courses.

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 on word processors required. Diagnostic test at the beginning with a competency-based exit exam at the end. Graded S/NC only. 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 all college writing. ENGL 121 emphasizes personal and expository writing and an understanding of the writing process; ENGL 122 emphasizes expository and persuasive writing, analysis, argument, and the development of a clear writing style. Must be taken in sequence. Prerequisite: satisfactory scores on placement tests.

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. Prerequisite: ENGL 122 or HONR 142 and 36 hours of college classwork completed.

GENERAL STUDIES LITERATURE AND LANGUAGE (ENGL)

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.

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. Offered even years only.

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, neoclassic 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 215 INTRODUCTION TO FILM LITERATURE 4

An introduction to the history of film development and basic techniques of film expression leading to a study of film genres. Intended to broaden the students' critical appreciation of literature and to encourage responsible, mature criteria for judging film literature. Will not apply toward an English major. (Course fee $15)

ENGL 257 THE AFRICAN-AMERICAN EXPERIENCE (OR ENGL 357) 4

Study of major contemporary African-American writers in their cultural and historical context. Credit will not be allowed for both courses. Offered odd years only.

ENGL 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. Either ENGL 312 or ENGL 315 will apply as an elective on the English major. Prerequisite: ENGL 215 or qualifying exam. Offered even years only. (Course fee $15)

ENGL 313 AESTHETICS IN 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.

ENGL 315 GENRE FILM LITERATURE 4

Study of selected films with emphasis on criticism of film form or socio-cultural expression. Either ENGL 312 or ENGL 315 will apply as an elective on the English major. Prerequisite: ENGL 215 or qualifying exam. Offered odd years only. (Course fee $15)

ENGL 316 LITERATURE OF THE AMERICAN WEST 4

A study of traditional and contemporary writing set in the American West, including the work of explorers, pioneers, mythmakers, and contemporary writers. Emphasis on the history of the Western environment as recorded in literature. Prerequisite: General Studies literature. Will apply as an elective on the English major. Offered even years only.

ENGL 317 PACIFIC NORTHWEST WRITERS 4

Study of contemporary writing by Northwesterners, including poetry, fiction, and nonfiction. Prerequisite: General Studies literature. Will apply as an elective on the English major. Offered odd years only.

ENGL 416 TEACHING FILM LITERATURE 4

An upper division application of Introduction to Film Literature aimed at providing teachers and teacher candidates with an understanding of film art that will enhance the use of film in the classroom. Students atttend ENGL 215, Introduction to Film Literature 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 ENGL 215 and ENGL 416.

WRITING (ENGL) (WRIT)

ENGL 121, 122, 223; or HONR 141, 142, 223 are prerequisites to all other writing courses.

ENGL 224 RESEARCH AND WRITING IN RELIGION 3
Study of research and writing skills in religion, including the use of library resources; instruction in the preparation and writing of papers for academic, professional, and popular audiences. This course is prerequisite to all upper-division theology seminars. Prerequisite: ENGL 223.

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 or HONR 243.

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 designated by the School of Engineering. Prerequisite: ENGL 122 or HONR 142 or equivalent.

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 odd years only.

WRIT 325 WRITING FOR THE PROFESSIONS 3
Techniques of researching, writing, and presenting proposals, reports, and other documents in such fields as law, business, science, engineering, and education. Designed to aid students in writing papers in their major fields and professional careers. Offered odd 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. Prerequisites: ENGL 223 or 323 or HONR 243.

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 385 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. Prerequisite: ENGL 384, or ENGL 485, or 8 hours of Latin or Greek. Offered even years only.

WRIT 389 WRITING THEORY
A study of composition theory and the writing process. Through writing practice, student study the application of this theory to their own work and to the teaching of writing.

WRIT 424 DIRECTED CREATIVE NONFICTION WRITING 1-2;
Refinement of essay writing skills through a writing project chosen in consultation with th instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: ENG 324 and a portfolio of creative nonfiction. May be repeated for credit up to 3 hours.

WRIT 425 DIRECTED WRITING FOR THE PROFESSIONS 1-2;
Refinement of professional writing skills through a writing project chosen in consulta tion with the instructor. Limited enrollment. Admission by permission of instructor. Pre requisites: WRIT 325 and a portfolio of professional writing. May be repeated for credi up to 3 hours.

WRIT 426 DIRECTED NONFICTION WRITING 1-2;
Refinement of non-fiction writing skills through a writing project chosen in consultatio with the instructor. Limited enrollment. Admission by permission of instructor. Prerequi site: a portfolio of nonfiction writing. May be repeated for credit up to 3 hours.

WRIT 434 DIRECTED POETRY WRITING 1-2;
Refinement of poetry writing skills through a writing project chosen in consultation wit the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites WRIT 334 and a portfolio of poetry. ENGL 333 recommended.

WRIT 435 DIRECTED NARRATIVE WRITING 1-2;
Refinement of narrative writing skills through a writing project chosen in consultation wit the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites: WRI 335 and a portfolio of narrative writing. May be repeated for credit up to 3 hours.

WRIT 436 DIRECTED DRAMA WRITING 1-2;
Refinement of drama writing skills through a writing project chosen in consultation wit the instructor. Limited enrollment. Admission by permission of instructor. Prerequisites ENGL 336 and a portfolio of dramas. May be repeated for credit up to 3 hours. Will b offered 2004-2005.

WRIT 498, 499 WRITING SEMINAR 2,
As the culmination of the writing concentration, this course will guide students throug the preparation and completion of their senior writing portfolio of fiction, poetry, an non-fiction. Students may have a general portfolio or one that concentrates on on genre. A bound copy of the senior portfolio remains with the English Department. Eac student in this course will give a public reading during the student's last quarter.

LITERATURE AND LANGUAGE (ENGL)

Unless otherwise stated, ENGL 234 or permission of instructor is prerequisite to al literature courses listed below.

ENGL 344 MEDIEVAL LITERATURE 4
Study of English literature from its origins to about 1500. Literature in Old and Middl English to be read in translation; Chaucer's works to be read in the original Middle En glish. 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 RESTORATION AND NEOCLASSICAL LITERATURE 4
Study of selected works of important seventeenth- and eighteenth-century English authors, including Dryden, Swift, Pope and Johnson. Offered even years only.

ENGL 354 ROMANTIC ENGLISH LITERATURE 4
Study of major romantic English authors, including Wordsworth, Coleridge, Byron, Shelley and Keats. Offered even years only.

ENGL 355 VICTORIAN LITERATURE 4
Study of representative works of major nineteenth-century British poets and prose writers (1830-1870), including Tennyson, Browning, Hopkins, Carlyle, Arnold, Newman, Ruskin. Also includes one or two Victorian novels. Offered even years only.

ENGL 356 MODERN ENGLISH LITERATURE 4
Study of English literature 1914-1965; significant works studied in relation to intellectual and historical developments. Offered odd years only.

ENGL 357 THE AFRICAN-AMERICAN EXPERIENCE (OR ENGL 257) 4
Study of major contemporary African-American writers in their cultural and historical context. Credit will not be allowed for both courses. 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 three or four Shakespeare plays (typically one tragedy, one or two comedies, one history play). Students read the plays and write one-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 by September 15. Prerequisites: ENGL 234 and ENGL 210, 211, 212 or permission of instructor.

ENGL 364 ROMANTIC AMERICAN LITERATURE 4
Study of major romantic American authors, including Emerson, Thoreau, Hawthorne and Melville. Offered odd years only.

ENGL 365 REALISTIC AMERICAN LITERATURE 4
Study of major American authors who typify realism and naturalism of the late nineteenth and early twentieth centuries. Offered even years only.

ENGL 366 MODERN AMERICAN LITERATURE 4
Study of American literature 1900-1965; 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 even 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 passing score on placement test.

ENGL 394 DIRECTED READING 1, 2; 3
Independent reading for upper-division students who wish to continue broadening thei knowledge of literature in a particular area by extensive reading. Prerequisites: Genera Studies literature or ENGL 234; admission by permission of instructor.

ENGL 415 DIRECTED FILM STUDY 1-2
Directed study for students who wish to continue broadening their knowledge of filn literature in a particular area by extensive viewing and analysis. Admission by permissio of instructor. Prerequisite: ENGL 312 or ENGL 315. Will apply as an elective on th English major.

ENGL 444 MAJOR AUTHOR 3
Advanced study of the work of a major author or group of authors of English, American and world literature. Specific authors to be studied vary from quarter to quarter. May b repeated for credit when topics vary. Offered 2005-2006.

ENGL 445 SHAKESPEARE 3
Advanced study of selected plays and poems of Shakespeare. Offered even years only.

ENGL 454 LITERATURE OF THE BIBLE (OR RELB 454) 4
Study of biblical poetry and prose from a literary perspective. Prerequisite: General stud ies literature or ENGL 234. Offered odd years only.

ENGL 455 BOOK OF JUDGES: A CROSS-DISCIPLINARY APPROACH (OR RELB 455) 4
An interdisciplinary approach to the Book of Judges, including historical, literary, theo logical, archaeological, and anthropological methods. The course is designed to mode various scholarly methods in the study of a biblical text. Prerequisite: One general educa tion literature course and one biblical studies course, or permission of instructor. Offere even years only.

ENGL 456 AMERICAN LITERATURE AND ART 4
Study of the relationships between American literature and art from the early nationa period to the early modern period. Prerequisite: General Studies literature or ENGL 234 Offered even years only.

ENGL 464 DEVELOPMENT OF ENGLISH DRAMA 3
Survey of the development of English drama from the medieval mystery plays to th twentieth century. Offered odd years only.

ENGL 465 MAJOR BRITISH NOVELS 4
Survey of major British novels from the eighteenth and nineteenth centuries, concen trating on the nineteenth century. Authors generally represented include Fielding, Smollet or Goldsmith, Scott, Austen, the Brontes, Dickens, Eliot, Hardy. Offered odd years only

ENGL 470 LITERARY AND CRITICAL THEORY 4
Study of the history, theory and practice of literary criticism, with an application to se lected works of literature. Includes a survey of the principal genres of criticism from clas sical to postmodern, and representative theoreticians from those genres.

ENGL 484 HISTORY OF THE ENGLISH LANGUAGE 3
Study of premodern and early modern English, with reference to Indo-European anteced ents. Intended to illuminate major trends in English language history. Offered odd years only

ENGL 485 LINGUISTICS 3
Survey of approaches to modern linguistic science, with emphasis on the materials an methods of descriptive linguistics in phonology, morphology, syntax and semantics. Of fered even years only.

NGL 496, 497 SEMINAR 1, 2
equired of English majors in the senior year. Includes studying research methods, giving ral reports, and writing a major scholarly paper. Research projects relate to a common opic chosen by the instructor.

NGLISH EDUCATION (ENGL)

he following courses do not apply toward an English major.

NGL 374 LITERATURE FOR CHILDREN 3
tudy of literature for children from early childhood through elementary school. Empha-zes literary and artistic quality and appeal to children. Requires extensive reading of ildren's books and writing of critical analysis. Will apply toward an English minor.

NGL 375 LITERATURE FOR YOUNG ADULTS 3
tudy of literature appropriate for junior high and high school students. Emphasizes liter-y and artistic quality as well as theory of response to literature. Requires extensive read-g of literature for young adults and writing of critical analysis. Will apply toward an nglish minor. Offered odd years only.

NGL 395 METHODS OF TEACHING HIGH SCHOOL ENGLISH 3
study of objectives for and methods of teaching language, composition, literature, drama, nd media in grades seven through twelve. Students prepare and present lessons, evaluate udent work, and create units of study. Prerequisites: ENGL 375, 384, 389. Will not pply toward an English minor.

ENERAL (ENGL)

NGL 494 COOPERATIVE EDUCATION 0-2
ndividual contract arrangement involving student, faculty, and a cooperating organiza-on. Students will develop learning objectives with the employer and academic adviser. Veekly summaries of learning experiences will be submitted. Evaluations by the employer nd academic adviser are made at the completion of the co-op experience. Permission of cademic adviser required for enrollment. (Does not apply to the English major or minor.) rerequisites: 32 quarter hours including either ENGL 121, 122, or ENGL 141, 142.

NGL 495 ENGLISH COLLOQUIUM 0
series of lectures, programs, discussions and other activities designed to explore specific sues in literary and language study and enrich the professional preparation of students in nglish. Four quarters required of English majors, at least one of which must be during the nior year. Graded S or NC.

HEALTH AND PHYSICAL EDUCATION

Gary Hamburgh, Chair; Marvin Denney, Curtis Kuhlman, Shirley Wilson-Anderson, Tim Windemuth.

Walla Walla College 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, and health educators.

The department offers a major in health or 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 program in health offers concentrations in health promotion or health science. These concentrations will help prepare students to meet the increasing demands for health professionals trained in promoting wellness. The concentration 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 health science concentration 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 and Physiological Basis of physical education.

MAJOR IN HEALTH (Bachelor of Science)

A student majoring in health must complete 57-69 quarter hours of interdisciplinary courses as listed below, the required cognates for that concentration, 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
			29

CONCENTRATION: Health Promotion (40 credits)

HLTH	217	First Aid	2
HLTH	308	Community Health	3
HLTH	331	Consumer Health	3

HLTH	350	Internship Placement Orientation	0
HLTH	372	Health Promotion Planning and Evaluation	3
HLTH	437	Community Nutrition	3
HLTH	471	Human Sexuality	3
HLTH	475	Programs in Health Promotion	3
HLTH	481	Internship in Health Science	12
		Electives	8
			40

Electives for both concentrations
Electives must be chosen from HLTH courses or the following:
(approval of health adviser required)

ENVI	385	Environmental Stewardship	4
PEAC	123	Circuit Weight Training	1
PEAC	128	Jogging	1
PEAC	133	Aerobic Rhythm	1
PETH	225	Prevention of Injuries	2
PETH	323	Measurements and Evaluation	3
PETH	324	Adapted Physical Education and Recreation	3
PETH	325	Kinesiology	3
PSYC	220	Educational Psychology	3
PSYC	344	Social Psychology	4
PSYC	464	Introduction to Counseling	3
SOCI	324	Human Development and The Family	4
SOCI	435	Social Gerontology	3
SOCI	437	Death and Dying	3
SOWK	477	Introduction to Alcoholism and Addiction Treatment	3

Cognates for Health Promotion Concentration

BIOL	101, 102	General Biology	8
or			
BIOL	201, 202	Anatomy and Physiology	
WRIT	325	Writing for The Professions	3
MATH	206	Applied Statistics	4
MKTG	381	Principles of Marketing	4
or			
MKTG	383	Principles of Advertising	
PSYC	130	General Psychology	4
SOCI	204	General Sociology	4
SPCH	101	Fundamentals of Speech Communication	4

CONCENTRATION: Health Science (25 credits)
(16 hours selected from the following courses)

BIOL	202	Anatomy and Physiology	4
BIOL	222	Microbiology	5
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	394	Developmental Biology	4

BIOL	449	Vertebrate Histology	4
BIOL	464	Animal Physiology	4
BIOL	466	Immunology	4
CHEM	431	Biochemistry of Proteins	4
CHEM	432	Biochemistry of Metabolism	3
CHEM	435	Biochemistry of Proteins Laboratory	1
ENVI	385	Environmental Stewardship	4
			16
		Electives (see Health Promotion Electives)	9
			25

Cognates for Health Science Concentration

BIOL	101, 102, 103	General Biology	12
BIOL	250	Biostatistics	
or			
MATH	206	Applied Statistics	4
or			
GBUS	263	Business Statistics	
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	Precalculus	
or			
MATH	121, 122	Fundamentals of Mathematics I, II	4-8
or			
MATH	181	Analytic Geometry and Calculus I	
PSYC	130	General Psychology	4

CONCENTRATION: Pre-Physical Therapy (56 credits)

A student completing the Pre-Physical Therapy concentration completes th senior year at the Andrews University School of Physical Therapy. Completio of the degree is subject to your acceptance and matriculation into their program (Students who do not enter a physical therapy professional school may readil complete the health promotion concentration to this degree at WWC.) In or der to receive a Walla Walla College degree a student must be in residence o the WWC campus for the three quarters preceding entry into the school of physi cal therapy. Completion of the WWC departmental comprehensive examina tion is also required.

HLTH	308	Community Health Education	3
or			
HLTH	331	Consumer Health	3
NRSG	233	Medical Terminology	2
PEAC	123	Circuit Weight Training	1
PETH	225	Prevention of Injuries	2
PETH	325	Kinesiology	3
		Transfer credit from an affiliated physical therapy program	45
			56

Cognates for Pre-Physical Therapy Concentration

BIOL	201, 202	Anatomy and Physiology	8
PHYS	211-216	General Physics	
and			
CHEM	101, 102	Introductory Chemistry	
or			20
CHEM	141-146	General Chemistry	
and			
PHYS	201-205	Invitation to Physics	
SPCH	101	Fundamentals of Speech Communication	4
INFO	105	Personal Computing	3
MATH	206	Applied Statistics	4
MATH	117 or 121, 122	Precalculus or Fundamentals of Mathematics I, II	5-8
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
SOCI	204	General Sociology	4

*You will need to complete a senior outline, and request to have your first year PT transcripts sent to WWC.

The WWC 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 the World Religions (RELH 303) course at WWC.

MAJOR IN PHYSICAL EDUCATION (Bachelor of Science)

A student majoring in physical education must complete the 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 certification requirements as listed in the Education section of this bulletin.

Core Requirements:

PETH	214	Introduction to Physical Education and Recreation	2
PETH	225	Prevention of Injuries	2
PETH	323	Measurements and Evaluation	3
PETH	324	Adapted Physical Education and Recreation	3
PETH	325	Kinesiology	3
PETH	425	Motor Learning	3
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
			27

CONCENTRATION: Preparation for Teaching

HLTH	110	Wellness for Living	3
HLTH	208	Drugs and Society	3
HLTH	217	First Aid	2

HLTH/PSYC 370	Health Psychology	3
PEAC 120-246	Physical Activity Courses	10

Required activities: PEAC 120 or 123, 133, 142, 224, 244, 246.
Select 4 activities from the following: PEAC 171,173, 174, 175, 177.

PETH 261, 262	Officiating of Sports Activities	4
PETH 278	Programming Intramural and Recreational Activities	2
PETH 363, 364, 365	Theory of Coaching Team Activities	6
PETH 366	Coaching Practicum	1-3
PETH 395	Teaching Secondary Health and Physical Education	3
PETH 473	Teaching Elementary Health and Physical Education	3
	Electives	0-2
		40

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

Cognates:

BIOL 201, 202	Anatomy and Physiology	8
MATH 105	Mathematics With Applications	4
or		
MATH 206	Applied Statistics	

CONCENTRATION: Fitness Management

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 I	1
PEAC 246	Pro Act Tennis	1
PETH 205	Water Safety Instructor's Course	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	4
		34

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

Cognates:

ACCT 201, 202, 203	Principles of Accounting	10
BIOL 201, 202	Anatomy and Physiology	8

CIS	140	Computer Business Applications	4
HLTH	110	Wellness for Living	3
HLTH	220	Human Nutrition	4
INFO	105	Personal Computing	3
MGMT	275	Management of Small Business	4
MKTG	383	Principles of Advertising	4

CONCENTRATION: Physiological Basis

BIOL	201, 202	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	101, 102, 103	General Biology	12
BIOL	392	Cell Biology	
or			4
CHEM	431	Biochemistry of Proteins	
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
HLTH	110	Wellness for Living	3
INFO	105	Personal Computing	3
MATH	117	Precalculus	
or			5-8
MATH	121, 122	Fundamentals of Mathematics I, II	

MINOR IN HEALTH

A student minoring in health must complete 27 quarter hours.

HLTH	110	Wellness for Living	3
HLTH	205	Survey of Health	2
HLTH	220	Human Nutrition	4
HLTH	266	Safety Education	2
HLTH	315	Etiology of Selected Diseases	3
HLTH	370	Health Psychology	3
		Electives (3 must be upper division)	10
			27

Up to 10 hours 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.

Approval of health adviser required.

MINOR IN PHYSICAL EDUCATION

A student minoring in physical education must complete 30 quarter hours:

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	3
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
	*Electives	7
		30

*Approval of physical education adviser required.

HEALTH (HLTH)

HLTH 110 WELLNESS FOR LIVING 3
Survey course covering current health issues; emphasizes the promotion of personal well-being.

HLTH 205 SURVEY OF HEALTH 2
Survey of the development of health. Includes secular, biblical and Seventh-day Adventist history and current topics.

HLTH 208 DRUGS AND SOCIETY 3
Study of the use, misuse, and abuse of all classes of drugs, including alcohol and tobacco. Emphasis will be placed on the physiological, sociological, and psychological factors which may lead to drug experimentation and heavy drug use. Prerequisite: BIOL 201, 202 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 fee $25)

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 101 or 201, BIOL 105. (Course fee $35)

HLTH 328 BASIC THERAPY 2
Study of simple, nondrug therapeutic health practices; includes legal implications. (Course fee $15)

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. Required of all juniors. 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 238; 315 or permission of instructor.

HLTH 427 FITNESS EVALUATION TECHNIQUES 3
The primary focus is to develop and enhance the knowledge and practical skills in health and fitness evaluation. Specific emphasis will be directed toward evaluation techniques of exercise, physiology, nutrition, weight control, exercise programming, health appraisal and fitness, lecture and laboratory. Preparation for meeting ACSM Health/Fitness Instructor Certification. Prerequisites: BIOL 201, 202, 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 fee $25)

HLTH 471 HUMAN SEXUALITY (OR SOWK 471) 3
Study of the Christian perspective of human sexuality which forms a basis for appropriate intervention with sexual problems.

HLTH 472 STRESS MANAGEMENT (OR SOWK 472) 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 230 or SOCI 204.

HLTH 475 PROGRAMS IN HEALTH PROMOTION 3
Study of the methods of program production in health. Supervised experience in th implementation of health education programs within churches, industries, schools, o 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 an 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 stu dent to apply advanced classroom learning. Prerequisite: Approval by department.

HLTH 496 SEMINAR 1
Presentation and discussion of current topics in Health and Physical Education. Prerequi site: Senior standing in Health or permission of instructor.

PHYSICAL ACTIVITY COURSES (PEAC)

PEAC 107-195 PHYSICAL ACTIVITY COURSES 1
Motor skills are physiological development; adaptive programs as needed.

*PEAC 107 Lifeguard Training
*PEAC 110 Scuba Diver
*PEAC 111 Advanced Scuba
*PEAC 112 Master Diver
PEAC 113 Beginning Swimming
PEAC 114 Intermediate Swimming
*PEAC 115 Wakeboarding/Water Activities
PEAC 120 Nautilus Training I
PEAC 121 Nautilus Training II
PEAC 123 Circuit Weight Training
PEAC 127 Tumbling
PEAC 128 Jogging
PEAC 133 Aerobic Rhythm
PEAC 134 Step Aerobics
§PEAC 136 Ice Skating I
§PEAC 137 Ice Skating II
PEAC 142 Badminton
*PEAC 144 Golf I
*PEAC 145 Golf II
PEAC 146 Tennis I
PEAC 147 Tennis II
PEAC 151 Racquetball I
PEAC 152 Racquetball II
*PEAC 157 Backpacking
PEAC 158 Advanced Backpacking
PEAC 159 Cycling
*PEAC 161 Rock Climbing I
*PEAC 162 Rock Climbing II
§*PEAC 164 Downhill Skiing I
§*PEAC 165 Downhill Skiing II
PEAC 171 Basketball
PEAC 173 Flagball
PEAC 174 Soccer
PEAC 175 Softball
PEAC 177 Volleyball
PEAC 181 Fencing
§ PEAC 182 Athletics: Golf
§ PEAC 183 Athletics: Soccer
§ PEAC 184 Athletics: Softball
§ PEAC 185 Athletics: Volleyball
§ PEAC 186 Athletics: Basketball
§ PEAC 187 Self Defense
§ PEAC 190 Independent Activity
PEAC 195 Gymnastics Team

PROFESSIONAL ACTIVITIES (Individual)

PEAC 224 Pro Act Gymnastics
*PEAC 244 Pro Act Golf (even years)
PEAC 246 Pro Act Tennis (odd years)

* Special fee required. See the Finance Bulletin
§ Graded S or NC.

PHYSICAL EDUCATION THEORY (PETH)

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.

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 fee $35)

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 323 MEASUREMENTS AND EVALUATION 3
Study of the tests used in health, physical education, and recreation; includes application of tests in the evaluation process of motor performance and other areas of physical fitness. Two lectures per week. Laboratory arranged. Prerequisite: MATH 105 or 206.

PETH 324 ADAPTED PHYSICAL EDUCATION AND RECREATION 3
Study of common abnormalities found in students which may be corrected or helped by proper exercise; considers extent and limitations of the teacher's responsibility in this phase of education. Lecture and laboratory.

PETH 325 KINESIOLOGY 3
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 201, 202, PETH 323.

PETH 350 INTERNSHIP PLACEMENT ORIENTATION (OR HLTH 350) 0
(See HLTH 350 for course description.)

PETH 363, 364, 365 THEORY OF COACHING TEAM ACTIVITIES 2, 2, 2
Study of materials, methods, strategy and teaching professions; autumn, flagball and gymnastics; winter, basketball and volleyball; spring, softball and soccer.

PETH 366 COACHING PRACTICUM 1-2; 3
Supervised coaching experience in a varsity athletic program. Provides for involvement in the team selection process, planning of practices and application of theory in coaching for an entire season. This course can be repeated once for additional credit.

PETH 395 TEACHING SECONDARY HEALTH AND PHYSICAL EDUCATION 3
Study of the methods and techniques of teaching 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 3
Analysis of selected variables which influence the learning of motor skills. Lecture and laboratory. Prerequisite: PETH 323.

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 201, 202; PETH 323 or permission of instructor.

PETH 427 FITNESS EVALUATION TECHNIQUES 3
The primary focus is to develop and enhance the knowledge and practical skills in health and fitness evaluation. Specific emphasis will be directed toward evaluation techniques of exercise, physiology, nutrition, weight control, exercise programming, health appraisal and fitness, lecture and laboratory. Preparation for meeting ACSM Health/Fitness Instructor Certification. Prerequisites: BIOL 201, 202, 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 college, the purpose of the work in history is fourfold: to promote a better understanding of the past and an appreciation of the present; to broaden the cultural outlook and formulate a constructive philosophy of history of life; 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. Students are prepared for further study in teaching, law, government, and church service.

The objective of the philosophy program is to enable students to apply careful and rigorous methods of thinking as they evaluate their personal philosophies within a Christian context. Studies in philosophy include the following elements: 1) developing critical, analytical thinking skills; 2) studying major figures and schools in the history of human thought; 3) drawing interdisciplinary connections within the context of the philosophical method; 4) analyzing moral, spiritual, metaphysical, epistemological, and logical questions and issues. Studies in philosophy will also supply the student with the sort of analytical skills that will enable the student to most productively continue the life-long pursuit of knowledge and spiritual fulfillment.

MAJOR IN HISTORY (Bachelor of Arts)

A student majoring in history must complete 54/57 quarter hours in the major, 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.

Core Requirements:

HIST	120, 121, 122	History of Western Civilization (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. In order to exercise this option the student must complete all 12 credits)	12
HIST	221, 222	History of the United States	8
HIST	297	Historiography	4
		Electives (20 must be upper division)	26-30
		8 quarter hours of History of Philosophy (PHIL 306, 307, 308) may be counted toward 4 credits of history.	50

8 quarter hours must be European; 8 quarter hours must be American; electives to be chosen in consultation with and approved by the academic adviser.

Research Requirements:

Students planning to attend graduate school should take the thesis track.

HIST	396	Introduction to Historical Research	1
HIST	496, 497	Seminar	
or			
HIST	398	Thesis Research	3-6
and			
HIST	498, 499	Thesis Seminar (thesis track)	
		(required cognate: at least one year college-level language)	
			4-7

MINOR IN HISTORY

A student minoring in history must complete 28 quarter hours:

HIST	120, 121, 122	History of Western Civilization	8-12
		(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. In order to exercise this option the student must complete all 12 credits)	
HIST	221, 222	History of the United States	8
		Electives (8 must be upper division)	8-12
			28

Approval of history adviser required.

MINOR IN PHILOSOPHY

A student minoring in philosophy must complete 28 quarter hours:

PHIL	205	Introduction to Philosophy	4
PHIL	206	Introduction to Logic	4
		Electives (4 must be upper division)	20
			28

Approval of philosophy adviser required.

TEACHER CERTIFICATION

Students wishing Washington State teacher certification must take the following courses and fulfill certification requirements listed by the School of Education and Psychology.

Primary Endorsement: completion of the history major including HIST 446, Pacific Northwest History, and HIST 395, Methods of Teaching Social Studies.

Supporting Endorsement: completion of the minor including HIST 446, Pacific Northwest History, and HIST 395, Methods of Teaching Social Studies.

Please refer to the certification checksheet for additional information.

GEOGRAPHY (GEOG)

GEOG 252, PHYSICAL GEOGRAPHY 4

The physical environment in which society exists. The earth's crust, its water systems, land mass, and climates. Offered on demand.

GENERAL (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 from the colonial period 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
A survey of the history of the Ancient Near East to the rise of Islam. Considers economic and social life as well as political developments. 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. Offered odd years only.

HIST 336 HISTORY OF THE VIETNAM WAR 4
An examination of the political, military, diplomatic, social and cultural dimensions of the Vietnam conflict. 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 454 CLASSICAL POLITICAL THOUGHT 4
A survey of political thought from classical Greece through the Enlightenment. Prerequisites: HIST 120, 121 or HONR 131, 132; HIST 297, or permission of instructor. Offered on demand.

HIST 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. May serve as history elective. Will not apply towards general studies in history.

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.

RESEARCH (HIST)

Students who elect to take the thesis track should complete their language requirement before the junior year.

HIST 297 HISTORIOGRAPHY 4
A survey of historians and historical writings from classical Greece to the present.

HIST 396 INTRODUCTION TO HISTORICAL RESEARCH 1
Introduction to the methods, materials, and problems of historical research; students choose the topic for their senior papers and commence research.

HIST 398 THESIS RESEARCH 1-2; 3
Research for the Thesis Seminar. To be usually taken Winter and Spring during the junior year, and Autumn during the senior year. May be repeated for credit.

HIST 496, 497 SEMINAR 2, 1
Preparation of the senior seminar paper. Open only to senior history majors. Prerequisites: HIST 396.

HIST 498, 499 THESIS SEMINAR 2, 1
Preparation of the senior thesis. Open to thesis track history majors only. Prerequisites: HIST 396, 398. The thesis title will be included on the student's transcript.

EUROPEAN HISTORY (HIST)

HIST 274, 275 HISTORY OF ENGLAND 4, 4
Development and expansion of the English nation from the earliest times to the present.

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, 297, or permission of instructor. Offered even years only.

HIST 437 THE MIDDLE AGES AND THE RENAISSANCE 4
Study of the religious, political, social, intellectual, and artistic developments from the fall of the Roman Empire to the Italian Renaissance. Prerequisite: HIST 120, 121, 297, or permission of instructor. Offered odd years only.

HIST 438 REFORMATIONS 4
Study of the many Protestant and Catholic Reformations that transformed the beliefs, practices, and institutional structures of Christianity, 1450-1700. Prerequisite: HIST 121, 297, or permission of instructor. Offered even years only.

HIST 456 MEDIEVAL AND EARLY MODERN CHRISTIANITY 4
The history of Christianity from the Council of Chalcedon to the Enlightenment. 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, 297, 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, 297, or permission of instructor. Offered odd years only.

HIST 467 NATIONALISM, IMPERIALISM, AND WAR, 1850-1919 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, 297, 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, 297, 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, 297, or permission of instructor. Offered 2004-2005.

AMERICAN HISTORY (HIST)

HIST 284 HISTORY OF LATIN AMERICA 4
Survey of Latin American history, with particular emphasis on the 20th century. Offered odd years only.

HIST 285 HISTORY OF MEXICO 4
A survey of Mexican history from the colonial period to the present. Offered even years.

HIST 427 AMERICAN DIPLOMATIC HISTORY 4
Study of the relation of the United States to world politics; analysis of problems involved in the formulation of foreign policies from colonial times to the present. Prerequisite: HIST 297, or permission of instructor. Offered on demand.

HIST 436 RELIGION IN AMERICAN HISTORY 4
A historical examination of American Religions and their role in the social, political, and economic life of the nation. The course will also survey the theologies, institutional forms, and the artistic and emotional expressions of religions that have developed in the United States. 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, 297, or permission of instructor. Offered odd years only.

HIST 445 THE CIVIL WAR AND THE RISE OF INDUSTRIAL AMERICA, 1850-1900 4
Study of the sectional crisis, the war, and its impact on postwar political, economic, and social development. Prerequisite: HIST 221, 222, 297, 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 447 BASEBALL AND AMERICAN POPULAR 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.

HIST 448 THE EMERGENCE OF MODERN AMERICA 4
Examines the changes in America from the end of reconstruction to World War I. The course covers such issues as the rise of industry, the growth of consumerism, immigration, imperialism, Populism, and Progressivism. Offered odd years only. Prerequisite: HIST 222.

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 I to the present. The course covers such topics as the Great Depression, World War II, the Cold War, and the Vietnam War as well as the social, cultural, and economic impact of those events. Prerequisite: HIST 222. Offered even years only.

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. Offered even years only.

PHILOSOPHY (PHIL)

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 odd years only.

PHIL 407 PHILOSOPHY OF SCIENCE (OR BIOL 407) 4
See the Biology section of this bulletin.

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 (PLSC)

PLSC 224 AMERICAN GOVERNMENT 4
Study of the principles, organization, and development of American national, state, and local government.

INTERDISCIPLINARY PROGRAMS

BIOCHEMISTRY

Kyle Craig (Chemistry), David Lindsey (Biology), Academic Advisers.

MAJOR IN BIOCHEMISTRY (Bachelor of Science)

A student majoring in biochemistry must complete a minimum of 93 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).

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	351, 352	Physical Chemistry	6
CHEM	354, 355	Physical Chemistry Laboratory	2
CHEM	431	Biochemistry of Proteins	4
CHEM	432	Biochemistry of Metabolism	3
CHEM	433	Biochemistry of Nucleic Acids	2
CHEM	435	Biochemistry Proteins Laboratory	1
CHEM	436	Biochemistry of Nucleic Acids Laboratory	2
BIOL	101, 102, 103	General Biology	12
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	430	Molecular Biology Techniques	4
	or		
BIOL	394	Developmental Biology	
BIOL	211	Intro to Biological Research I	2
BIOL	416	Research in Biology	2
	or		
CHEM	479	Directed Research/Project	
		Electives (selected from the following list)	16
			93

Electives:

CHEM	265	Analytical Instrumental Methods I	4
CHEM	353, 356	Physical Chemistry and Laboratory	4
CHEM	427	Organic Structure and Mechanisms	3
CHEM	442	Inorganic Chemistry	4
CHEM	461	Analytical Instrumental Methods II	4
BIOL	430	Molecular Biology Techniques	4
	or		
BIOL	394	Developmental Biology	

BIOL	464	Animal Physiology	4
BIOL	466	Immunology	4
BIOL		Microbiology (upper division elective)	4
BIOL	416	Research in Biology	1-4
	or		
CHEM	479	Directed Research/Project	

Cognates:

BIOL	250	Biostatistics	4
	or		
MATH	206	Applied Statistics	
MATH	181, 281	Analytic Geometry and Calculus I, II	8
PHYS	211, 212, 213	General Physics	12
	and		
PHYS	214, 215, 216	General Physics Lab	
	or		
PHYS	251, 252, 253	Principles of Physics	
	and		
PHYS	254, 255, 256	Principles of Physics Lab	
			24

BIOENGINEERING

Jon Cole, Director; Carlton Cross, Scott Ligman, Joan Redd, Robert Wood.

Students majoring in bioengineering will take courses designed to insure a broad preparation in engineering fundamentals, mathematics, and the 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 primarily 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.

Students majoring in bioengineering must complete a minimum of 69 quarter hours in the major, the required cognates, and the general studies program for the baccalaureate degree as outlined in this bulletin. Writing for Engineers, ENGL 323, which is normally taken concurrently with third-year engineering courses, is required in place of the third quarter of ENGL 223, Research Writing. A course in speech communication is highly recommended. All Majors must take the Graduate Record Examination general section.

MAJOR IN BIOENGINEERING (Bachelor of Science)

Major Requirements:

Core Subjects			28-31
BIOL	101, 102, 103	General Biology	12
ENGR	221, 222, 223	Engineering Mechanics	9
ENGR	228	Circuit Analysis	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	

Bioengineering Electives			**8-13**
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	464	Animal Physiology	4
CHEM	351, 354	Physical Chemistry and Laboratory	4
CHEM	352, 355	Physical Chemistry and Laboratory	4
CHEM	431	Biochemistry of Proteins	4
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	465	Heat Transfer	4
PHYS	312, 315	Physical Electronics and Laboratory	4
PHYS	313	Thermodynamics	4
BIOL	470	Biophysics	5

Electives (21 must be upper division)		**25-33**
BIOL	Selected Courses	12-21
ENGR	Selected Courses	12-21
	Technical Electives	0-9
	Selected courses from MATH, PHYS, CHEM, CPTR	
		69

Electives must be approved by the Bioengineering Committee after consideration of the total student program.

* Six Quarters of Colloquium are Required.

Cognates:

CPTR	141	Introduction to Programming	4
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

Fred Liebrand (Physics), Scott Ligman, (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.

MAJOR IN BIOPHYSICS (Bachelor of Science)

A student majoring in biophysics must complete a minimum of 68 quarter hours of biology and physics courses (32-37 hours in biology and 33-37 hours in physics), the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Graduate Record Examinations in physics and biology (both general and subject portions) are required. A summer term at the Rosario Beach Marine Station is highly recommended.

Biology Requirements:

Major Requirements:

BIOL	101, 102, 103	General Biology	12
BIOL	211	Introduction to Biological Research I	2
BIOL	296	Current Topics in Biology	1
BIOL	392	Cell Biology	4
BIOL	393	Genetics	4
BIOL	464	Animal Physiology	4
BIOL	496	Senior Seminar	2
BIOL	495	Colloquium*	0
		Electives (in Biology)	3-8
			32-37

Electives must be upper division and chosen in consultation with a biology adviser.

* Required each quarter of juniors and seniors while in residence.

Physics 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	3
PHYS	313	Thermodynamics	4
PHYS	314	Modern Physics Laboratory	1
PHYS	414, 415, 416	Experimental Physics	3
PHYS	417, 418, 419	Physics Seminar II	3
PHYS	470	Biophysics	4
		Electives (in Physics)	3-5
			33-35

Electives must be upper division and chosen in consultation with a physics adviser.

Total hours in Biology and Physics (Minimum) **68**

Cognates:

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
CPTR 141	Introduction to Programming	4
PHYS 307	Scientific Modeling	4
MATH 181, 281-283	Analytic Geometry and Calculus I-IV	16
MATH 312	Ordinary Differential Equations	4
MATH 315	Probability and Statistics	4
		57

The following courses are recommended cognates for some career paths, but are not required for graduation:

CHEM 431	Biochemistry of Proteins	4
ENGR 228	Circuit Analysis	4
MATH 289	Linear Algebra and Its Applications	3

ENVIRONMENTAL STUDIES

Jon Cole, Director; Montgomery Buell (History), David Cowles (Biology), Dave Thomas (Religion), Dan Lamberton (English), Steven Lee (Chemistry), Fred Liebrand (Physics), Robert Wood (Engineering).

Environmental studies 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 required, environmental studies prepares for an appreciation of careers in air, water and land resource management, impact assessment and management of municipal and industrial wastes, 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.

MAJOR IN ENVIRONMENTAL SCIENCE (Bachelor of Science)

A student majoring in environmental science must complete 63 quarter credits in the core, 45 to 46 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 preapproved 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 Environmental Studies Committee.

Core Requirements:

BIOL	101,102,103	General Biology	12
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
PHYS	211,212,213	General Physics	9
or			
PHYS	251,252,253	**Principles of Physics	
PHYS	214,215,216	General Physics Laboratory	3
or			
PHYS	254,255,256	**Principles of Physics Laboratory	
PLSC	224	American Government	4
			63

Elective Emphasis and Emphasis Cognates: **35-42**

Cognates:

MATH	181,281	*Analytical Geometry and Calculus I, II	8
or			
MATH	123	Survey of Calculus	
and			
PHIL	206	Introduction to Logic	
MATH	289	Linear Algebra	3
BIOL	250	Biostatistics	4
or			
MATH	315	Probability and Statistics	
CPTR	141	Introduction to Programming	4
SPCH	101	Fundamentals of Speech Communication	4
HIST	121,122	History of Western Civilization	8
or			
HONR	131,132,133	Western Thought	
SOCI	204	General Sociology	4
or			
PSYC	130	General Psychology	
ENGL	316	Literature of The American West	4
or			
ENGL	317	Pacific Northwest Writers	
or			
RELT	248	Christian Ethics	
ART	251	Introduction to Art	4
or			
ENGL	313	Aesthetics in Image and Text	
			42-43

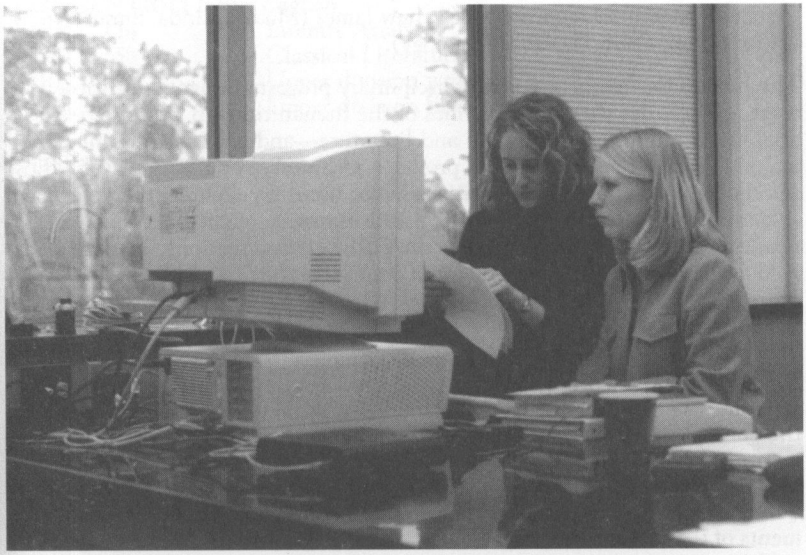
*Math 181, 281, 282,283, Calculus I, II, III and IV are required for some elective emphases and recommended for all.

**Principles of Physics is required in some elective emphases.

MINOR IN ENVIRONMENTAL STUDIES

A student minoring in environmental studies must complete 30 quarter credits:

General Biology, Chemistry or Physics 3rd quarter (non-CLEP)			4
ECON	212	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



ENVIRONMENTAL STUDIES (ENVI)

ENVI 151 ENVIRONMENTAL PRINCIPLES 4

Consideration of resource and pollution issues through application of biological, chemical, physical and geological principles: wildlife resources, habitat, species extinction, renewable and non-renewable resources, air pollution, acid rain, ozone depletion, global warming, water resources and quality, nuclear energy and wastes, electromagnetism, and hazardous materials. Corequisites: BIOL 101 or CHEM 141 and MATH 117, 121 or 181.

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 212, PLSC 224.

ENVI 479 ENVIRONMENTAL RESEARCH/PROJECT 2, 2
Each major must complete a project during the senior year.

ENVI 495 COLLOQUIUM 0
Lectures on current environmental topics. Minors must complete one quarter. Majors must complete four 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), Marilynn Loveless (Drama), Nancy Cross (English), Montgomery Buell (History), Jean-Paul Grimaud (Modern Languages), Matthew James (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.

MAJOR IN HUMANITIES (Bachelor of Arts)

A student majoring in humanities must complete the 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.

Core Requirements:

ART 251	Introduction to Art	4
ENGL 210, 211, 212 or ENGL 359	Survey of English and American Literature / World Literature	8
ENGL, FREN, GRMN, SPAN	One upper-division literature course	3-4
HIST 120, 121, 122	History of Western Civilization	8
HIST 458	Reformations	4
HMNT 496, 497	Seminar in Humanities	3
PHIL 205	Introduction to Philosophy	4
ANTH 225 or HIST 454	Cultural Anthropology / *Classical Political Thought	3-4

BIOL 407	Philosophy of Science		
or			4
ENVI 385	Environmental Stewardship		
MUHL 311	Survey of Music History		
or			4
MUHL 312	Survey of Music History		
PSYC 344	Social Psychology		
or			4
PSYC 366	Theories of Personality		
RELH 303	World Religions		
or			3-4
RELT 412	Philosophy of Religion		
			40-43

* Can also be taken as SOCI 454 or PHIL 454

CONCENTRATION: English

ENGL 234	Literary Analysis	4
ENGL 358	Classical Literature	4
WRIT 324-336	Upper-division writing	3
ENGL	Upper-division literature	11
		22

CONCENTRATION: Fine Arts

ART 324, 325, 326	History of World Art	9
MUHL 311, 312	Survey of Music History	8
SPCH 363	History of Theatre	
or		3-4
ENGL 464	Development of English Drama	
		20-21

CONCENTRATION: History (12 quarter hours must be upper division)

HIST 221, 222	History of the United States	8
HIST 454	Classical Political Thought (recommended)	4
HIST 458	American Intellectual History	4
HIST 466	Age of Revolutions (recommended)	4
		20

CONCENTRATION: Modern Languages

FREN 307	French Civilization	
FREN 406	17th Century French Literature	
FREN 407	18th Century French Literature	20
FREN 408	19th Century French Literature	
FREN 409	20th Century French Literature	
or		
SPAN 324, 325, 326	Survey of Spanish Literature	
SPAN 330	Iberian Culture and Civilization	
SPAN 331	Spanish-American Culture and Civilization	21
SPAN 424, 425	Contemporary Spanish Literature	
SPAN 431, 432, 433	Survey of Latin-American Literature	

CONCENTRATION: Philosophy

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	
PHIL	308	History Philosophy III: 18th Century to The Present	
PHIL	496	Seminar	4
		Elective (upper division)	4
			20

CONCENTRATION: Religious Studies

Twenty total hours are required for the concentration, ten of which may overlap with the general studies requirement in Religion. The concentration cannot include credit from the Biblical Studies (RELB) portion of the general studies offerings in Religion. Because the general studies requirement includes six hours of RELB course work, a student with a religious studies concentration will graduate with a total of at least twenty-six hours of religion. The six hours of Biblical Studies required in the general studies program, must include at least three upper division credits.

RELT	404	Approaches to Biblical Interpretation	11-12
RELH	303	World Religions	
or			
RELT	412	Philosophy of Religion (One of these courses is already required as a humanities cognate, the other is for the Religious Studies concentration.)	
PHIL	305	Moral Philosophy	
or			
RELT	248	Christian Ethics	
RELH	469	Advanced Studies	
RELT	469	Advanced Studies	
ENGL	454	Literature of the Bible	8-9
HIST	456	Medieval and Early Modern Christianity	
HONR	349	Religion in Social Contexts (for general studies honors students only)	
RELH	205	Biblical Archaeology	
RELH	455	Early Church History	
SOCI	449	Sociology of Religion	
			20

HUMANITIES (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.

MATHEMATICS

Kenneth Wiggins, Chair; Jonathan Duncan, Ward Soper, 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.

MAJOR IN MATHEMATICS (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 Achievement Test (MFAT) 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 at least one of MATH 442, 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

MAJOR IN MATHEMATICS (Bachelor of Science)

A student majoring in mathematics must complete 57 quarter hours in the major, consisting of the core requirements and one of three 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 Achievement Test (MFAT) 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

OPTION: Preparation for Graduate Study

MATH 451, 452, 453	Advanced Calculus	9
MATH 461, 462, 463	Abstract Algebra	12
	Electives*	12
		33

OPTION: Preparation for Secondary Teaching

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

OPTION: Applied Mathematics

MATH 315	Probability and Statistics	4
MATH 341	Numerical Analysis	4
MATH 351	Operations Research	4
MATH 442	Advanced Numerical Analysis	4
Two of the following courses:		
MATH 451, 452	Advanced Calculus	6-8
MATH 461, 462	Abstract Algebra	
	Electives*	9-11
		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.**

Cognates:

CPTR 141	Introduction to Programming	4
BIOL 101, 102, 103	General Biology	11-12
or		
CHEM 141, 142, 143	General Chemistry	
CHEM 144, 145, 146	General Chemistry Laboratory	
or		
CPTR 142, 143	Data Structures	
And one of the following CPTR courses:		
CPTR 215	Assembly Language Programming	
CPTR 355	Computer Graphics	
PHYS 251, 252, 253	Principles of Physics	9
PHYS 254, 255, 256	Principles of Physics Lab	3

MINOR IN MATHEMATICS

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 mathematics courses with numbers below 181, MATH 206, MEDU 395 and MEDU 401.

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 minor 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 (MATH)

Students must meet the college 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 MATHEMATICS WITH APPLICATIONS 4

Introduction to mathematics, including algebraic concepts, permutations, combinations, probability, descriptive statistics, and computer applications. Designed to meet the general studies requirement for the baccalaureate degree but will not apply toward a major or minor in mathematics.

MATH 112, 113 MATHEMATICS FOR ELEMENTARY TEACHERS 3, 3

Study of topics in mathematics, including number theory, geometry, numeration, number systems, graphs, algebra, statistics, measurements, and computer programming. 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 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, 122 FUNDAMENTALS OF MATHEMATICS I, II 4, 4

Study of college algebra and trigonometry including integers; rational, real, and complex numbers; equations and inequalities; polynomials; algebraic, exponential, logarithmic, and trigonometric functions; graphs; the binomial theorem; matrices; determinants; progressions; and mathematical induction. Credit will not be allowed for both MATH 117 and MATH 121 or 122. Prerequisite: Satisfactory departmental placement or MDEV 003.

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. Does 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.wwc.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.

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.wwc.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.wwc.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 probability, discrete and continuous probability density functions, moments, sampling, correlation, regression, confidence intervals, and hypothesis testing. Prerequisite: MATH 283.

MATH 316 STATISTICS 3
Study of multiple linear regression, analysis of variance, contingency tables, goodness-of-fit, nonparametric statistics, correlation and discriminant analysis, and Bayesian decision-making. Prerequisite: MATH 315. Offered even 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: CPTR 141; MATH 289. Corequisite: 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: CPTR 141; MATH 283; MATH 289 or permission of instructor. Offered odd years only.

MATH 360 AN 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 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 442 ADVANCED NUMERICAL ANALYSIS 4
Study of curve fitting, approximation of functions, Monte Carlo methods, boundary value problems, and partial differential equations. Prerequisite: MATH 341. Offered even 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.

DEVELOPMENTAL MATHEMATICS (MDEV)

MDEV 003 INTERMEDIATE ALGEBRA WITH GEOMETRY 5
Review of high school algebra and geometry including topics such as exponents, polynomials, rational expressions, graphs, lines, triangles, circles, and proofs. Credit does not apply toward graduation or for students seeking VA benefits.

MATHEMATICS EDUCATION (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.

MEDU 401 PROBLEM SOLVING 4
Study of problem solving methods, particularly as applied in the classroom. Emphasizes problem solving skills and realistic applications of mathematics. Computer usage will be integrated with material chosen from the following; algebra, geometry, discrete mathematics, probability, number theory, optimization. Prerequisite: MATH 105, or 113, or equivalent. Will not apply toward General Studies or toward a major or minor in mathematics. Offered odd years only, Summer quarter.

MODERN LANGUAGES

Jean-Paul Grimaud, Chair; Solange Henderson

The objectives of the department are to develop competence in the ability to understand, speak, read, and write a foreign language and to provide through the knowledge of foreign languages a deepened understanding and appreciation of the literature and culture of other people.

Walla Walla College is a member of the Adventist Colleges Abroad 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 full quarter (11 weeks/16 credits) 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 modern language department, and the Registrar prior to enrollment.

Majors are offered in French and Spanish. Minors are offered in French, German, and Spanish.

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.

With the expansion of the global economy, new horizons are opening up in international politics, environmental issues, technology and culture. Strong language and cross-cultural skills give students of language a powerful advantage for meeting the opportunities this changing world offers to them. 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. Therefore, the Department of Modern Languages strongly believes that all the students would benefit from taking a foreign language and invites them to do so.

MAJOR IN FRENCH or SPANISH (Bachelor of Arts)

A student majoring in French or Spanish must complete 45 quarter hours beyond FREN 103 or SPAN 103 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 credit hours of upper division modern language literature courses at Walla Walla College after their year abroad. All majors are required to take the departmental comprehensive examination.

MAJOR IN FRENCH

Major Requirements:

FREN	202, 203	Intermediate French	8
FREN	405 to 410	French Literature	12
		Electives (21 must be upper division)	25
			45

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

Cognates:

ENGL	234	Literary Analysis	4
or			
ENGL	204	Introduction to Literature	
ENGL	384	Advanced English Grammars	3
or			
ENGL	485	Linguistics	
or			
MDLG	395	Methods of Teaching Modern Languages	

MAJOR IN SPANISH

Major Requirements:

SPAN	222, 223	Intermediate Spanish	8
SPAN	324, 325, 326	Survey of Spanish Literature	12
SPAN	424, 425	Contemporary Spanish Literature	
SPAN	431, 432, 433	Survey of Latin-American Literature	
SPAN	414	Spanish Directed Reading	
		Electives (21 must be upper division)	25
			45

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

Cognates:

ENGL	234	Literary Analysis	4
or			
ENGL	204	Introduction to Literature	
ENGL	384	Advanced English Grammars	3
or			
ENGL	485	Linguistics	
or			
MDLG	395	Methods of Teaching Modern Languages	
HIST	284	History of Latin America	4
or			
HIST	285	History of Mexico	

Language majors in the Adventist Colleges Abroad program must take a minimum of twelve credit hours of upper division Modern Language literature courses at Walla Walla College.

MINOR IN FRENCH, GERMAN or SPANISH

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. 8 hours of intermediate level language is required. Approval of the academic adviser required.

Students wishing to minor in a modern language who have completed ACA coursework, must complete a minimum of 4 upper-division hours in the minor at Walla Walla College.

FRENCH (FREN)

FREN 101 INTRODUCTION TO FRENCH 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, plus basic grammar and vocabulary at the elementary level. Language laboratory required.

FREN 102, 103 ELEMENTARY FRENCH 4, 4
Elementary study of French, including listening, speaking, reading, and writing skills; emphasizes grammatical structures and vocabulary building. Language laboratory required. Prerequisite: FREN 101 or equivalent.

FREN 110 BASIC FRENCH REVIEW 4
Covers the content of French 101 and 102 for students who have studied French for at least two years at the secondary level. Employs experiential methodologies including exclusive use of French in the classroom and interactive presentations with an emphasis on communication skills. Contingent on enrollment.

FREN 120 CONVERSATIONAL FRENCH 2-4
Provides practice of intermediate-level French conversational skills through class discussion and oral presentations. Topics focus on French culture and current events. Prerequisites: FREN 103 or FREN 110 and FREN 103. Contingent on enrollment.

FREN 202, 203 INTERMEDIATE FRENCH (ACA Program in France) 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. Prerequisite: FREN 103 or equivalent.

FREN 301, 302, 303 SURVEY OF FRENCH LITERATURE 3, 3, 3
Survey of French masterworks from La Chanson de Roland to the present. Introduction to literary analysis; lectures, reports, required library reading. Prerequisite: FREN 203 or equivalent. Contingent on enrollment.

FREN 304, 305, 306 ADVANCED FRENCH (ACA Program in France) 3, 3, 3
Intensive training in oral and written French; includes review of grammar and extensive prose reading and exercises in composition and conversation. Laboratory required. Conducted in French. Must be taken in sequence. Prerequisite: FREN 203 or equivalent.

FREN 307 FRENCH CIVILIZATION (ACA Program in France) 4
Historical overview of French culture as seen in its art, architecture, science, literature, and politics; culminating in a study of French life in the 20th century. Prerequisite: FREN 203 or permission of instructor.

FREN 404 FRENCH DIRECTED READING 1-3; 6
Assigned reading and reports in French. Prerequisites: FREN 304, 305, 306. One to three hours per quarter; maximum, six.

FREN 405 16TH CENTURY FRENCH LITERATURE 4
Readings in poetry, drama and prose from 16th century writers including Rabelais, Montaigne, and Ronsard. Offered even years only.

FREN 406 17TH CENTURY FRENCH LITERATURE 4
Study of major classical writers from the era of Louis XIV such as Racine, Moliere, and Corneille. Offered on demand.

FREN 407 18TH CENTURY FRENCH LITERATURE 4
Reading, analysis and critique of the major works of the Age of Enlightenment. Authors include Voltaire, Montesquieu and Rousseau. Offered odd years only.

FREN 408 19TH CENTURY FRENCH LITERATURE 4
Study of French literature from the end of the Revolution to World War I; includes Romanticism, Realism, Naturalism, and the Parnasse.

FREN 409 20TH CENTURY FRENCH LITERATURE 4
Study of French literature from World War I to the present. Offered odd years only.

FREN 410 20TH CENTURY CANADIAN LITERATURE 4
Selected works of modern French-Canadian Literature from World War II to the present. Offered on demand.

GERMAN (GRMN)

GRMN 101 INTRODUCTION TO GERMAN 4
Introduction to descriptive grammatical terminology, the German sound system, basic grammar, and everyday vocabulary; provides elementary practice in the skills of understanding, speaking, reading, and writing. Language laboratory required.

GRMN 102, 103 ELEMENTARY GERMAN 4, 4
Elementary study of German, including listening, speaking, reading, and writing skills; emphasizes grammatical structures and vocabulary building. Language laboratory required. Prerequisite: GRMN 101 or equivalent.

GRMN 411 GERMAN DIRECTED READING 1-3; 6
Assigned readings and reports in German. Prerequisites: GRMN 311, 312, 313. One to three hours per quarter; maximum, six.

SPANISH (SPAN)

SPAN 101 INTRODUCTION TO SPANISH 4
Introduction to Spanish, providing the foundation for oral, writing and reading skills; includes basic Spanish grammar, as well as phonetics and phonology. Language laboratory required.

SPAN 102, 103 ELEMENTARY SPANISH 4, 4
Elementary study of Spanish, developing oral, writing, and reading skills. Language laboratory required. Prerequisite: SPAN 101 or equivalent.

SPAN 222, 223 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.

SPAN 324, 325, 326 SURVEY OF SPANISH LITERATURE 3, 3, 3
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: SPAN 223 or equivalent. Offered even years only.

SPAN 330 IBERIAN CULTURE AND CIVILIZATION 4
Study of the development of the cultural, social, and political life of the Iberian peoples, from Greek and Roman times to the present, as reflected in art, architecture, history, literature, music, and philosophy. Conducted in Spanish. Offered even years only.

SPAN 331 SPANISH-AMERICAN CULTURE AND CIVILIZATION 4
Study of the development of the cultural, social, and political life of Spanish America from the pre-Columbian period to the present, as reflected in art, architecture, history, literature, music, and philosophy. Offered odd years only.

SPAN 341, 342, 343 ADVANCED SPANISH GRAMMAR 3, 3, 3
(ACA Program in Spain)
Intensive training in oral and written Spanish; includes review of grammar and extensive prose reading, exercises in composition and conversation. Conducted in Spanish. Prerequisite: SPAN 223 or equivalent.

SPAN 414 SPANISH DIRECTED READING 1-3; 6
Assigned readings and reports in Spanish. Prerequisites: SPAN 341, 342, 343. One to three hours per quarter; maximum, six.

SPAN 424, 425 CONTEMPORARY SPANISH LITERATURE 3, 3
Study and analysis of Spanish literature from about 1898 to the latest writers who have achieved critical acclaim; emphasizes development of literary critical ability and evaluation of modern Spanish literature from historical and social points of view. Offered on demand.

SPAN 431, 432, 433 SURVEY OF LATIN-AMERICAN LITERATURE 3, 3, 3
Study of the development of Latin American literature from pre-Columbian Indian literature to the present; includes various genres of Latin American literature, supplemented by reading certain works in their entirety. Conducted in Spanish. Offered odd years only.

GENERAL (MDLG)

MDLG 395 METHODS OF TEACHING MODERN LANGUAGES 3
Study of principles and methods of teaching modern languages in the secondary school. Observation, demonstration, and class presentation are required. Will not apply on a major or minor in modern languages.

MDLG 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.

MUSIC

Matthew James, Chair; Brandon Beck, Debra Richter, Leonard Richter, Kraig Scott.

Instruction and experiences in music are provided to prepare students for careers in music, guide in the development of performance skills, increase 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.

Piano proficiency is required of all majors except piano and organ. Requirements for minimum proficiency must be completed prior to the student's pre-recital jury.

All students pursuing music degree programs will participate in a departmental music organization during each quarter in residence. Students whose performance area is voice will sing in a choir. Those whose performance area is in winds or percussion will play in the band; string students will play in the orchestra. Keyboard majors may substitute up to six quarters in accompanying practicum and approved small ensemble activities 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 *A Handbook for Students and Teachers*, available at the music office.

Transfer students majoring in music must take a minimum of six quarter hours in applied music at Walla Walla College. All majors must continue study in their primary applied area until completion of the Senior Recital.

MUSIC EDUCATION (Bachelor of Music)

A student majoring in music education must complete the core requirements and one emphasis, as well as the general studies and certification requirements as outlined below. This curriculum provides for K-12 state teaching certification. Senior students are required to take the general GRE and the Music MFAT.

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.

Core Requirements:

MUCT 121, 122, 123	Theory I	12
MUCT 221, 222, 223	Theory II	12
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	11
MUPF	Recital	
		62

Certification Requirements: Music Education

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

Choose one of the following three emphases:

Instrumental

MUPF	Applied Music[1]	20
MUED	Instrumental Techniques and Methods Classes (String majors will take an additional 3 hours in MUED 283)	8
MUPF	Voice Performance Studies	1
MUPF	Conducting[2]	6
		35-38

Choral

MUED 251, 252, 253	Singer's Diction	3
MUED 354	Vocal Techniques and Methods	3
MUPF	Applied Music[1]	20
MUPF	Keyboard Performance Studies	6
MUPF	Conducting[2]	6
		38

Keyboard

MUED 241	Piano Pedagogy Practicum	3
MUED 324	Organ Pedagogy and Literature	3
MUED 334	Advanced Piano Pedagogy and Literature	1
MUPF	Applied Music[1]	20
MUPF	Additional Keyboard Performance Studies (Students whose primary area is organ will take piano and/or harpsichord; those whose primary area is piano will take organ.)	6

MUPF 276	Accompanying Practicum	3
MUPF 351, 352, 353	Advanced Keyboard Skills	3
MUPF	Voice Performance Studies	1
		40

1. The student will choose these hours, 8 of which must be upper division, in one applied field. The upper division hours must be distributed over at least three quarters. A maximum of 3 hours of MUPF 127 may apply on 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.
2. Three of these hours must be in area of emphasis.

MUSIC PERFORMANCE (Bachelor of Music)

A student majoring in music performance must complete 116 quarter hours in the major, and general studies as listed below. (This curriculum does not result in state teaching certification.) Senior students are required to take the general GRE and the Music MFAT.

General Studies Requirements:

ENGL 121, 122	College Writing I, II	6
ENGL 223	Research Writing	3
FREN 101, 102, 103	French	12
or		
GRMN 101, 102, 103	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

Core Requirements:

MUCT 121, 122, 123	Theory I	12
MUCT 221, 222, 223	Theory II	12
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	12
MUPF	*Applied Music (one area)	48
MUPF 487	Recital (junior and senior year)	
		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 on the major. Keyboard majors will complete three hours of MUPF 351, three hours of MUPF 276, and three hours of MUPF 127 in piano, organ, or harpsichord depending on the major performance area. The preceding performance requirements can be used to satisfy the applied music core requirement of 48 hours. Piano majors will complete MUED 334, 3 hours of MUED 241, and 3 hours of organ or harpsichord study. Organ majors will complete MUED

324, and 3 hours of piano or harpsichord study. Voice majors will complete MUED 251, 252, 253 and MUED 354. Instrumental majors will complete the techniques and methods class related to their performance area.

MAJOR IN MUSIC (Bachelor of Arts)

A student majoring in music must complete 66 quarter hours in the major and the general studies program for the baccalaureate degree as outlined in this bulletin. Senior students are required to take the general GRE and the Music MFAT

Major Requirements:

MUCT 121, 122, 123	Theory I	12
MUCT 221, 222, 223	Theory II	12
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] (6 must be upper division in major performance area)	15
MUPF 487	*Recital	0
	Electives[2]	5
		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 on 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.

MINOR IN MUSIC

A student minoring in music must complete 30 quarter hours:

MUCT 121, 122, 123	Theory I	12
MUHL 124 or MUHL 134	Introduction to Music / World Music	4
MUPF	*Applied Music (3 must be upper division, a solo recital is required.)	8
	Electives (2 must be upper division)	6
		30

* A maximum of 3 hours of MUPF 127 may apply on the minor.

Participation in an ensemble appropriate to the applied area is required during each quarter of performance studies.

COMPOSITION AND THEORY (MUCT)

MUCT 121, 122, 123 THEORY I 4, 4, 4

Intensive study of traditional harmonic concepts up to and including secondary dominants. Aural skills (sightsinging and ear training) are integrated throughout. Prerequisite: passing of an entrance examination.

MUCT 221, 222, 223 THEORY II **4, 4, 4**
Study of music theory, emphasizing melodic and harmonic developments of the late nineteenth and twentieth centuries. Aural skills (sightsinging and ear training) are integrated throughout. Prerequisites: MUCT 121, 122, 123; MUHL 134.

MUCT 231 MUSIC NOTATION BY COMPUTER **1-2**
Introduction to computer music notation and printing. Prerequisite: Permission of instructor. Offered on demand.

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 on demand.

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. Prerequisite: MUCT 424. Offered even 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.

MUSIC EDUCATION (MUED)

MUED 241 PIANO PEDAGOGY PRACTICUM **0-1; 3**
Supervised piano teaching, including discussion of appropriate materials, repertoire, and techniques. May be repeated for additional credit. Prerequisites: completion of MUCT 121, 122, 123 and concurrent study in MUPF 227 in keyboard.

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. Offered on demand.

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 on demand.

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 on demand.

MUED 283 STRING PEDAGOGY PRACTICUM 0-1; 3
Supervised string teaching, including discussion of appropriate materials, repertoire and techniques. May be repeated for additional credit. Prerequisites: completion of MUED 281, 282 or permission of instructor. Offered on demand.

MUED 291, 292 PERCUSSION TECHNIQUES AND METHODS 1, 1
Class instruction in the performance and teaching of percussion instruments. Offered on demand.

MUED 294 COOPERATIVE EDUCATION 0-2
Individual contract arrangement involving student, faculty and cooperating organization. Student 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. Attendance at pre-employment seminar and post-employment seminar is required. Prerequisite: 32 quarter hours including either ENGL 121, 122 or ENGL 141, 142.

MUED 324 ORGAN PEDAGOGY AND LITERATURE 3
Study in the teaching of organ, including a survey of materials, repertoire, and techniques. Offered odd years only.

MUED 334 ADVANCED PIANO PEDAGOGY AND LITERATURE 1
Study of the teaching of piano, including a survey of materials, repertoire, and techniques. Prerequisite: 3 hours of MUED 241 and permission of instructor. Offered on demand.

MUED 354 VOCAL TECHNIQUES AND METHODS 3
Study of vocal production and instruction, including a survey of materials. Offered even years only.

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 MATERIALS 4
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 (MUHL)

MUHL 124 INTRODUCTION TO MUSIC 4
Introduction to music; includes perception of its elements, recognition of its forms, and an awareness of historical perspective. May not apply toward a music major.

MUHL 134 WORLD MUSIC 4
An overview of the music in other countries and cultures. (Course fee $30)

MUHL 311, 312 SURVEY OF MUSIC HISTORY 4, 4
Survey of the history and literature of music from antiquity through the twentieth century; includes discussion of the relation between music and society and the implications of aesthetic understanding in each period. Prerequisite: Permission of instructor. May not apply toward a music major. Offered even years only.

MUHL 321, 322, 323 HISTORY OF MUSIC 4, 4, 4
The history and literature of western music from antiquity through the twentieth century. Prerequisites: Completion of MUHL 134; MUCT 221, 222, 223; and completion or concurrent enrollment in MUCT 424. Required laboratory. Offered odd years only.

MUSIC PERFORMANCE (MUPF)

ENSEMBLES

Membership in the performance groups listed below is by audition or invitation. These classes may be repeated for additional credit.

MUPF 215 COLLEGIATE CHORALE 0-1
A large choir which performs major choral works and sings for church services.

MUPF 245 I CANTORI 0-1
A select touring choral group which performs sacred and secular repertoire as well as dramatic musical works from all eras. Participation in Collegiate Chorale, MUPF 215, required.

MUPF 255 CONCERT BAND 0-1
A traditional concert band which performs locally on a quarterly basis and occasionally tours.

MUPF 266 ORCHESTRA 0-1
An organization which performs representative orchestral literature from the Baroque era to the present. Graded S or NC.

MUPF 275 WALLA WALLA SYMPHONY ORCHESTRA 0-1
A community symphonic orchestra open to members of the college orchestra. Graded S or NC.

MUPF 276 ACCOMPANYING PRACTICUM 0-1; 6
Supervised accompanying activities, including discussion of ensemble and technique as appropriate. May be repeated for additional credit. Prerequisite: MUPF 227.

MUPF 285 ENSEMBLE 0-1
Vocal or instrumental duos, trios, quartets, or larger groups under the direction of a music department staff member.

CONDUCTING

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 as approved by staff member in consultation with music faculty. May be repeated for additional credit. Prerequisites: MUPF 361 and permission of instructor.

PERFORMANCE STUDIES (Lessons)

One to four hours of performance studies may be earned each quarter. Nine 30-minute lessons per quarter and daily practice totaling five clock hours a week will yield one quarter hour of credit. 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 odd years only.

MUPF 127 APPLIED MUSIC 1-2

Introductory study in 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 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 instrument or voice; satisfies credit requirement for performance studies in the B.A. and B.Mus.Ed degrees. Prerequisite: approval of music faculty by examination.

MUPF 237 APPLIED MUSIC 1-4

Study in instrument or voice; satisfies credit requirement 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 requirement 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 which keyboard persons 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. (May be repeated)

MUPF 427 APPLIED MUSIC 1-4

Advanced study in 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 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

An alternative to MUPF 487, Senior Recital, 0 credits; in Bachelor of Arts, Music.

MUPF 487 JUNIOR/SENIOR RECITAL 0

Preparation of materials for recital in consultation with music staff member. 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 Placement and Cooperative Education Office. 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 college co-op coordinator.

Participants in the Cooperative Education Program may gain valuable work experience while earning college credit. For more information, students may contact their academic departments and the Placement and Cooperative Education Office.

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 210 CAREER EXPLORATION AND PREPARATION 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.

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.

CHRISTIAN SERVICE VOLUNTEER

SMTF 100 EXPERIENTIAL PROGRAM 6
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.

TEACHING LEARNING CENTER

Kristy Guldhammer, Director.

GENERAL (GNRL)

GNRL 100 PRINCIPLES OF SYSTEMATIC STUDY 2

Study of systematic and practical techniques used in college work. Credit will not apply toward graduation or calculate into G.P.A.

READING (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, Verlene Meyer, Michaelynn Paul, Karen Tetz, Jan Thurnhofer, Fred Troutman, Lynn Wagner, Caroline Wrightman.

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 Portland 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 write 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, 61 Broadway, New York, NY 10006. Phone: 1-800-669-1656.

ACCREDITATION

The School is a member of the Council of Baccalaureate and Higher Degree Programs of the National League for Nursing Accrediting Commission and is fully accredited by NLNAC. The program is approved by the Washington State Nursing Commission and by the Office of Degree Authorization for Oregon.

ADMISSION

Applicants will apply for admission to the college through the admissions office. See the admission requirements in the Admission to the College section of this Bulletin. Additional requirements are listed below for each student category.

Once admitted to the college and prior to entering the first clinical nursing course, each student must be accepted to the School of Nursing as a nursing major. A separate nursing application should be submitted with the application to the college.

Each nursing applicant or 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 committed a felony.

The following requirements must be met for all categories of nursing applicants:

1. Have a grade-point average of 2.50 or greater; submit all official transcripts including high school.
2. Submit the completed School of Nursing application along with the application to the college.
3. Submit three letters of recommendation (prefer teacher, employer or co-worker).
4. Have a satisfactory score on the required reading skills test. Schedule with adviser.
5. Have a score of 13 or above on the California Critical Thinking Skills Test. Schedule with adviser.
6. 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 skills test and the California Critical Thinking Skills Test.

After acceptance into the School of Nursing, the following are required:

1. Have a physical examination. Submit documentation for proof of the physical examination, signed by a licensed health care provider, to Student Health Services for College Place, Washington, campus or to the School of Nursing for the Portland, Oregon, campus.
2. Have completed immunization records as required in the School of Nursing Student Handbook. Submit immunization records to Student Health Services for College Place, Washington, campus or to the School of Nursing for the Portland, Oregon, campus.
3. Obtain health insurance. Provide necessary information on the WWC health care insurance plan form, required yearly, or whenever health insurance is charged.
4. Prior to taking clinical coursework, a student must obtain current 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.
5. Purchase the standard School of Nursing uniform, available at the School of Nursing office. (The uniform is the same for both campuses.)

Category 1, Basic Nursing Applicant: College Place, Washington, campus. This category requires the student to meet the above admission requirements to receive admittance into the nursing program.

Additional admission requirements must be met for each of the following categories in the nursing program.

Category 2, Summer Entry Applicant; Portland, Oregon, campus. Students who have completed prerequisite general studies and cognate courses may apply to the School of Nursing to take sophomore nursing courses during the summer term on the Portland campus. The student must meet this additional requirement:

Be admitted to the college as a student in good standing. The School of Nursing Admissions Committee begins reviewing applicants on February 1 and continues until the class is full. Preference is given to applicants with a GPA above 3.0. Students will be notified of acceptance status to the School of Nursing. Once accepted, a $300 (U.S.) partially refundable fee, applied toward tuition, is required to secure a place in the program. Up to $130 is refundable.

Category 3, Registered Nurse (RN) Plus Applicant. The applicant must be a nursing graduate from an accredited college or diploma program and hold a current registered nurse license in Oregon. Enrollment may be full or part-time. Placement in the program is individual and determined by transfer credits and/or by successful completion of optional validation examinations. The student must meet these additional requirements:

1. 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.
2. 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.
3. Validation Process:
   A. Licensed RN's more than 5 years from graduation and successful completion of the NCLEX-RN must achieve a satisfactory score on the necessary validation exams.
   B. Licensed RN's who have graduated from an accredited school of nursing and passed the NCLEX-RN within the past 5 years are exempt from further validation testing.

Category 4, Transfer Student from Another Nursing Program. The applicant must be enrolled in good standing at an accredited school of nursing or have been enrolled in good standing within the past two years. Generally, nursing credits more than three years old are not accepted. Transfer students will be evaluated individually and accepted on a space available basis. The student must meet this additional requirement:

1. Submit to the School of Nursing a letter of recommendation from the director of the school of nursing from which the applicant is transferring.
2. Submit syllabi of all completed nursing courses to the School of Nursing.

Category 5, Licensed Practical Nurse (LPN). Applicants having a valid LPN license and satisfactory completion of required prerequisite courses may take a standardized examination to validate nursing knowledge and receive advanced standing as a junior level student.

PROGRESSION AND GRADUATION REQUIREMENTS

Any student with a grade-point average less than 2.50 will be placed on conditional progression status and reviewed quarterly for continuation in the program.

A student who receives a W or who receives a grade lower than C in any nursing course or required cognate course is required to repeat that course. Permission to continue as a nursing major after a W or a grade lower than C in a nursing course is granted at the discretion of the faculty in response to student petition.

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.

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.

National examinations are given after completion of designated nursing courses. Students who fail to achieve a satisfactory score must enroll in remedial studies. All junior level standardized tests must be passed prior to entrance into any senior nursing classes.

During the last quarter of the senior year, a standardized comprehensive nursing examination is given. A passing score must be achieved on this 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 may 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 available 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 a state and/or federal security check. Students are responsible for any fee.

MAJOR IN NURSING (Bachelor of Science)

A student majoring in nursing must complete 83 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 2.50 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	4
NRSG	421	Nursing of the Chronically Ill	8
NRSG	431	Nursing Management	3
NRSG	433/233	Topics in Nursing (one course)	2
NRSG	433/233	Topics in Nursing	
or			
NRSG	490	Nursing Practicum	2
or			
NRSG	494	Cooperative Education	
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
		*This course is a prerequisite for 400 level nursing clinical courses	83

Cognates: No grade lower than C will apply.

BIOL	201, 202	Anatomy and Physiology	8
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	Racial and Ethnic Relations	3
SOCI	324	Human Development and the Family	4
SPCH	101	Fundamentals of Speech Communication	4
or			
SPCH	207	Small Group Communication	3
			47-48

General Studies: See the General Studies section of this Bulletin.

		Physical Education (activity courses)	2
		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)	14

NURSING (NRSG)

LPN VALIDATION

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.

RN VALIDATION

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 31

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 28 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 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. Open to non-nursing majors.

NRSG 211 FUNDAMENTALS OF NURSING 4

Emphasis on developing beginning skills and knowledge of the nursing process; learning experiences in an adult acute or chronic health care facility. Prerequisites: BIOL 201, 202. Prerequisites or corequisites: BIOL 222; CHEM 101, 102; HLTH 220; 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; learning experiences in a health care facility. Prerequisite: NRSG 211. Lab fee applies.

NRSG 213 PHARMACOLOGY IN NURSING 4

Introduction to the major classifications of therapeutic drugs. Clinical experience includes the administration of drugs to clients in a chronic or acute care setting. Prerequisite: NRSG 211. Prerequisite or corequisite: NRSG 212. Lab fee applies.

NRSG 233 TOPICS IN NURSING 1-2; 4

Study of current topics of interest in professional nursing. May include papers or other projects. Up to 6 credits of NRSG 233 and NRSG 433 may apply toward the major.

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 310 TRANSITIONS 2

Facilitates the transition of the registered 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. May apply to NRSG 433, Topics in Nursing, requirement.

NRSG 321 NURSING OF THE ACUTELY ILL ADULT 8

Nursing care of 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. Practicum 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 within the context of the family experiencing alterations in psychosocial behavior. Students participate in small group process. Practicum 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. Practicum includes hospital, community and home settings. Prerequisite NRSG 213. Prerequisite or corequisite: NRSG 354; SOCI 324. Lab fee applies.

NRSG 354 PATHOPHYSIOLOGY 4
Emphasizes understanding diseases of body systems and treatment as a basis for nursing assessment and intervention. Prerequisites: BIOL 201, 202, 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. Practicum 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 1-3; 4
Study of current topics of interest in professional nursing. May include papers or other projects. Up to six credits of NRSG 233 and NRSG 433 may apply toward the major.

NRSG 437 ADVANCED ACUTE NURSING 8
Advanced nursing care of clients in an acute care setting who are experiencing complex multi-system health problems. Practicum included. Prerequisites: NRSG 321, 325, 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. Practicum 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.

NRSG 490 NURSING PRACTICUM 2-4; 4
Individual study arrangement involving students, faculty, and health care agencies to gain practical experience in an area of special interest. Prerequisite: Senior standing, and a cumulative GPA of 3.0 or higher. Up to 4 hours may apply toward the major.

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

Roy Campbell, Chair; Fred 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 major in biophysics 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)

MAJOR IN PHYSICS (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	1
PHYS 401, 402	Electricity and Magnetism	8
PHYS 414 or 415 or 416	Experimental Physics	1
PHYS 417, 418, 419	Physics Seminar	3
PHYS 420	Classical Mechanics	3
PHYS, ASTR	Electives	12
		50

Electives may be ASTR 144-149 or any upper division course with a PHYS prefix. No more than 4 hours of lower division coursework 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 423	Complex Analysis	4

MAJOR IN PHYSICS (Bachelor of Science)

A student majoring in physics must complete 61 quarter hours in the major, the required cognates, the general studies program, and all baccalaureate degree requirements as outlined in this bulletin. Senior students are required to take the Graduate Record Examination, general and subject (Physics) sections.

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	1
PHYS 401, 402	Electricity and Magnetism	8
PHYS 414, 415, 416	Experimental Physics	3
PHYS 417, 418, 419	Physics Seminar	3
PHYS 420, 421	Classical Mechanics	6
PHYS 422, 423	Quantum Mechanics	6
PHYS	Electives	12
		61

* 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 307	Scientific Modeling	4
PHYS 312	Physical Electronics	3
PHYS 315	Physical Electronics Laboratory	1
PHYS 321	Classical Optics	3
PHYS 325	Modern Optics	3
PHYS 326, 327	Optics Laboratory	1,1
PHYS 412	Statistical Mechanics	3
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	4
ENGR 354	Digital Logic	3
MATH 315	Probability and Statistics	4
MATH 341	Numerical Analysis	4
MATH 423	Complex Analysis	4

MAJOR IN BIOPHYSICS (Bachelor of Science)

See the Interdisciplinary section of the bulletin.

MINOR IN PHYSICS

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 418 and 419 do not count towards a minor. PHYS 310 Modern Physics and PHYS 314 Modern Physics Lab are required of all minors.

COURSES

ASTRONOMY (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 fee $25 per quarter)

GEOLOGY (GEOL)

GEOL 101, 102 PHYSICAL GEOLOGY 4, 4
Study of the earth, its composition and structure, and the processes operating to give its present form. Includes the following topics: types of rocks and how they are formed, erosion, glaciation, relative dating techniques, plate tectonics, volcanism, and seismology. Laboratory experience is integrated with the class work. Must be taken in sequence. Prerequisite: permission of instructor. Course not available for dual credit. If counted toward high school graduation, it will not be counted as college credit. Offered only on the campus of Walla Walla Valley Academy.

PHYSICS (PHYS)

PHYS 201, 202 INVITATION TO 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 count towards a major or minor. Corequisites: PHYS 204, 205.

PHYS 204, 205 INVITATION TO PHYSICS LABORATORY 1, 1
Laboratory work integrated with PHYS 201, 202. Does not count towards a major or minor. (PHYS 204, course fee $40) (PHYS 205, course fee $25)

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.

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.

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 307 SCIENTIFIC MODELING 4
Models of physical and biophysical systems are studied using contemporary computer-based methods. Examples are chosen to illustrate the application of physical and biophysical principles to models of real systems which are of current interest. Prerequisites: PHYS 213 or PHYS 253; MATH 281. Offered even years.

PHYS 310 MODERN PHYSICS I 3
Study of the basic principles of quantum theory and their application to atomic and molecular properties. Corequisites: PHYS 314.

PHYS 311 MODERN PHYSICS II 3
Study of special relativity, elementary particles, nuclei and the solid state. Prerequisites: PHYS 310; MATH 315 recommended. Recommended corequisite PHYS 416.

PHYS 312 PHYSICAL ELECTRONICS (OR ENGR 312) 3
Study of the physical principles of solid state electronics devices. Prerequisite: PHYS 310. Corequisite: PHYS 315.

PHYS 313 THERMODYNAMICS 4
Introduction to the physical theories of equilibrium thermostatics and irreversible thermodynamics based on elementary statistical mechanics. Prerequisite: PHYS 310.

PHYS 314 MODERN PHYSICS LABORATORY 1
Laboratory activities integrated with PHYS 310 Modern Physics. Corequisite: PHYS 310.

PHYS 315 PHYSICAL ELECTRONICS LABORATORY 1
Experimental study of the physical principles of solid state electronics devices. Corequisite: PHYS 312.

PHYS 321 CLASSICAL OPTICS 3
Study of classical theory of radiation and optics based on Maxwell's equations; includes reflection, refraction, dispersion, diffraction, interference, coherence, polarization, and scattering. Corequisite: PHYS 326. Offered odd years.

PHYS 325 MODERN OPTICS 3
Study of modern optics and its interface with matter, including non-linear optics and applications in fiber optics and opto-electronics. Corequisite: PHYS 327. Offered odd years.

PHYS 326 CLASSICAL OPTICS LABORATORY 1
Experimental study of geometrical and physical optics. Corequisite: PHYS 321. Offered odd years.

PHYS 327 MODERN OPTICS LABORATORY 1
Experimental study of physical optics and its application to fiber optics and optoelectronic devices. Corequisite: PHYS 325. 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 412 STATISTICAL MECHANICS 3
Advanced treatment of thermodynamics from a statistical perspective. Includes the physics of non-equilibrium systems. Prerequisite: PHYS 313. Offered even years only.

PHYS 414, 415, 416 EXPERIMENTAL PHYSICS 1, 1, 1
Experimental investigations in classical and modern physics.

PHYS 417, 418, 419 PHYSICS SEMINAR 1, 1, 1
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.

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 odd 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 103; PHYS 213 or PHYS 253; MATH 123 or MATH 181 or permission of instructor.

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 College 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.

ARCHITECTURE

Laurel Dovich, Tom Emmerson, Academic Advisers.

Professional schools of architecture usually accept one year of preprofessional study. Final acceptance for professional studies is determined competitively, and the level of expected preprofessional achievement varies considerably among schools.

The following typical one-year program will satisfy the basic entrance requirements of many professional schools of architecture. However, admission requirements vary between programs and students should plan their preprofessional studies to fit the requirements of the particular institutions to which they intend to apply.

Students interested in completing the preprofessional architecture requirements at Walla Walla College and in transferring to Andrews University for the architecture program should consult with the preprofessional architecture advisers for the recommended course of study.

ART	161, 162, 163	Design	9
ART	184, 185	Introduction to Drawing I, II	4
ART	251	Introduction to Art	4
ART	264	Introduction to Sculpture I	2
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
INFO	105	Personal Computing	3
MATH	121, 122	Fundamentals of Mathematics I, II	8
MATH	181	Analytic Geometry and Calculus I	4
PEAC		Electives	2
RELB, RELH, RELT		Electives	6

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	3
or		
SOCI 236	Racial and Ethnic Relations	4
BIOL 101, 102, 103	General Biology	12
BIOL 201, 202	Anatomy and Physiology	8
BIOL 222	Microbiology	5
CHEM 101, 102, 103	Introductory Chemistry	11
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	Precalculus	4-5
or		
MATH 121	Fundamentals of 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 (choose from SPCH 101, CPTR 105)	
	To meet the minimum of 96 quarter hours.	

DENTISTRY

Robert Rittenhouse, Academic Adviser.

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 101, 102, 103	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	201, 202	Anatomy and Physiology	8
BIOL	222	Microbiology	5
CHEM	101, 102, 103	Introductory Chemistry	11
		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	Racial and Ethnic Relations	3

Physical Education			2
HLTH	110	Wellness for Living	
	or		3-4
HLTH	220	Human Nutrition	
Religion Electives			8
		(meet 96 quarter hour requirement)	
INFO	105	Personal 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	Racial and Ethnic Relations	3
BIOL	201,202	Anatomy and Physiology	
BIOL	222	Microbiology	5
CHEM	101,102,103	Introductory Chemistry	12
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	Invitation to Physics (or high school physics)	0-4
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, INFO 105	

Additional general education courses may be taken at WWC before transferring.

HEALTH INFORMATION ADMINISTRATION

JoAnn Wiggins, 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	4
or			
SOCI	236	Racial and Ethnic Relations	3
BIOL	201,202	Anatomy and Physiology	8
BIOL	222	Microbiology	5
		(Highly recommended)	
INFO	105	Personal Computing	3
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	Mathematics With Applications	
or			4
MATH	121	Fundamentals of Math	
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
		NRSG 234 Medical Terminology	2
		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, Academic Adviser.

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

Scott Ligman, Gene Stone, Shirley Wilson-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	101, 102, 103	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	Fundamentals of Mathematics I, II	4-8
or			
MATH	117	Precalculus	
or			
MATH	181	Analytical Geometry and Calculus I	
PHYS	211, 212, 213	General Physics	12
PHYS	214, 215, 216	General Physics Laboratory	
or			
PHYS	251, 252, 253	Principles of Physics	
PHYS	254, 255, 256	Principles of Physics Laboratory	
		Religion	16

Also recommended are:

BIOL	394	Developmental Biology	4
BIOL	449	Vertebrate Histology	4
BIOL	466	Immunology	4
CHEM	431	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 SDA 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.

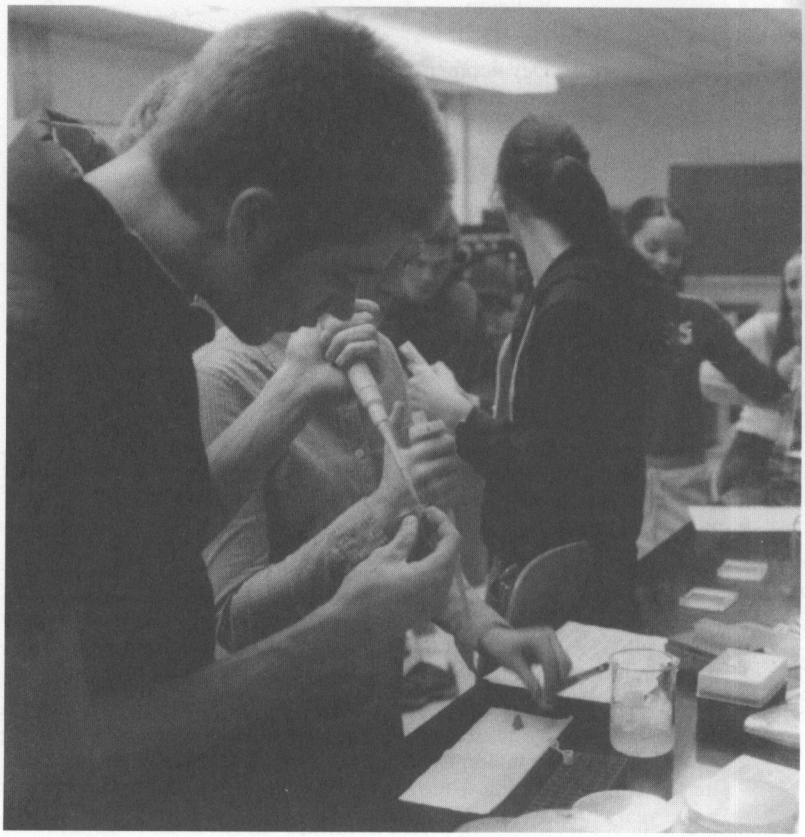
The exact entry requirements into these programs vary. Students interested in this major should contact institutions offering the clinical program early in their college career in order to plan a course schedule. In general the course requirements will include:

BIOL	101, 102, 103	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 Wilson-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		3
SOCI 236	Racial and Ethnic Relations	
BIOL 201,202	Anatomy and Physiology	8
BIOL 222	Microbiology	5
CHEM 141,142,143	General Chemistry	9
CHEM 144,145,146	General Chemistry Lab	3
INFO 105	Personal Computing	3
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	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	
	Mathematics	
	High school algebra and geometry or equivalent with grade of C or better	
	Professional Courses	12
	Include HLTH 220 and other approved courses	
	Religion	4 credits per year
	Social Sciences	4-8
	Select from HIST 224, HIST 454, ANTH 225, PLSC 224	
	Electives	
	To meet the minimum of 96 quarter hours, INFO 105, 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		3
SOCI 236	Racial and Ethnic Relations	
BIOL 201, 202	Anatomy and Physiology	8
CHEM 101	Introductory Chemistry (including Laboratory)	4
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	
INFO	105	Personal Computing	3
MATH	206	Applied Statistics	4
PHYS	201	Invitation to Physics	3
PHYS	204	Invitation to Physics Laboratory	1
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	
or			4
SOCI	324	Human Development and the Family	
SOCI	204	General Sociology	4
		Select an additional behavioral science or Sociology course.	
SPCH	101	Fundamentals of Speech Communication	4
		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 programs are usually a two-year total 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 College which meet these prerequisites are:

BIOL	201, 202	Anatomy and Physiology	8
PHYS	201 +204	Invitation to Physics + Lab	
or			4
CHEM	101	Introduction to Chemistry	
ANTH	225	Cultural Anthropology	
or			3-4
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

INFO	105	Personal Computing	3
		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	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

Roy Campbell, 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	*Fundamentals of 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

* Fundamentals of 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	101, 102, 103	General Biology	12
BIOL	201, 202	Anatomy and Physiology	8
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 Wilson-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	101, 102, 103	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

Steven Lee, Timothy Tiffin, 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 College to meet the entry requirements *of physical therapy schools are:*

ANTH	225	Cultural Anthropology	4
or			
SOCI	236	Racial and Ethnic Relations	3
BIOL	201, 202	Anatomy and Physiology	8
or			
BIOL	101, 102, 103	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	
MATH	117	Precalculus	5
or			
MATH	121	Fundamentals of Mathematics	4
MATH	206	Applied Statistics	4
INFO	105	Personal Computing	3
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4

PHYSICAL THERAPY ASSISTANT

Steven Lee, Timothy Tiffin, Academic Advisers.

These programs are usually a two year total 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 College which meet these prerequisites are:

BIOL	201, 202	Anatomy and Physiology (preferred)	
or			8-12
BIOL	101, 102, 103	General Biology	
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
PHYS	201	Invitation to Physics	3
PHYS	204	Invitation to 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 als 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 shoul request information about **current** admission requirements from the professiona school they plan to attend.

BIOL	101, 102, 103	General Biology	12
BIOL	201, 202	Anatomy & Physiology	8
BIOL	222	Microbiology	5
CHEM	141,142,143	General Chemistry	9
CHEM	144,145,146	General Chemistry Laboratory	3
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
HLTH	217	First Aid	2
HLTH	220	Human Nutrition	4
INFO	105	Personal Computing	3
MATH	121, 122	Fundamentals of Mathematics	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 Wilson-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 strikin array of distinctly different program tracks.

Students preparing to enter graduate professional programs in public health shoul realize that the various career options require different types of preparation, an that they have a significant advantage if they anticipate prerequisite difference early. While no particular group of prerequisites can be considered constant fo all program tracks, students will find that certain basic public health element are fundamental to all. Therefore, the applicant who has included in his under graduate preparation courses in general statistics, epidemiology, public healt administration, environmental health, and behavioral science may benefit fron advanced standing and/or course waivers for these requirements once accepte into the graduate program.

RADIOLOGICAL TECHNOLOGY

Curtis Kuhlman, Academic Adviser.

The minimum requirement for admission to the study of radiological technol ogy is 42 quarter hours. The following courses are to be included for the Associ ate of Science degree from Loma Linda University:

BIOL	201, 202	Anatomy and Physiology	8
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3

INFO	105	Personal Computing	3
NRSG	234	Medical Terminology	2
PHYS	201, 202	Invitation to Physics	6
PHYS	204, 205	Invitation to 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	4
or			
SOCI	236	Racial and Ethnic Relations	3
BIOL	101, 102, 103	General Biology	
or			8-12
BIOL	201, 202	Anatomy and Physiology	
BIOL	222	Microbiology	5
CHEM	101, 102, 103	Introductory Chemistry	11
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
High School Physics			
or			
PHYS	201, 202	Invitation to Physics	8
and			
PHYS	204, 205	Invitation to Physics Laboratory	
PSYC	130	General Psychology	4
SOCI	204	General Sociology	

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 ed + 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	
	or		3
HLTH	220	Human Nutrition	4
SPCH	101	Fundamentals of Speech	4
BIOL	201, 202	Anatomy and Physiology (recommended)	4, 4
PHYS	201+204	Invitation to 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, 003 (required/no credit)	
PSYC	130	General Psychology	4
PSYC	215	Child and Adolescent Development	4
ANTH	225	Cultural Anthropology	4
	or (one of these is required, ANTH 225 or SOCI 236)		
SOCI	236	Race and Ethnic Relations	3
PEAC		Two activity courses	1,1
Humanities		Choose from two areas:	4, 4, 4
		ART 251, MUHL 124, 134 (Applied Art/Mus 2 hr max), any ENGL Lit, PHIL, HIST, Foreign Language courses	
Religion		Any religions course 4 credit 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	3

*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	101, 102, 103	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	Biochemistry of Proteins	4
CHEM	432	Biochemistry of Metabolism	3
CHEM	435	Biochemistry of Proteins Laboratory	1
ENGL	121, 122	College Writing I, II	6
ENGL	223	Research Writing	3
MATH	121, 122	Fundamentals of 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	394	Developmental Biology	4
BIOL	464	Animal Physiology	4
INFO	105	Personal Computing	3
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

Wilma Hepker, Dean; Bobbie Sue Arias, Cindee Bailey, Darold Bigger, Pam Cress, Cindy Fleischer, Doug Fleischer, Kevin Grussling, Mary Laabs, Lana Martin, Marja McChesney, Janet Ockerman, Susan Smith, Heather Vonderfecht.

The School of Social Work and Sociology offers a Bachelor of Social Work degree and a Bachelor of Arts degree with a major in sociology. Minors are available in both social work and sociology.

The degree in social work is designed to prepare the student for beginning professional social work practice; to prepare students for other professions and services, particularly within the Seventh-day Adventist Church; and to prepare students for graduate professional social work education. Supervised field experience in selected social work agencies or related services is an integral part of the program and also meets the criteria of the college's Cooperative Education program. The Bachelor of Social Work program is accredited by the Council on Social Work Education.

Candidates for social work are selected on the basis of scholarship, evidence of a personal commitment to human betterment, and awareness of diversity in terms of race, age, gender, creed, and ethnic origin. Social work students must demonstrate personal and professional behavior which reflects a commitment to the ethics of the social work profession. In addition to completing the requirements of the Bachelor of Social Work, students must be accepted in their Junior year by the Social Work Admissions Committee to continue 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 social work classes.

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 preprofessional 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 (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 in the areas of social work, sociology, and psychology, and cognates in human biology, economics, and political science. These include 14 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.

Major Requirements:

Social Work

SOWK 234	Current Social Problems	3
SOWK 264	Introduction to Social Work	3
SOWK 266	Social Welfare as a Social Institution	3
SOWK 350	Field Practicum Orientation	1

SOWK 361	Human Behavior and the Social Environment	2
SOWK 371	Social Work Practice with Individuals	4
SOWK 372	Social Work Practice with Small Groups	4
SOWK 373	Social Work Practice with Marriage and Family	3
SOWK 375	Social Welfare Policy and Services	3
SOWK 465	Social Work Practice with Organizations and Communities	3
SOWK 466	Comparative Theories of Social Work Practice	3
SOWK 490	Field Practicum	14
SOWK 495	Colloquium (required of all Social Work juniors and seniors while in residence)	0

Sociology

SOCI 204	General Sociology	4
SOCI 236	Racial and Ethnic Relations	3
SOCI 324	Human Development and the Family	4
SOCI 451	Research Methods	4
SOCI 452, 453	Research Practicum I, II	2

Psychology

PSYC 130	General Psychology	4

Electives (18 Total)

Psychology	3-7
Social Work	6-15
Anthropology, Corrections, Sociology	0-8
	85

Electives must be chosen in consultation with and approved by the social work adviser.

Cognates:

ECON 204	Fundamentals of Economics	4

Choose one (1) from each of the following:

BIOL 101 or BIOL 105 or BIOL 201	General Biology / Biology for General Studies / Anatomy and Physiology	4
PLSC 224 or SOCI 455	American Government / Western Political and Social Theory	4

MAJOR IN SOCIOLOGY (Bachelor of Arts)

A student majoring in sociology must complete 45 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	451	Research Methods	4
SOCI	452, 453	Research Practicum I, II	2
SOCI	455	Western Political and Social Theory	4
SOCI	494	Cooperative Education	2
		Electives (14 must be upper division)	29
			45

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.

Cognate:

HIST	454	Classical Political Thought	4
MATH	206	Applied Statistics	4

MINOR IN SOCIAL WORK

A student minoring in social work must complete 30 quarter hours:

SOCI	204	General Sociology	4
SOCI	324	Human Development and the Family	4
SOWK	264	Introduction to Social Work	3
SOWK	266	Social Welfare as a Social Institution	3
		Electives	16
			30

Approval of social work adviser required.

MINOR IN SOCIOLOGY

A student minoring in sociology must complete 30 quarter hours:

SOCI	204	General Sociology	4
		Electives (3 must be upper division)	26
			30

Approval of sociology adviser required.

ANTHROPOLOGY (ANTH)

ANTH 225 CULTURAL ANTHROPOLOGY 4

Study of the origin and nature of culture, the uniformities and variations in man's cultural development as seen in preliterate societies, with special emphasis upon the value of the cultural concept.

CORRECTIONS, LAW ENFORCEMENT AND CRIMINAL JUSTICE (CORR)

CORR 285 INTRODUCTION TO CRIMINAL JUSTICE 3

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.

CORR 385 CRIMINOLOGY 3

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. Offered odd years.

CORR 387 JUVENILE DELINQUENCY 3
Study of delinquency, juvenile courts, detention, and probation; investigation and comparison of programs of treatment and prevention. Field trips arranged.

SOCIAL WORK (SOWK)

SOWK 234 CURRENT SOCIAL PROBLEMS (OR SOCI 234) 3
Study of theoretical perspectives of social problems of particular concern in contemporary society. This course allows an understanding of social problems within the context of social groups and offers solutions rather than personal blame. The course shall address such issues as violence, crime, drugs, alcohol, poverty, race, gender, sexuality, mental health, age, families, and terrorism. The impact of social problems will be viewed in terms of individuals, groups, institutions, organizations, and society.

SOWK 264 INTRODUCTION TO SOCIAL WORK 3
Introduction to the profession of social work in the United States; considers history, principles, methods, and values of the social worker and settings for social work practice. Community service and field trips arranged.

SOWK 266 SOCIAL WELFARE AS A SOCIAL INSTITUTION 3
Study of the historical development of U.S. social welfare system; examination of current social welfare institutions in terms of political, social, and value systems and in terms of needs they attempt to fulfill. Recommended prerequisite: SOWK 264.

SOWK 271 ASSERTIVENESS THEORY AND PRACTICE 2
Study of the concepts of rational and behavior techniques with emphasis on self-awareness, intervention, and assertiveness through cognitive and experiential learning.

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 361 HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT 2
Community and organization theory viewed from the perspective of processes that provide a social context for understanding human growth and development, human culture and human ecology. A social systems model provides a framework for analyzing the various social processes.

SOWK 371 SOCIAL WORK PRACTICE WITH INDIVIDUALS 4
Introduction to social work methods provided through a survey of basic intervention skills and basic interviewing techniques; explores the Christian value system as it relates to social work practice. Students participate in field experiences and video-taped interviews. Prerequisites: PSYC 130, SOCI 204, SOWK 264 or permission of instructor.

SOWK 372 SOCIAL WORK PRACTICE WITH SMALL GROUPS 4
Introduction to the group process skills to build a basic foundation for group intervention methods. Students will participate in and observe small groups. Prerequisite: SOWK 371.

SOWK 373 SOCIAL WORK PRACTICE WITH MARRIAGE AND FAMILY 3
Study of basic intervention skills expanded by experiencing family and marriage dynamics through role playing. Students will be exposed to various types of family practice intervention methods by audiovisual aids. Prerequisites: SOWK 371, 372.

SOWK 375 SOCIAL WELFARE POLICY AND SERVICES 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 policy change to enhance client and social service functioning. Prerequisite: SOWK 266 or permission of instructor.

SOWK 435 SOCIAL GERONTOLOGY (OR SOCI 435) 3
Study of the social issues of aging and the social work practice response to these issues, with particular reference to community and family resource obligation.

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 464 CHILDREN AT RISK 3
Study of intervention strategies when working with children at risk, in social services, school, medical or community settings. Specific issues discussed include: child abuse and neglect, behavior management, family and child assessment, teen pregnancy and suicide, adoption and out-of-home placement, legal implications of working with children, and counseling techniques. Prerequisite: PSYC 130 or SOCI 204.

SOWK 465 SOCIAL WORK PRACTICE WITH ORGANIZATIONS AND COMMUNITIES 3
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. Prerequisites: SOWK 371, 372. Corequisites: SOWK 373, 375.

SOWK 466 COMPARATIVE THEORIES OF SOCIAL WORK PRACTICE 3
Study of intervention strategies, change theories, and therapeutic techniques employed at individual, family, and group levels. Emphasizes criteria for selecting alternative approaches and appropriate intervention activities. Prerequisites: SOWK 264, 266, 371, 372; SOWK 373 or permission of instructor.

SOWK 471 HUMAN SEXUALITY (OR HLTH 471) 3
Study of the Christian perspective of human sexuality which forms a basis for appropriate intervention with sexual problems.

SOWK 472 STRESS MANAGEMENT (OR HLTH 472) 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. Prerequisites: PSYC 130 or SOCI 204.

SOWK 475 CRISIS INTERVENTION 3
Study of human mental functions in crisis or high stress situations. Develops specific assessment, classification, and intervention skills for use in actual crisis situations. Prerequisite: one counseling class or permission of instructor. Offered on demand.

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 of particular interest to the student. A single project will be chosen in consultation with the instructor. A written report is required describing the project, the theoretical base, the learning experience, and the conclusions. Prerequisites: SOWK 264, 371.

SOWK 490 FIELD PRACTICUM 2-14; 14
Training under a professional social worker in a Social Service correction agency. Written reports and evaluations are included. Placement may be taken in one quarter (block placement) or concurrently with course work over two or more consecutive quarters. Applications for placement must be submitted to the Field Practicum Coordinator at least one quarter prior to beginning the placement. Field instruction is offered in various settings in such fields as medical, social work, school social work, mental health, criminal justice, child welfare, and community organization. Includes integrative seminar. Prerequisites: SOWK 264, 266, 350, 371, 372, acceptance to B.S.W. program, and permission of instructor. Prerequisite or Corequisite: SOWK 373. Fourteen quarter credits (420 clock hours) are required for a social work major; one credit is equal to 30 clock hours.

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.

Please see the *Graduate Bulletin* for a listing of Social Work graduate courses.

SOCIOLOGY (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) 3
Study of theoretical perspectives of social problems of particular concern in contemporary society. This course allows an understanding of social problems within the context of social groups and offers solutions rather than personal blame. The course shall address such issues as violence, crime, drugs, alcohol, poverty, race, gender, sexuality, mental health, age, families, and terrorism. The impact of social problems will be viewed in terms of individuals, groups, institutions, organizations, and society.

SOCI 236 RACIAL AND ETHNIC RELATIONS 3
Study of the history, present status and problems of racial, religious and ethnic minorities in the United States and other countries.

SOCI 324 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 family life cycle as it applies to the modern American family as well as families of other cultures. Prerequisites: SOCI 204; PSYC 130.

SOCI 325 THE SOCIAL PSYCHOLOGY OF FAMILY LIFE 3
Study of the social-psychological aspects of family life, emphasizing the role of family interaction in developing and maintaining personal relationships. Offered on demand.

SOCI 327 SOCIOLOGY OF SEX ROLES 3
Analysis of the psychological, cultural, and economic influences on men and women in today's society. Includes such topics as sex role stereotyping, sex bias, men and masculinity, current dilemmas faced by men, a history of women's issues, the battered woman. Special emphasis on the relationship of the Christian woman to women's liberation, the Christian woman's role in the church, and sex roles and the Christian family.

SOCI 345 SOCIOLOGY OF COMMUNITIES 3
Study of the social structure and interaction patterns of communities; emphasizes the history of community development, urbanization, and its effects on society. Offered on demand.

SOCI 435 SOCIAL GERONTOLOGY (OR SOWK 435) 3
Study of the social issues of aging and the social work practice response to these issues, with particular reference to community and family resource obligation.

SOCI 437 DEATH AND DYING (OR SOWK 437) 3
Study of the process of death and dying from four distinct perspectives: cultural, social, personal, and professional.

SOCI 449 SOCIOLOGY OF RELIGION 2
Sociological study of organized religion, emphasizing the interaction between the church and its social setting; includes varieties and sources of collective religious behavior with examination and classification of religious movements and reforms. Offered on demand.

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.

SOCI 455 WESTERN POLITICAL AND SOCIAL THEORY 4
Survey of modern social, political, and economic thought. Emphasizes 19th and 20th century theories and models which have directed contemporary research in the social sciences and have influenced public policy.

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, SOCI 234, SOCI 236; Pre or corequisite: SOCI 324. Two quarter hours are required during senior year (30 clock hours per quarter hour = 60 hours).

TECHNOLOGY

Linda Nelson, Chair; Lance Bergherm, Shane Hinshaw, Marshall Rub.

The Department of Technology provides quality technological instruction in a Christian environment, preparing students to work in a variety of service industries. Each program is designed to combine a balance between technical theory and experiential laboratory experiences. Students may choose from a variety 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 Technology, Aviation Technology, and Graphic Design.** Each of these majors include a number of core courses specifically designed to provide a broad technical experience. Along with the technical expertise these majors provide communication, writing and people skills through the general studies program of the college. The combining of the specific major requirements, the technical core courses and the general studies program provides the student with exemplary skills for today's workplace.

The Associate of Science majors offered in the Department of Technology include **Automotive Technology, Aviation Technology, Graphic Communication, and Web Design and Development.** Each major is designed to prepare graduates for employment in that particular field. In each case, a broad technical background is offered balancing theory with laboratory experience. These programs are especially designed to serve students who wish to complete their technical training in a Christian environment with minimal general studies and time requirements. The programs are planned so that continuance in the baccalaureate programs may occur 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.

MAJOR IN AUTOMOTIVE TECHNOLOGY (Bachelor of Science)

A student majoring in Automotive Technology must complete a minimum of 76 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.

Core Requirements:

AUTO 134	Internal Combustion Engine Theory	2
AUTO 135	Internal Combustion Engine Laboratory	2
AUTO 145	Power Train Theory	2
AUTO 146	Power Train Laboratory	2
AUTO 156	Fuel and Electrical Systems Theory	2
AUTO 157	Fuel and Electrical Systems Laboratory	2
AUTO 280	Practicum (automotive)	2
AUTO 314	Engine Diagnosis and Tune-up	2
AUTO 315	Engine Diagnosis and Tune-up Laboratory	2
AUTO 345, 346	Automotive Service	4

AUTO 347, 348	Automotive Service Laboratory	4
AUTO 365	Diesel Engines	3
AUTO 366	Computerized Engine Controls	3
AUTO 480	Advanced Practicum (automotive)	3
DRFT 120	Fundamentals of CAD	2
DRFT 121, 122	Technical Drafting and Design	4
ELCT 241	Fundamentals of Electronics	4
ELCT 252	Solid State Devices	4
TECH 235, 236, 237	Materials and Processes	6
TECH 326	Hydraulics and Pneumatics	3
TECH 335	Computer Applications in Technology	3
TECH 364	Occupational Health and Safety	2
TECH 380	Technical Space Utilization	3
TECH 499	Senior Project	1
	Electives	9
		76

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
INFO 105	Personal Computing	3
MGMT 275	Management of Small Business	
or		4
MGMT 371	Principles of Management	
	Business Electives	4

Business electives must be chosen from the following prefixes in consultation with and approved by the academic adviser assigned by the department chair: ACCT, GBUS, MGMT, MKTG.

MAJOR IN AVIATION TECHNOLOGY (Bachelor of Science)

A student majoring in Aviation Technology must complete a minimum of 87 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.

Core Requirements:

AVIA 124	Introduction to 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	3
AVIA 335	Commercial Flight Training	3

AVIA	336	Advanced Commercial Flight Training	3
AVIA	340	Multi-Engine Flight Training	3
AVIA	356	Principles of Flight Instruction	3
AVIA	358	Instructor Flight Training	3
AVIA	455	Crew Resource Management	2
AVIA	458	Instrument Instructor Flight Training	3
DRFT	120	Fundamentals of CAD	2
DRFT	121, 122	Technical Drafting and Design	4
ELCT	241	Fundamentals of Electronics	4
TECH	235, 236, 237	Materials and Processes	6
TECH	326	Hydraulics and Pneumatics	3
TECH	335	Computer Applications in Technology	3
TECH	364	Occupational Health and Safety	2
TECH	380	Technical Space Utilization	3
TECH	499	Senior Project	1
		Electives	4
			87

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
GBUS	361	Business Law I	4
GBUS	362	Business Law II	4
INFO	105	Personal Computing	3
MATH	123	Survey of Calculus	4
MGMT	275	Management of Small Business	4
or			
MGMT	371	Principles of Management	
PHYS	201, 202	Invitation to Physics	6
PHYS	204, 205	Invitation to Physics Laboratory	2

MAJOR IN GRAPHIC DESIGN (Bachelor of Science)

A student majoring in Graphic Design must complete a minimum of 76 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.

Core Requirements:

COMM	357	Communication Law and Ethics	4
DRFT	120	Fundamentals of CAD	2
DRFT	121	Technical Drafting and Design	2
GRPH	124	Introduction to Graphic Communication	3
GRPH	125	Introduction to Typography	2
GRPH	135	Introduction to Digital Technology	1
GRPH	255	Desktop Publishing	4
GRPH	263	Website Design and Construction I	3
GRPH	268	Computer Layout and Design	3
GRPH	270	Computer Composition	4
GRPH	274	Computer Illustration	2
GRPH	320	Principles of Printing	3

GRPH	335	Digital Imaging I	4
GRPH	423	3-D Design I	3
GRPH	445	Graphic Services	3
GRPH	480	Advanced Practicum	2
GRPH	492	Portfolio Design	1
INFO	150	Software Application: Intro MS Word	1
INFO	150	Software Application: Intro MS Excel	1
INFO	150	Software Application: Intro MS Access	1
JOUR	245	Newswriting	4
JOUR	247	Copy Editing	3
PHTO	156	Principles of Photography	3
TECH	251	Introduction to Computer Hardware	2
TECH	364	Occupational Health and Safety	2
TECH	499	Senior Project	1
		Electives (Chosen from ART, COMM, GRPH, or PHTO prefix)	12
			76

Cognates:

ART	161, 162, 163	Design	9
ART	184	Introduction to Drawing I	2
ART	194	Introduction to Painting I	2
ART	244, 245, 246	Commercial Art	6
ART	294	Introduction to Printmaking I	2
COMM	235	Introduction to Video	4
MKTG	383	Principles of Advertising	4
SPCH	101	Fundamentals of Speech Communication	4

AUTOMOTIVE TECHNOLOGY (Associate of Science)

A student majoring in Automotive Technology must complete a minimum of 55 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 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	Power Train Theory	2
AUTO	146	Power Train Laboratory	2
AUTO	156	Fuel and Electrical Systems Theory	2
AUTO	157	Fuel and Electrical Systems Laboratory	2
AUTO	280	Practicum (automotive)	2
AUTO	286	Engine Rebuilding Laboratory	2
AUTO	314	Engine Diagnosis and Tune-up	2
AUTO	315	Engine Diagnosis and Tune-up Laboratory	2
AUTO	345, 346	Automotive Service	4
AUTO	347, 348	Automotive Service Laboratory	4
AUTO	366	Computerized Engine Controls	3
DRFT	120	Fundamentals of CAD	2
DRFT	121, 122	Technical Drafting and Design	4
ELCT	241	Fundamentals of Electronics	4
ELCT	252	Solid State Devices	4

TECH	326	Hydraulics and Pneumatics	3
or			
TECH	335	Computer Applications in Technology	
TECH	364	Occupational Health and Safety	2
		Electives	5
			55

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

Cognates:

INFO	105	Personal Computing	3

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 the technical requirements. In addition, the student must complete the required cognates, the general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

Core Requirements:

AVIA	124	Introduction to 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	3
AVIA	335	Commercial Flight Training	3
AVIA	336	Advanced Commercial Flight Training	3
DRFT	120	Fundamentals of CAD	2
DRFT	121, 122	Technical Drafting and Design	4
TECH	326	Hydraulics and Pneumatics	3
or			
TECH	335	Computer Applications in Technology	
TECH	364	Occupational Health and Safety	2
		Electives	6
			58

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

Cognates:

ELCT	241	Fundamentals of Electronics	4
INFO	105	Personal Computing	3

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 the technical requirements. In addition, the student must complete the required cognates,

the general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

Core Requirements:

COMM	357	Communication Law and Ethics	4
or			
JOUR	245	Newswriting	
DRFT	120	Fundamentals of CAD	2
DRFT	121, 122	Technical Drafting and Design	4
GRPH	124	Introduction to Graphic Communication	3
GRPH	135	Introduction to Digital Technology	1
GRPH	255	Desktop Publishing	4
GRPH	263	Website Design and Construction I	3
GRPH	268	Computer Layout and Design	3
GRPH	270	Computer Composition	4
GRPH	274	Computer Illustration	4
GRPH	280	Practicum	3
GRPH	320	Principles of Printing	3
GRPH	335	Digital Imaging I	4
PHTO	156	Principles of Photography	3
TECH	364	Occupational Health and Safety	2
		Electives (Chosen from ART, COMM, GRPH, or PHTO prefix)	9
			56

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

Cognates:

ART	161	Design	3
INFO	105	Personal Computing	3

WEB DESIGN AND DEVELOPMENT (Associate of Science)

A student majoring in Web Design and Development must complete a minimum of 49 quarter hours in the major. In addition, the student must complete the required cognates, the general studies requirements, and all Associate of Science degree requirements as outlined in this bulletin.

Core Requirements:

COMM	357	Communication Law and Ethics	4
or			
JOUR	245	Newswriting	
DRFT	120	Fundamentals of CAD	2
GRPH	263	Website Design and Construction I	3
GRPH	268	Computer Layout and Design	3
GRPH	273	Website Design and Construction II	3
GRPH	274	Computer Illustration	4
GRPH	280	Practicum	2
GRPH	335	Digital Imaging I	4
GRPH	336	Digital Imaging II	4
GRPH	337	Digital Imaging III	4
GRPH	365	Web Design: Animation	2
GRPH	366	Web Design: Multimedia and Special Effects	2
GRPH	423	3-D Design I	3
GRPH	463	Advanced Webpage Design	3

GRPH 488	Seminar: Web Design and Development	1
TECH 364	Occupational Health and Safety	2
	Electives	3
		49

Cognates:

ART 161	Design	3
COMM 235	Introduction to Video	4
CPTR 141	Introduction to Programming	4
INFO 240	Web Technology	1
INFO 250	System Software	1

MINOR IN AVIATION

A student minoring in aviation must complete 30 quarter hours:

AVIA 124	Introduction to Aviation	2
AVIA 141	Private Pilot Lectures	4
AVIA 142	Private Pilot Flight Training	3
AVIA 143	Advanced Private Flight Training	3
	Electives (3 must be upper division)	18
		30

Approval of aviation adviser required. Electives must be chosen in consultation with and approved by the academic adviser assigned by the department chair.

MINOR IN GRAPHIC ARTS

A student minoring in graphic arts must complete 30 quarter hours:

GRPH 135	Introduction to Digital Technology	1
GRPH 255	Desktop Publishing	4
GRPH 268	Computer Layout and Design	3
GRPH 270	Computer Composition	4
GRPH 274	Computer Illustration	4
GRPH 320	Principles of Printing	3
GRPH 335	Digital Imaging I	4
PHTO 156	Principles of Photography	3
	Electives (Must have GRPH or PHTO prefix)	4
		30

Approval of graphics technology adviser required.

MINOR IN PHOTOGRAPHY

A student minoring in photography must complete 31 quarter hours:

ART 161 or 162 or 163	Design	3
ART 184	Introduction to Drawing I	2
COMM 235	Introduction to Video	
or		4
GRPH 255	Desktop Publishing	
JOUR 257	Photojournalism	2
GRPH 335	Digital Imaging I	4
GRPH 336	Digital Imaging II	4
PHTO 156	Principles of Photography	3
PHTO 255	Intermediate Photography	3
PHTO 355	Advanced Photography	3
	*Electives	3
		31

*Electives must be chosen from the following prefixes in consultation with and approved by the academic adviser assigned by the department chair: COMM, GRPH, or PHTO

MINOR IN TECHNOLOGY

A student minoring in technology must complete 30 quarter hours:

DRFT	120	Fundamentals of CAD	2
DRFT	121, 122	Technical Drafting and Design	4
TECH	235, 236, 237	Materials and Processes	6
		Electives (3 must be upper division)	18
			30

Approval of technology adviser required.

MINOR IN WEB DESIGN AND DEVELOPMENT

A student minoring in Web Design and Development must complete 30 quarter hours:

GRPH 263	Website Design and Construction I	3
GRPH 268	Computer Layout and Design	3
GRPH 273	Website Design and Construction II	3
GRPH 274	Computer Illustration	4
GRPH 335	Digital Imaging I	4
GRPH 463	Advanced Webpage Design	3
	Electives	10
		30

(Electives must be chosen from GRPH, PHTO, CPTR, COMM, and INFO prefixes and approved by the graphics adviser.)

ASE VALIDATION

AUTO 291 ASE VALIDATION—PART I 12

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification. Based on successful completion of the four-part standardized examination, students with current National ASE certification are granted 12 lower-division automotive credits and are exempt from AUTO 134, 135, 145, 146, 156, and 157.

AUTO 391 ASE VALIDATION—PART II 12

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification. Based on successful completion of the four-part standardized examination, students with current National ASE certification are granted 12 upper-division automotive credits and are exempt from AUTO 314, 315, 345, 346, 347, and 348.

AUTO 392 ASE L1 VALIDATION—PART I 3

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the L1 Automobile Advanced Engine Performance Specialist Test. Based on successful completion of a standardized examination, students with current National ASE certification L1 are granted 3 upper-division automotive credits and are exempt from AUTO 336.

AUTO 393 ASE T2 VALIDATION—PART II 3

Validation of prior automotive education for National Institute of Automotive Service Excellence (ASE) certification with successful completion of the T2 Diesel Engines Test. Based on successful completion of a standardized examination, students with current National ASE certification T2 are granted 3 upper-division automotive credits and are exempt from AUTO 365.

AUTOMOTIVE (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.

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.

AUTO 145 POWER TRAIN THEORY 2
Study of the automotive power train system with emphasis on proper procedures in diagnosis, servicing, and repair. Two lectures per week.

AUTO 146 POWER TRAIN LABORATORY 1-2; 2
Laboratory study and application of technical information and skills required to diagnose, service, adjust, and perform test procedures on hydraulic brakes, air brakes, clutch assemblies, bearings, transmissions, auxiliary units, transfer cases, drive lines, universal joints, and final drive assemblies. Corequisite: AUTO 145.

AUTO 156 FUEL AND ELECTRICAL SYSTEMS THEORY 2
Study of principles of fuel metering and induction/injection for spark-ignited and compression-ignited engines; electrical systems topics include the study of the operating principles, diagnosis, service, adjustment, and test procedures for automotive charging, cranking, and ignition systems. Two lectures per week.

AUTO 157 FUEL AND ELECTRICAL SYSTEMS LABORATORY 1-2; 2
Laboratory study and application of technical information and skills required to diagnose, service, and adjust carburetion and injection fuel systems, automotive charging, cranking, and ignition systems. Corequisite: AUTO 156.

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 DIAGNOSIS AND TUNE-UP 2
Study of logical diagnosis and troubleshooting techniques as applied to engine repair and tune-up. Theory and operation of emission control systems. Emphasizes use of electronic instrumentation as a diagnostic tool. Two lectures per week. Prerequisites: AUTO 134, 135, 156, 157. Corequisite: AUTO 315.

AUTO 315 ENGINE DIAGNOSIS AND TUNE-UP LABORATORY 1-2; 2
Laboratory study and application of diagnostic principles in trouble shooting repairs and tune-up automotive engines; includes experience with the Sun Road-A-Matic (a computerized dynamometer) and the Sun Model 1115 Performance Analyzer. Corequisite: AUTO 314.

AUTO 345, 346 AUTOMOTIVE SERVICE 2, 2
Study of automotive service operation as related to auto air conditioning, the power train, brake systems, suspension and wheel alignment, and general services. Two lectures per week. Prerequisites: AUTO 145; AUTO 146 or equivalent. Corequisites: AUTO 347, 348.

AUTO 347, 348 AUTOMOTIVE SERVICE LABORATORY 1-2; 2, 1-2; 2
Laboratory study and application of automotive service techniques; includes a broad range of live service experiences. Corequisites: AUTO 345, 346.

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 odd years only.

AUTO 366 COMPUTERIZED ENGINE CONTROLS 3
Study of microprocessor engine control systems used on late model GM, Ford, Chrysler, and American Motors gasoline engines. Prerequisite: AUTO 315 or permission of instructor. Offered odd years only.

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, and cooperating business to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

AVIATION (AVIA)

LECTURE COURSES

AVIA 124 INTRODUCTION TO AVIATION 2
Study of aviation history and the development of the National Air Transportation System. Seventh-day Adventist uses and needs with an introduction to the mission flying program of the church.

AVIA 140 INTRODUCTION TO FLIGHT 1
An economical introduction to the principles and experience of flight. The student will learn to maneuver an airplane safely in coordinated flight. Does not apply toward a major or minor in Technology. Cannot be taken simultaneously with or after AVIA 142.

AVIA 141 PRIVATE PILOT LECTURES 4
Study of basic concepts of aircraft performance, navigation, principles of flight, and meteorology; includes interpretation and application of Federal Aviation Regulations, uses of airman's publications and services.

AVIA 234 METEOROLOGY 2
Study of the atmosphere, winds, moisture, temperature, air masses and fronts, and weather forecasting with emphasis on aviation weather.

AVIA 256 PRINCIPLES OF AIRCRAFT MAINTENANCE 4
A study of aircraft systems and routine maintenance and inspection techniques performed by the pilot. Prerequisite: ELCT 241.

AVIA 261 INSTRUMENT PILOT LECTURES 4
Study of aerodynamics, performance, weight and balance navigational instrumentation, IFR charts, regulation and procedures. Prepares student to pass FAA Instrument written examination.

AVIA 334 COMMERCIAL PILOT LECTURES 3
Advanced navigation commercial pilot maneuvers, airport and charts and advanced aircraft systems; prepares the student to take the FAA Commercial Airplane written examination. Prerequisite: AVIA 256.

AVIA 356 PRINCIPLES OF FLIGHT INSTRUCTION 3
Study of the methods of flight instruction, course organization, lesson planning, student progress records, and micro teaching experiences. Prepares the student for FAA instructor written examinations.

FLIGHT COURSES

Prior to registering for a flight course the student must be included on the aviation flight schedule and receive a signed clearance form from the department.

AVIA 142 PRIVATE PILOT FLIGHT TRAINING 3
Instruction in the flying skills and practical knowledge necessary for solo flight. Corequisite: AVIA 141 or permission of instructor.

AVIA 143 ADVANCED PRIVATE FLIGHT TRAINING 3
Flight instruction in specialty landings, night flight, and cross country flight. Includes supervised solo practice of flight maneuvers and a review of the flying skills necessary to pass the federal oral and practical exams. Prerequisite: AVIA 142.

AVIA 152 CROSS-COUNTRY FLIGHT 2
Directed cross-country flight experiences to meet FAA requirements. Prerequisite: AVIA 143.

AVIA 262 INSTRUMENT FLIGHT TRAINING 3
Flight instruction in basic attitude flying, instrument navigation, and cross country flying skills.

AVIA 263 ADVANCED INSTRUMENT FLIGHT TRAINING 3
Instruction in instrument departure and approach procedures. Includes PIC cross country flying 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 performance experiences to gain proficiency and meet FAA time requirements, includes upset training when appropriately equipped aircraft is available.

AVIA 335 COMMERCIAL FLIGHT TRAINING 3
Advanced aircraft flight training, including systems training, take offs and landing, complex aircraft emergency procedures, and IFR and night checkouts.

AVIA 336 ADVANCED COMMERCIAL FLIGHT TRAINING 3
Advanced aircraft maneuvers and skills in preparation for the commercial checkride. Includes cross-country flying to busy airports, mountain flying, bush flying techniques, short field landings and additional complex procedures. Prerequisite: AVIA 335.

AVIA 340 MULTI-ENGINE FLIGHT TRAINING 3
Provides the necessary flight and ground instruction leading to the FAA multi-engine rating.

AVIA 358 INSTRUCTOR FLIGHT TRAINING 3
Study of the standards for acceptable performance for the Federal Aviation Administration Flight Instructor.

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 errors as it relates to today's modern aircraft. CRM applies in both single and multi-pilot roles. (flight course)

AVIA 458 INSTRUMENT INSTRUCTORS FLIGHT TRAINING 3
Study of the standards for acceptable performance for the FAA Flight Instructor Certificate (instrument rating).

AVIA 460 MULTI-ENGINE INSTRUCTOR FLIGHT TRAINING 2
Study of the techniques and procedures for multi-engine instruction. Prepares the student for the FAA Multi-Engine Instructor examination.

AVIA 465 TRANSPORT PILOT FLIGHT TRAINING 6
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 on demand.

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, and cooperating business to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

DRAFTING (DRFT)

DRFT 120 FUNDAMENTALS OF CAD 2
Fundamentals of Computer Aided Drafting/Design and its application, with emphasis on the varied features of a CAD system.

DRFT 121, 122 TECHNICAL DRAFTING AND DESIGN 2, 2
Introduction to technical drafting and design: includes board and computer (CADD) drafting with emphasis on drafting fundamentals, visualization, principles and elements of design and analysis. Specific design applications to each technological area. One lecture and 3 laboratory hours per week. Prerequisite DRFT 120.

DRFT 226 ARCHITECTURAL DRAWING 3
Study of the fundamentals of designing and drawing house plans including architectural drafting techniques, area planning, floor plans, elevations, sections, schedules, and specifications.

ELECTRONICS (ELCT)

ELCT 241 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. (Course fee $45)

ELCT 252 SOLID STATE DEVICES 4
Introduction to solid-state devices, analytical and graphical analysis of diode characteristics and diode circuit applications; includes three-terminal solid-state devices, concept of amplification, switching, biasing, and graphical analysis; analysis of AC small and large signal conditions, bias stability, use of load lines in amplifier analysis and design; introduction to integrated circuits. Three lectures and one laboratory per week. Prerequisite: ELCT 241. Offered odd years only.

ELCT 280 PRACTICUM 1-6; 6
Laboratory work in Electronics chosen in counsel with the supervising laboratory instructor. Six credits maximum. One 3-hour laboratory per week per credit

ELCT 361 PC REPAIR 5
A study of how to resolve hardware and software problems in the personal computer, will prepare the student to pass the A+ Certification exam. Four lectures and one laboratory per week. Offered odd years only.

ELCT 480 ADVANCED PRACTICUM 1-6; 6
Advanced laboratory work in Electronics 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.

ELCT 490 DIRECTED HOSPITAL EXPERIENCE 4-16
Full-time work experience with supplementary training in the biomedical electronics department of an approved hospital; taken only after completion of all course work required for the biomedical electronics program. Application must be made during the first two weeks of the quarter prior to the actual field experience.

ELCT 494 COOPERATIVE EDUCATION 0-2
Individual contract arrangement involving students, faculty, and cooperating business to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

GRAPHICS (GRPH)

GRPH 124 INTRODUCTION TO GRAPHIC COMMUNICATION 3
Overview of graphic communication systems including historical perspectives, theory and practice. Examines the wide and varied occupations within graphic arts as they have evolved over time.

GRPH 125 INTRODUCTION TO TYPOGRAPHY 2
The study of type and characters used to communicate visual information. Included will be historical developments, the tradition of creating, setting, and designing with type. These concepts as applied to document and web design and construction.

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.

GRPH 255 DESKTOP PUBLISHING 4
The study and use of microcomputer and peripherals for design of publications. Includes basic design fundamentals, text manipulation, graphics generation, visual layout, and laser printing. Prerequisites: INFO 150 Software Application: Computer Literacy, and GRPH 135, or permission of instructor. (Course fee $30)

GRPH 263 WEBSITE DESIGN AND CONSTRUCTION I 3
An introduction to Web page construction. Includes principles of layout and design such as organization of text and graphics, use of color, links, and navigation; HTML editor and features for images, sound, video and text. Prerequisites: INFO 150 Software Application: Computer Literacy, and GRPH 135, or permission of instructor.

GRPH 268 COMPUTER LAYOUT AND DESIGN 3
Study of the basic principles of design as applied to computer composition, layout, and arrangement. Lectures, demonstrations, and assigned individual and group projects. Prerequisites: GRPH 135, GRPH 255, INFO 150 Software Application: Computer Literacy, or permission of instructor. (Course fee $30)

GRPH 270 COMPUTER COMPOSITION 4
Application of microcomputers and software programs to the design of graphic images for graphic communications. Special attention is given to new software features and effective design practices. Prerequisites: INFO 150 Software Application: Computer Literacy, and GRPH 135, or permission of instructor. (Course fee $30)

GRPH 273 WEBSITE DESIGN AND CONSTRUCTION II 3
Introduction to Javascript for the design of dynamic Web pages with an overview of the language. Event-driven programming and Javascript Objects (both built-in and user-de-

fined). Students will learn to use Javascript to control Web page appearance, visual effects, and user interaction. Tools for development and examples will be demonstrated. Students will complete a project. No programming experience needed. Prerequisite: GRPH 263 or permission of instructor.

GRPH 274 COMPUTER ILLUSTRATION 4
Congruing graphical images and manipulating them into visual media. Prerequisite: GRPH 135. (Course fee $40)

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 PRINTING 3
A variety of contemporary printing methods and processes are examined. Printing terminology and key concepts are explored as they relate to pre-press graphics activities. Binding and finishing are included.

GRPH 335 DIGITAL IMAGING I 4
Study and application of image editing. Students will develop skills in technical manipulation, alternation and enhancement of photographic and graphic images. Image acquisition will be introduced. The creative exploration and use of the tools and techniques will be stressed. Prerequisite: GRPH 135, INFO 150 Software Application: Computer Literacy, or permission of instructor. (Course fee $40)

GRPH 336 DIGITAL IMAGING II 4
Advanced study and application of image editing, including the development of technical expertise in image acquisition, color control and correction, image repair and file management. Interfacing with other appropriate graphics application will be covered. Prerequisites: GRPH 335, plus one of the following: GRPH 255, GRPH 268, GRPH 270, GRPH 274, GRPH 423. (Course fee $30)

GRPH 337 DIGITAL IMAGING III 4
Advanced study and application of image editing, specifically as it applies to web site design and construction. Interfacing with other web design and construction applications will be covered. Prerequisite: GRPH 335.

GRPH 345 PHOTO-LITHOGRAPHIC REPRODUCTION 3
Photographic processes as they relate to lithographic reproduction. Includes traditional and electronic techniques, platemaking, halftones, photomechanical transfers, duotones and posterization. Prerequisites: PHTO 156 and GRPH 335. Offered odd years only.

GRPH 355 COLOR IMAGE ASSEMBLY 3
Electronic and mechanical preparation of color images for output of process color separations. Image assembly, advanced pre-flighting and troubleshooting all explored. Prerequisite: GRPH 255 or GRPH 270. Offered odd years only.

GRPH 365 WEB DESIGN: ANIMATION 2
Introduction to animation, sound and motion in 2-D space for web page design and construction. The study of typography will be expanded and the fundamentals of representing motion while maintaining small file sizes is included. Prerequisite: GRPH 273.

GRPH 366 WEB DESIGN: MULTIMEDIA AND SPECIAL EFFECTS 2
Multimedia authoring tools are explored to create interactive movies and simple scripts for web and multimedia CDRom. The application to original design is an integral component. Prerequisite: GRPH 365.

GRPH 386 GRAPHICS PRODUCTION PLANNING 3
Planning and organizing for production, operation of printing presses, basic press maintenance, folding, and bindery techniques. Prerequisite: GRPH 320. Offered odd years only.

GRPH 423 3-D DESIGN I 3
Introduction to 3-D modeling, materials, lights, cameras and scene creation for animation. Generation, manipulation and editing of 3-D objects to create realistic and abstract effects. Basic 3-D animation techniques and practices are studied.

GRPH 425 MATERIALS IN GRAPHIC TECHNOLOGY 3
A study of inks, paper, film, and chemistry used in the printing industry. Prerequisite: GRPH 386. Offered odd years only.

GRPH 433 3-D DESIGN II 3
Continuation of 3-D modeling with an emphasis on animation, advanced materials application and advanced modeling. Prerequisite: GRPH 423.

GRPH 443 3-D DESIGN III 3
Advanced application of modeling, materials, lights, cameras and scene animation, including sound track implementation and video post work. Inverse kinematics will be introduced. Prerequisites: GRPH 423 and GRPH 433.

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 270, and GRPH 274.

GRPH 463 ADVANCED WEB PAGE DESIGN 3
Analysis and critique of existing web design, including user/reader interaction. Creation and use of advanced design techniques specifically for web page application. Combined skill development and incorporation of image editing, animation and creativity will be stressed. Prerequisites: GRPH 263, GRPH 335, and GRPH 423.

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 488 SEMINAR: WEB DESIGN AND DEVELOPMENT 1
Special topics, current trends and issues in web page design and construction are covered. The utilization of community resources may be included. Prerequisite: GRPH 366.

GRPH 492 PORTFOLIO DESIGN 1
The design and development of a professional portfolio of visual materials. The preparation, collection and presentation of these pieces for the express purpose of interview. Consideration will be given to the total package, which may include résumé, invoice, business card, and letterhead design. The collection itself may be board and paper and/or digital media. Prerequisite: Senior standing in Graphic Design or approval of instructor.

GRPH 494 COOPERATIVE EDUCATION 0-4
Individual contract arrangement involving students, faculty, and cooperating business to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

PHOTOGRAPHY (PHTO)

PHTO 156 PRINCIPLES OF PHOTOGRAPHY 3
Study of the basic principles of color and black-and-white photography; includes practice of exposure, development, contact printing and enlarging, and study of various types of equipment. 35 mm camera required. Automatic cameras must have an override to manual operation. Two lectures and one laboratory per week. (Course fee $95)

PHTO 255 INTERMEDIATE PHOTOGRAPHY 3
Exploration of the technical and aesthetic aspects of photography. Includes tinting and toning black-and-white prints, adding color selectively to black-and-white prints, print retouching, storing, mounting, and framing prints. Two lectures and one lab per week. Prerequisite: PHTO 156. (Course fee $130)

PHTO 355 ADVANCED PHOTOGRAPHY 3
Study of advanced techniques in photography; includes lighting, photo-chemistry, optics, photo accessories, printing, enlarging, and processing of chromatic and monochromatic mediums, in-camera manipulations, darkroom manipulation, finishing presentation techniques. Two lectures and one laboratory per week. Prerequisites: PHTO 255. (Course fee $130)

PHTO 358 PHOTO ASSIGNMENTS 1
Individualized assignments to provide a variety of experience in commercial and publication photography, embodying shooting, processing, and finishing black and white prints. One laboratory per week. Prerequisite: PHTO 355 or equivalent. Offered odd years only.

TECHNOLOGY (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 fee $45)

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 fee $45)

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, 138, or permission of instructor. (Course fee $45)

TECH 221, 222, 223 WOOD PRODUCTS AND PROCESSES 2, 2, 2
Introduction to wood products and processes incorporating use of basic tools and machines as found in the wood industries. Includes planning and construction of simple furniture. One lecture and one laboratory per week.

TECH 235, 236, 237 MATERIALS AND PROCESSES 2, 2, 2
Study of various methods for processing metallic, polymeric and ceramic materials. Major families of processes and materials are explored as they relate to a broad understanding of modern technology. These may be taken in any sequence. (Course fee $25)

TECH 241, 242, 243 FABRICATION AND MACHINING OF METALS 2, 2, 2
Study of theory and practice in metal operations. Fall, basic lathe and drill press operations involving metal cutting and measurement; winter, various assembly methods including forging, heat treatment, molding, pouring, filing, bending and offhand grinding; spring, associated and succeeding operations such as threading, tapering, testing, reaming, riveting and use of jigs. Projects selected incorporate the operations taught and involve running of various pieces of equipment common to a basic machine laboratory.

TECH 251 INTRODUCTION TO COMPUTER HARDWARE 2
An introduction to computer component selection and application. Topics include motherboards, video cards, memory, storage devices and input/output devices, modems, printers and network cards.

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 326 HYDRAULICS AND PNEUMATICS 3
Study of the principles of pressure and flow as they relate to hydraulics and pneumatics. Includes operation of basic components, how the various components perform, fundamental equipment design and hydraulic and pneumatic use.

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 fee $30)

TECH 364 OCCUPATIONAL HEALTH AND SAFETY 2
Introduction to federal, state, and local safety codes applying to materials, material handling, and equipment commonly encountered by the technologist. Includes a study of codes from Occupational Safety and Health Act (OSHA), Washington Industrial Safety and Health Act (WISHA), National Fire Protection Association (NFPA), and Department of Transportation (DOT). Emphasis on the handling of hazardous wastes and the impact on ones health and the environment.

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.

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, on demand.

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, and cooperating businesses to gain practical experience in an off-campus setting. Allows the student to apply advanced classroom learning. Prerequisite: Approval by department.

TECH 499 SENIOR PROJECT 1-2
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, Douglas Clark, Paul Dybdahl, Bruce Johanson, Pedrito Maynard-Reid, Zdravko Stefanovic, Alden Thompson, Larry Veverka.

The principal purposes of the School of Theology are to provide undergraduate education for students seeking to enter the ministry and to offer courses in religion as desired by students in various other curricula of the college.

Candidates for the ministry are selected on the basis of scholarship, spiritual qualities, cultural refinement, social sympathies, and skills. In addition to completing the requirements of the Bachelor of Arts degree with a theology major, students interested in ministry in the SDA church must be advanced to candidacy by the theology faculty in order to receive departmental recommendation for ministry. Those approved will then work to meet seminary entrance requirements by completing a theology major. Students should plan on two additional years of graduate study at the Theological Seminary of Andrews University for ministerial internship.

Those who expect a recommendation to the seminary and/or those who plan to be pastors, evangelists, Bible workers, or Bible teachers should take a theology major. The religion major is available to those who are not planning on the ministry, and for those anticipating additional graduate training in such fields as medicine, dentistry, and law.

All majors must successfully complete a senior comprehensive examination. Theology and Biblical Languages majors must also pass a Greek proficiency examination with a minimum score of 70 percent. This exam is typically given near the end of each winter quarter. Those planning to attend the seminary should complete the undergraduate subjects required for entrance and maintain a minimum grade-point average of 2.50. Students who plan to teach religion in Seventh-day Adventist academies must aim for 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 college career.

The Biblical Languages major is intended for those who wish to gain facility in use of the basic tools for Biblical study, especially those anticipating graduate work in this and related areas.

MAJOR IN BIBLICAL LANGUAGES (Bachelor of Arts)

A student majoring in biblical languages must complete 45 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	Greek II	6
HEBR 331, 332	Hebrew	8
	Electives (12 must be upper division)	16-22
		45

Electives must be chosen in consultation with and approved by the academic adviser assigned by the School of Theology.

Cognates:

RELB	221	Biblical Interpretation	4
RELB	329	Greek Exegesis	3
RELB	423	Hebrew Exegesis	3
RELH	205	Biblical Archaeology	4
RELH	406	History of the English Bible	2
RELH	455	Early Church History	3

MAJOR IN RELIGION (Bachelor of Arts)

A student majoring in religion must complete 50 hours in the major (27 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	132	Introduction to the Bible	3
RELB	221	Interpreting the Bible	4
RELB		Biblical Studies Electives	12

6 hours must be in Old Testament studies and 6 hours must be in New Testament studies. Of the latter, at least one course needs to be outside the Gospels. Of the total, at least 6 hours must be upper-division.

RELH	205	Biblical Archaeology	
or			
RELH	402	Modern Denominations	3-4
or			
RELH	303	World Religions	
RELH	457	History of Adventism	3
RELP	131	Introduction to Faith and Ministry	3
RELP	441, 442	Senior Project I, II	1, 1
RELT	133	Introduction to Adventist Doctrine	3
RELT	202	Christian Beliefs	
and			
RELT	242	Christian Apologetics	
or			6-7
RELT	456	Systematic Theology I	
and			
RELT	457	Systematic Theology II	
RELT	248	Christian Ethics	4
RELT	321	Christian Spirituality	3
RELT	495	Colloquium (6 quarters required)	0
		Electives	2-4
			50

Electives must be chosen in consultation with and approved by the academic adviser assigned by the School of Theology.

Cognates:

ENGL	224	Research and Writing in Religion	3
		One Philosophy Course*	

*Recommended PHIL 412 or PHIL 305.

Religion majors must take their first three courses sequentially; RELP 131, RELB 132, RELT 133.

MAJOR IN THEOLOGY (Bachelor of Arts)

A student majoring in theology must complete 60 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	132	Introduction to the Bible	3
RELB	329	Greek Exegesis	3
RELB	423	Hebrew Exegesis	3
RELH	455	Early Church History	3
RELH	457	History of Adventism	3
RELP	131	Introduction to Faith and Ministry	3
RELP	237	Church Ministry	4
RELP	337	Church Worship Ministry	2
RELP	338	Church Leadership Ministry	2
RELP	440	Crisis Ministry	2
RELP	441, 442	Senior Project I, II	2
RELT	133	Introduction to Adventist Doctrine	3
RELT	248	Christian Ethics	4
RELT	417	Inspiration and Revelation	3
RELT	456, 457	Systematic Theology I, II	6
RELT	495	Colloquium (6 required)	0
		Electives (8 must be upper division)	13
			60

Electives must include one course from each of the two following groups:
RELB 301, 302, 303, 304, or 305
RELB 412, 438, 439, 440, 464, 465, or 466

Cognates:

ENGL	224	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, 332	Greek II	6+
HEBR	331, 332	Hebrew	8
SPCH	101	Fundamentals of Speech Communication	4
SPCH	381, 382, 383	Biblical Preaching	6
		One Philosophy Course*	

* Recommended PHIL 412 or PHIL 305.

Theology majors who complete all or most of their requirements at Walla Walla College, must take sequentially the basic core of theology courses: RELP 131, RELB 132, RELT 133, RELP 337, 338, 440, 441, 442.

Theology majors must participate in at least one summer of supervised pastoral/evangelistic experience which is approved in advance by the School of Theology.

NOTES 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 the sequences of RELH 131, RELB 132, RELP 234, 235, 236, ENGL 224, and GREK 231, 232, 233.

MINOR IN ARCHAEOLOGY

Requirements:

ANTH 225	Cultural Anthropology	4
RELH 205	Biblical Archaeology	4
RELH 490	Archaeological Fieldwork (Religion)	4
RELH 469	Advanced Study (Archaeology)	2
HIST 305	The Ancient Near East	4
HIST 490	Archaeological Fieldwork (History)	4
	Electives	9
		30

Electives to choose from:

ART 284, 285 or 286	Introduction to Pottery I, II, III	2
ART 324	History of World Art	3
GEOG 252	Physical Geography	4
HIST 120	History of Western Civilization	4
HONR 281	The Bible and Its Environment	4
RELB 301	Old Testament History	3
RELB 455	Book of Judges: A Cross-Disciplinary Approach	4
RELH 455	Early Church History	3
SOCI 204	General Sociology	4

Recommended:

GEOL 101, 102	Physical Geology	4,4
PHYS 211, 212, 213	General Physics (with lab)	4,4,4
PHTO 156	Principles of Photography	3
	An ancient language (Hebrew, Greek, Latin, Akkadian, etc.)	

MINOR IN BIBLICAL LANGUAGES

A student minoring in Biblical languages must complete 30 quarter hours:

Electives (9 must be upper division)	30

Approval of Biblical languages adviser required. Recommended electives outside the minor are RELB 329; RELH 205, 406, 455; RELT 404.

MINOR IN RELIGION

A student minoring in religion must complete 30 quarter hours:

Electives (9 must be upper division)	30

Approval of religion adviser required.

All REL classes, except RELP, may count toward a Minor in Religion

At least one lower-division religion course is required before students may take upper-division religion courses listed in the bulletin.

BIBLICAL STUDIES (RELB)

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 132 INTRODUCTION TO THE BIBLE 3
Introduction to the historical background, content and methods of study of both Old and New Testaments. Open only to theology and religion majors. Prerequisite: RELH 131.

RELB 216 MESSAGES OF PAUL 4
Survey of the basic themes of Paul's letters.

RELB 221 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.

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 I 4
A study of the ministry and messages of the early prophets of Israel.

RELB 305 HEBREW PROPHETS II 4
Examination of the ministry and messages of the exilic and post-exilic prophets, including a consideration of their relevance for today.

RELB 329 GREEK EXEGESIS 3
Exegetical study of selected New Testament and Septuagint texts with a focus on exegetical methods. Prerequisites: GREK 331, 332, 333 and/or the successful completion of the Greek proficiency examination.

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 412 DANIEL AND REVELATION 4
An exegetical study of the apocalyptic books of Daniel and Revelation within their historical and literary contexts, with special attention to their significance for Christian Eschatology.

RELB 423 HEBREW EXEGESIS 3
Exegetical study of selected Old Testament passages based on Hebrew text. Prerequisites: HEBR 331, 332.

RELB 438 THE SYNOPTIC GOSPELS 3 or 4
An examination of the synoptic relations between Matthew, Mark, and Luke combined with a focus by choice of the instructor on either Matthew or Mark that attends to back-

ground and purpose, literary composition, theology, ethics, and relevance of contemporary issues. (College Place Campus—3 quarter hours; Portland Campus—4 quarter hours.)

RELB 439 LUKE-ACTS 3 or 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. (College Place campus—3 quarter hours; Portland campus—4 quarter hours.)

RELB 440 THE GOSPEL AND LETTERS OF JOHN 3 or 4
An examination of the Gospel and Letters of John with attention to background and purpose, literary composition, theology, ethics and relevance to contemporary issues. (College Place campus—3 quarter hours; Portland campus—4 quarter hours.)

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 464 THESSALONIANS AND CORINTHIANS 3 or 4
An examination of 1 & 2 Thessalonians and 1 & 2 Corinthians with attention to background and purpose, literary composition, theology, ethics and relevance to contemporary issues. Students who have taken RELB 216 should not register for this course without special permission. (College Place Campus—3 quarter hours; Portland Campus—4 quarter hours.)

RELB 465 NEW TESTAMENT PRISON, PASTORAL AND GENERAL LETTERS 3 or 4
An examination of Colossians, Philemon, Ephesians, Philippians, 1 & 2 Timothy, Titus, Hebrews, James, 1 & 2 Peter and Jude, with attention to background and purpose, literary composition, theology, ethics and relevance to contemporary issues. Students who have taken RELB 216 should not register for this course without special permission. (College Place Campus—3 quarter hours; Portland Campus—4 quarter hours.)

RELB 466 GALATIANS AND ROMANS 3
An examination of Galatians and Romans with attention to background and purpose, literary composition, theology, ethics and relevance to contemporary issues. Students who have taken RELB 216 should not register for this course without special permission. Offered as needed.

RELIGIOUS HISTORY (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 3 OR 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. (College Place Campus—3 quarter hours; Portland Campus—4 quarter hours.)

RELH 402 MODERN DENOMINATIONS 3
Study of the cardinal teachings of a number of the prominent denominations of the world; includes comparisons of the teachings relating to God, salvation, sin, and the future.

RELH 406 HISTORY OF THE ENGLISH BIBLE 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.

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 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 2
See the Social Work and Sociology section of this bulletin.

MISSIONS (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 (RELP)

RELP 131 INTRODUCTION TO FAITH AND MINISTRY 3
Exploration of personal faith and pastoral ministry with a focus on spiritual disciplines, call to pastoral ministry, and the scope of pastoral ministry. The course includes a required weekend retreat. Open only to theology and religion majors. (Course fee $40)

RELP 237 CHURCH 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. Prerequisites: RELH 131, RELB 132, RELP 133.

RELP 337 CHURCH WORSHIP MINISTRY 2
A study and application of the theology and choreography of worship. Open only to theology majors. Prerequisite: RELP 133.

RELP 338 CHURCH LEADERSHIP MINISTRY 2
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 majors. Prerequisite: RELP 133.

RELP 370 HOSPITAL MINISTERIAL TRAINING 2-4
An inductive exploration of ministry through patient visitation, small group process, lecture and discussion facilitated by chaplains, medical professionals and other support professionals in a clinical hospital setting. The class is limited to six students. Registration by permission of the instructor only. Offered as needed.

RELP 395 METHODS OF TEACHING BIBLE IN THE SECONDARY SCHOOL 3
Examination of current religion teaching practices in the secondary school with emphasis on objectives, content, organization, and materials and resources available; requires observation in the schools along with microteaching, giving opportunity to demonstrate competency. Prerequisites: 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 majors. Prerequisite: RELP 133.

RELP 441, 442 SENIOR PROJECT I, II 1, 1
Research, presentation, and discussion of a topic which integrates religious studies and professional goals. Open only to senior theology and religion majors. Prerequisite: ENGL 224.

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. Offered on demand.

RELP 490 FIELD EVANGELISM 1-3; 3
Experience in evangelistic techniques obtained by giving Bible studies and/or holding meetings. Offered on demand.

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. Graded S or NC.

SPCH 381, 382, 383 BIBLICAL PREACHING 2, 2, 2
See the Communications section of this bulletin.

THEOLOGY (RELT)

RELT 110 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.

RELT 133 INTRODUCTION TO ADVENTIST DOCTRINE 3
Introduction to Seventh-day Adventist doctrine with a focus on its origins, development and present issues. Open only to theology and religion majors. Prerequisites: RELP 131, RELB 132.

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 on demand.

RELT 202 CHRISTIAN BELIEFS 4
Study of Christian teachings from Seventh-day Adventist perspective; explores topics such as revelation, God, creation, human beings and sin, the person and work of Jesus, the nature and purpose of the church, salvation, and Christian hope. Prerequisite: One college-level religion course or permission of instructor.

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 242 CHRISTIAN APOLOGETICS 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 248 CHRISTIAN ETHICS 4
Study of the foundations and application of ethics to contemporary issues such as bioethics, sexuality, economics, violence, discrimination and the environment, with a focus on moral decision-making and behavior.

RELT 314 CHRISTIAN HOPE 3
Study of Christian eschatology with emphasis upon Biblical patterns of hope and disappointment, early Adventist end-time predictions, contemporary visions of hope offered by Seventh-day Adventists and other Christians, and the implications of eschatology for ethics. Offered on demand.

RELT 321 CHRISTIAN SPIRITUALITY 3
Study of the dynamics of the Christian spiritual life as lived individually and in the community. Topics include prayer, meditation, worship, healing, and spiritual guidance. Prerequisite: one college-level religion course or permission of the instructor.

RELT 330 CHRISTIAN DISCIPLESHIP 3
Study of the relationship of the individual to the church; considers the development of study skills with analysis of a member's responsibility to the church community. Emphasis in methods of Bible study, the use of tools for Bible study, organization of the church, the role of the layman in the administration of the church, and the mission of the church. Designed primarily for the nonministerial student. Prerequisite: 6 hours of religion general studies credit.

RELT 340 THEOLOGY OF SPIRITUAL CARE 4
Study of the theological concepts that relate to the issues of human suffering and application of the Biblical principles that underlie the spiritual care of those who suffer. Offered on the Portland campus.

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.

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. All Religion and Theology majors must satisfactorily complete six quarters, at least one of which must be during their senior year. Requirement must be completed at least one quarter before graduation. Graded S or NC.

BIBLICAL LANGUAGES (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 GREEK II 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 341 INTRODUCTION TO NEW TESTAMENT TEXTUAL CRITICISM 2
Survey of the history and present development of New Testament textual criticism; integration of textual criticism and translation of selected passages from Novum Testamentum Graece. Offered upon request.

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, 332 HEBREW 4, 4
Study of Hebrew grammar and syntax with reading and translation taken from the textbook and passages of the Hebrew Bible; designed to enable the student to use the language as a tool in Biblical studies and to provide a basis for further study in Hebrew. Language laboratory required.

HEBR 332 ELEMENTARY HEBREW 3
Study of Hebrew grammar and syntax advancing to reading and exegesis of selected Hebrew Bible passages. Prerequisite: HEBR 331.

HEBR 451 READINGS IN HEBREW 2; 6
Selected reading in the various sections of the Hebrew Bible. Prerequisites: HEBR 332, 333.

LANE 460 LANGUAGES OF THE ANCIENT NEAR EAST 3; 12
Introduction to the elements of an ancient Near Eastern language, its vocabulary, grammar, syntax and cultural background. Departmental approval required.

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 on demand.

FINANCIAL INFORMATION

The ***Finance Bulletin*** is published as a detailed guide to finances at Walla Walla College. 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 ***Finance 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 College, and others to make financial arrangements for students to receive an education at Walla Walla College. 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.

THE STUDENT EMPLOYMENT CENTER assists students in finding work both on and off campus. The center neither hires students nor assigns them to particular jobs, but works with students individually to help them secure employment.

FOR INFORMATION	Call	Toll Free	E-Mail
Financial Counselors	509-527-2815	800-656-2815	stufin@wwc.edu
Financial Aid Counselors	509-527-2315	800-656-2315	finaid@wwc.edu
Student Employment Center	509-527-2357	800-656-2357	stuemp@wwc.edu

STUDENT FINANCIAL SERVICES' FAX 509-527-2556

ESTIMATED UNDERGRADUATE STUDENT BUDGETS

DORMITORY STUDENT

	Per Quarter	Per Year
Tuition (full-time, 13-16 hours)	$5,620	$16,860
ASWWC Membership Dues	55	165
Room Rent	725	2,175
Cafeteria (minimum)	462	1,386
Books (average)	270	810
TOTAL	$7,132	$21,396

NON-DORMITORY STUDENT

	Per Quarter	Per Year
Tuition (full-time, 13-16 hours)	$5,620	$16,860
ASWWC Membership Dues	55	165
Books (average)	270	810
TOTAL	$5,945	$17,835

Students will have additional expenses for such things as transportation, personal needs, and other necessities and extras not mentioned here. Parents and students will want to consider such expenses when making plans to cover the total costs of college.

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, and dormitory rent plus any previous balance and less any awarded financial aid are paid before the student receives clearance for registration. Students and/or parents are billed for variable charges (such as bookstore and cafeteria purchases) 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, and dormitory 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 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 cafeteria purchases) 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 Bal.	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 College 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 College, 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 WWC.
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 per transcript.

FINANCIAL AID

Families unable to meet the full costs of a Walla Walla College education are encouraged to apply for financial aid from the government and the college. Financial aid applicants are evaluated based on the government's standard analysis of need. This analysis determines how much each family can afford to pay for college 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 based on 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 college 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 college life.

In order to receive the maximum financial assistance available, students should plan their finances for the entire academic school year prior to registration.

INTERNATIONAL STUDENTS

EXPENSES

International Student Deposit

Students who are not citizens or permanent residents of the United States (except Canadian students) are asked to place a $3,000 (U.S.) deposit with the college 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 College requires all international (overseas) students to have medical insurance coverage.

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 WWC 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 this bulletin. To determine ability to meet educational costs, the college requires applicants to submit a declaration of finances before final acceptance is given.

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Theology
David E. Thomas, D.Min.

ACADEMIC ADMINISTRATION — DEPARTMENT CHAIRPERSONS

Art
Thomas J. Emmerson, M.F.A.

Biology
Scott H. Ligman, Ph.D.

Chemistry
Steven H. Lee, Ph.D.

Communications
Pamela M. Harris, Ph.D.

Computer Science
Anthony A. Aaby, Ph.D.

English
Nancy K. Cross, M.A.

Health and Physical Education
Gary M. Hamburgh, Ph.D.

History and Philosophy
Montgomery S. Buell, M.A.

Mathematics
Kenneth L. Wiggins, Ph.D.

Modern Languages
Jean-Paul Grimaud, M.A.

Music
Matthew H. James, D.M.A.

Physics
Roy K. Campbell, Ph.D.

Technology
Linda F. Nelson, Ed.D.

Director, College Libraries
Carolyn S. Gaskell, M.A.

ACADEMIC SUPPORT

Director of Admissions
Dallas Weis, M.Ed.

Director of Academic Advisement
Betty Duncan, B.A.

Director of Career Center
Nelle Cornellison, M.Ed.

Director of Recruitment

Director of Summer Session
Clinton A. Valley, Ed.D.

Director of Teaching Learning Center and Disability Services
Kristy Guldhammer, M.A.

Director of Technical Support Services
James Forsyth, M.A.

Manager, KGTS Station
Kevin Krueger, B.A.

Registrar
Carolyn Denney, B.S.

COLLEGE ADVANCEMENT

Director, Alumni Affairs
Corina Car, B.S.B.A.

Director, Annual Giving
Bill Hicks, B.S.

Director, Capital Campaigns
Dorita Tessier, B.S.

Director, College Relations
Rosa Jimenez, B.A.

Director, Estate Planning Services
Allan Fisher, Ed.D.

Director, Special Events
Veda Logan

FINANCIAL ADMINISTRATION

Executive Director of Physical Plant Operations and Information Services
Jerry Mason, B.S.

Director of Personnel Services
Ed Ammon, B.A.

Director of Student Financial Services
Cassie Ragenovich, B.S.

AUXILIARY

Manager, College Bookstore
Barbara Bigger, M.A.

STUDENT SERVICES

Chaplain
Lois Blackwelder, B.A.

Consulting Physician
A. D. Selfa, M.D.

Dean of Men
John Foote, B.S.

Dean of Women
Bunny R. A. Reed, B.S.

Director of Counseling and Testing Center
Donald E. Wallace, Ph.D.

Director of Food Service
Jenny Fuchs

Director of Health Services
Patrick R. Smart, R.N., M.S.N., A.R.N.P.

Director of Village Student Life

Residence Hall Dean (Portland Campus)
Eileen Stuart, R.N., M.S.W., A.C.S.W.

PRESIDENTS OF WALLA WALLA COLLEGE

*William Prescott	1892-1894	*George W. Bowers	1938-1955
*Edward A. Sutherland	1894-1897	*Percy W. Christian	1955-1964
*Emmett J. Hibbard	1897-1898	*William H. Shephard	1964-1968
*Walter R. Sutherland	1898-1900	*Robert L. Reynolds	1968-1976
*Edwin L. Stewart	1900-1902	N. Clifford Sorensen	1976-1985
*Charles C. Lewis	1902-1904	H. J. Bergman	1985-1990
*Joseph L. Kay	1904-1905	Niels-Erik Andreasen	1990-1994
*Marion E. Cady	1905-1911	W. G. Nelson	1994-2001
*Ernest C. Kellogg	1911-1917	John C. Brunt	2001
*Walter I. Smith	1917-1930	N. Clifford Sorensen	2001-2002
*John E. Weaver	1930-1933	Jon L. Dybdahl	2002-
*William M. Landeen	1933-1938		

*deceased

INSTRUCTIONAL FACULTY †

Anthony A. Aaby, *Professor of Computer Science (1992)*
B.A. 1969, Loma Linda University
M.A. 1975; Ph.D. 1988, The Pennsylvania State University

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B.S.E. 1977, Walla Walla College
M.S.E.E. 1990; Ph.D. 1999, Washington State University

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

Clarence G. Anderson, *Professor of Management (1993)*
B.A. 1978, Walla Walla College
Ph.D. 1996, University of Alberta
C.P.A. – inactive 2000, State of Washington

Duane L. Anderson, *Assistant Professor of Computer Information Systems (2002)*
B.S. 1984, Loma Linda University
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B.S.B.A. 1971, Henderson State College
C.P.A. 1973, State of California
J.D. 1976, Southern Methodist University

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B.S.N. 1980; M.P.H. 1982, Loma Linda University
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M.S.W. 1994, Walla Walla College

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B.S. 1961, Pacific Union College
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B.S. 1985, Walla Walla College
M.Mus. 1988, VanderCook College of Music

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Ph.D. 1989, Oregon State University

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B.A. 1980; B.S. 1982; M.S.Ed. 1983, Eastern Illinois University
Ed.D. 1990, West Virginia University

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B.S.W. 1988; University of Alaska
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Diploma, 1961, Ostrava Conservatory
B.A. 1970, University of Waterloo
M.Mus. 1971, Andrews University; M.Mus. 1977, Manhattan School of Music
Ph.D. 1984, New York University

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B.S.E. 1985, Walla Walla College
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Gail S. Rittenbach, *Professor of Education and Psychology (1986)*
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B.S. 1971, Atlantic Union College
Ph.D. 1976, Worcester Polytechnic Institute

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B.S. 1980, Pacific Union College

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Associateship (Piano) 1978, The Royal Conservatory of Toronto
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M.S.W. 1989, Florida International University

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M.A. 1964, Walla Walla College

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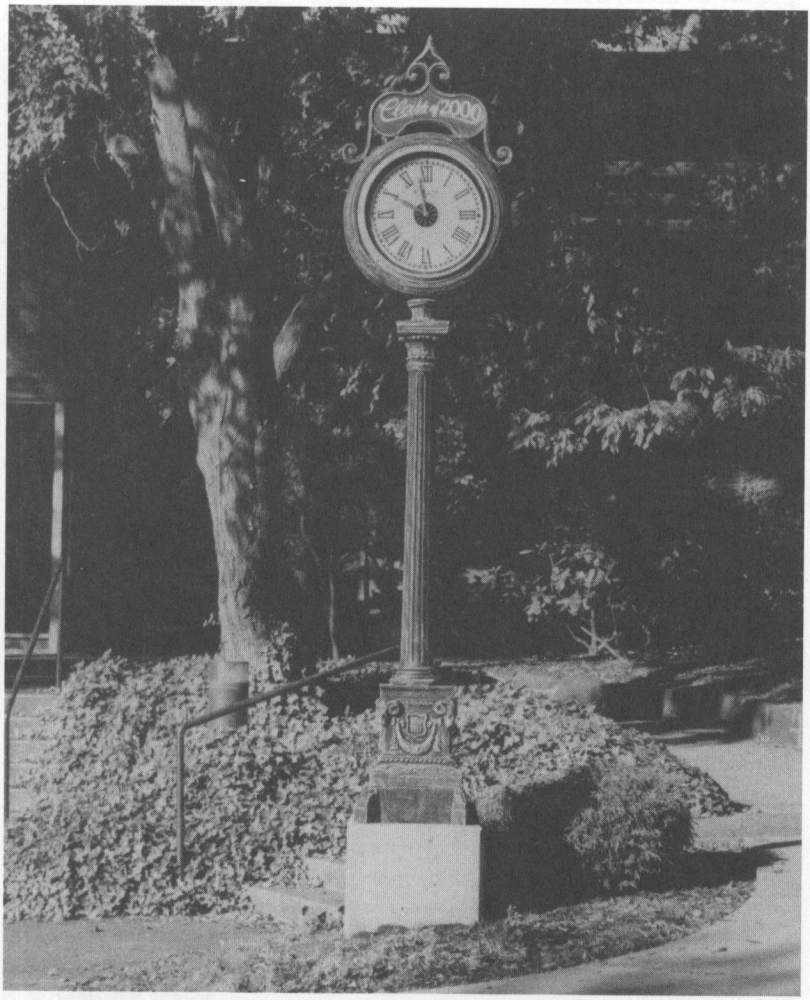

EMERITI AND EMERITAE

Claude C. Barnett, Ph.D.
Professor of Physics

Frederick R. Bennett, Ph.D.
Professor of Engineering

Roland R. Blaich, Ph.D.
Professor of History

Chester D. Blake, Ed.D.
Professor of Technology

James R. Chambers, Ph.D.
Professor of Chemistry

Ralph M. Coupland, Ed.D.
Associate Professor of Education

C. Loren Dickinson, Ph.D.
Professor of Communications

J. Paul Grove, B.D.
Professor of Religion

Kenneth L. Gruesbeck, M.Ed.
Professor of Technology

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Professor of Mathematics

E. Lee Johnston, M.S. L.S.
Librarian

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Professor of Biblical Studies

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Professor of Mathematics
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Dan M. Shultz, M.Mus.
Professor of Music

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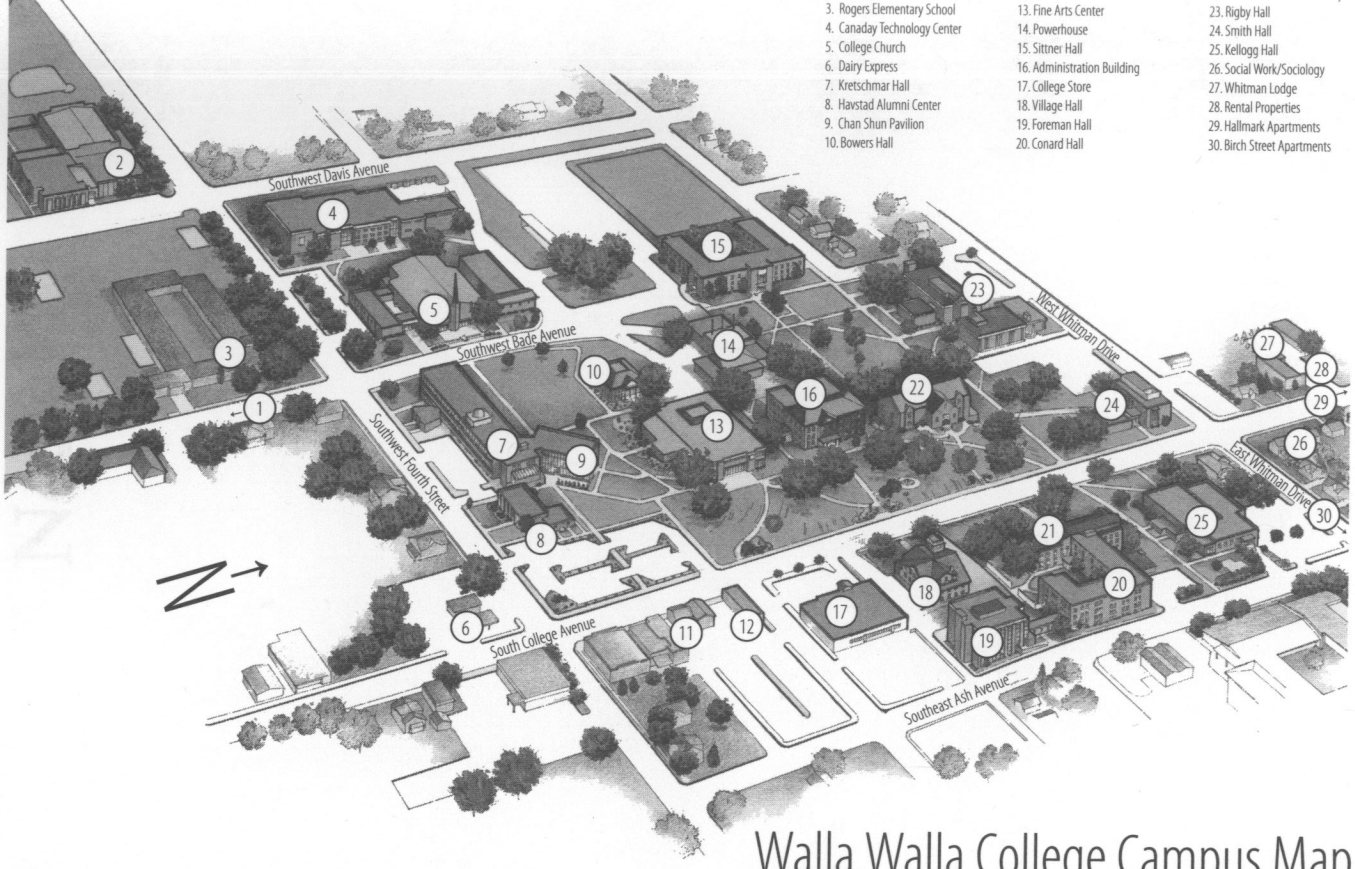

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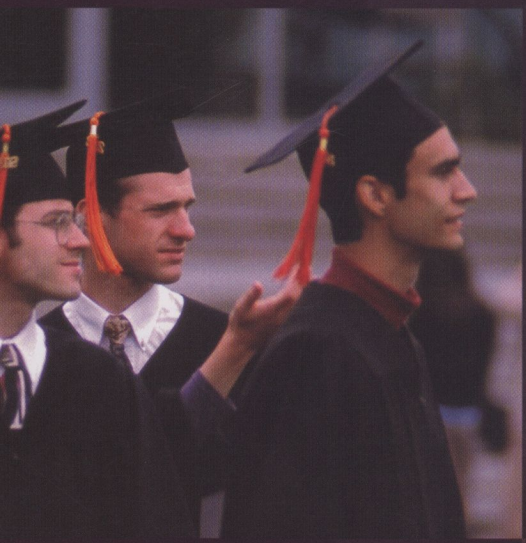

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