ETHNIC STUDIES

Program Director Delores Cleary, Sociology
Farrell Hall 442

Ethnic Studies Minor

Ethnic Studies is a discipline that incorporates the Social Sciences and the Humanities to explore the comparative approaches to the study of minority groups in the United States. The central mission of an Ethnic Studies program is to increase the understanding of racial and cultural diversity of American society and the dynamics of interethnic relationships. At Central Washington University the ETS program is interdisciplinary, offering courses from other disciplines with a core in Ethnic Studies. In addition to the minor program, it provides important services to teacher preparation and general education requirements.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETS 101, Ethnic Awareness</td>
<td>4</td>
</tr>
<tr>
<td>ETS 354, Minority Experiences OR</td>
<td>4</td>
</tr>
<tr>
<td>SOC 365, Minority Groups</td>
<td>5</td>
</tr>
<tr>
<td>SOC 386, Seminar on Racism</td>
<td>5</td>
</tr>
</tbody>
</table>

SubTotal: 14

A. Choose two courses from below. . . 6-10

Each course must come from a different category.

General

- ANTH/COM 302, Intercultural Communication (4)
- ANTH 356, Gender Roles in Cross-Cultural Perspective (4)
- ETS 403, American Ethnic Literature (5)
- ETS 355, Culture and Personality (4)
- SOC 205, American Society (5)
- SOC 354, Minority Experience (5)
- SOC 356, Sex Roles in Society (5)
- SOC 445, Social Inequality (5)

Hispanic American

- ANTH 342, Hispanic Cultures of the Western U.S. (4)
- ETS 350, Survey of Chicano Studies (4)
- ETS 351, Contemporary Chicano Issues (5)
- ETS 352, Chicano Social and Psychological Perspectives (4)
- ANTH 341, Native American Cultures of the Pacific Northwest (4)
- ETS 371, Survey of American Indian Studies (5)
- ETS 373, American Indian Authors and Publications (3)
- ETS 471, Issues in American Indian Education (5)
- ETS 472, American Indian Profiles (3)

Asian American

- ETS 311, The Asian American (3)
- ETS 312, Asian American Identity and Personality (5)

- Special topics courses, seminars, and cooperative education credits as approved by ETS

B. Choose two courses from below. . . 6-10

Each course must come from a different category.

- ANTH 347, Native American Cultures of North America (4)
- ANTH 349, Contemporary Native American Cultures (4)
- ENG 332, Native American Literature (4)
- ENG 333, Asian American Literature (4)

African American

- ANTH 348, African American Literature (4)
- MUS 101, History of Jazz (5)

African American

- ENG 247, Multicultural Literature (4)
- TH 382, Ethnic Drama (4)
- PHIL 357, Race, Class, and Gender in American Philosophy (5)

Asian American

- ENG 330, African American Literature (4)
- MUS 101, History of Jazz (5)

Total: 27-34

Ethnic Studies Courses

Ethnic Studies courses emphasize the economic and political conflict from the subordinate group perspective.

- ETS 101, Ethnic Awareness (4). Awareness and understanding of the problems facing the American people in the area of race and ethnic relations, primarily focusing on ethnic minorities. The nature and scope of relationships between minority groups and the majority in the United States.
- ETS 296, Individual Study (1-6).
- ETS 298, Special Topics (1-6).
- ETS 299, Seminar (1-5).
- ETS 311, The Asian American (3). Prerequisite, ETS 101. An overview of demographics, history, cultures, and experiences of Asian Americans in the U.S. society. Formerly ETS 111. Students may not receive credit for both.
- ETS 312 Asian American Identity and Personality (5). Exploring the complexity and meanings of Asian American identity; examining the responses of America to the presence of Asians and how Asian Americans themselves have taken upon various roles and identities.
- ETS 321, Survey of African American Studies (4). Prerequisite, ETS 101. A historical and cultural survey of Chicanos from 1540 to the present with a regional emphasis in the Southwest. Formerly ETS 151. Students may not receive credit for both.
- ETS 350, Survey of Chicano Studies (4). Prerequisite, ETS 101. A historical and cultural survey of Chicanos from 1540 to the present with a regional emphasis in the Southwest. Formerly ETS 151. Students may not receive credit for both.
- ETS 351, Contemporary Chicano Issues (5). Prerequisite, ETS 101 or permission of the instructor. An examination of current education, social, and political issues concerning Chicanos in American society. Formerly ETS 252. Students may not receive credit for both.
- ETS 352, Chicano Social and Psychological Perspectives (4). Prerequisite, SOC 107 or SOC 108 or permission. An examination of social and psychological perspectives put forth by Chicanos and non-Chicano interethnic relations, sex roles, and family and religion.
- ETS 354, Minority Experiences (5). Explorations will be identified for institutional racism common to the history and character of American minorities. ETS 354 and SOC 354 are equivalent courses. Students may not receive credit for both.
- ETS 371, Survey of American Indian Studies (5). Prerequisite, ETS 101. Emphasis on historical and contemporary cultural and institutional patterns: marriage and the family; religion; education; economic and political systems; relationships to society. Formerly ETS 171. Students may not receive credit for both.
- ETS 373, American Indian Authors and Publications (3). A study of American Indian authors and publications, past and present. Emphasis on publications and literature written by and/or produced by “informants” or recorded oral literature.
- ETS 398, Special Topics (1-6).
- ETS 403, American Ethnic Literature (5). An introductory study of recent developments in American ethnic literature, including writing by prominent and contemporary Asian Americans, Black, Chicano, and American Indian authors.
ETS 471. Issues in American Indian Education (5). A course to give students a broad understanding of the process for educating American Indians in traditional American Indian societies and in modern society, with emphasis on the present status of American Indian education and its potential development through specialized programs.

ETS 472, American Indian Profiles (3). An intensive study of leaders within the American Indian community.

ETS 490, Contracted Field Experience (1-12)
ETS 491, Workshop (1-6)
ETS 496. Individual Study (1-6). Prerequisite, permission of instructor.
ETS 498, Special Topics (1-6)
ETS 499. Seminar (1-5).

Related courses regularly offered in other departments include: ANTH 347 Native American Cultures of North America, ANTH 341 Native American Cultures of the Pacific Northwest, ENG 330 African American Literature, HIST 343 History of Black America since 1865, SOC 365 Minority Groups.

FAMILY AND CONSUMER SCIENCES

Faculty
Chair: Jan Bowers
Michaelsen 100

Professors
Joan Amby, Family Studies
Ethan Bergman, Food Science and Nutrition
Jan Bowers, Family and Consumer Sciences Education
David L. Gee, Food Science and Nutrition

Associate Professors
Vicki Shaffer-White, Fashion Merchandising
Marla Wyatt, Family and Consumer Sciences Education

Lecturers
Virginia Bennett
Quenby Delgado
Ximena Hedrick
Connie Kolokotrones

General Departmental Information
The Department offers programs of study leading to Bachelor of Arts degrees in Family and Consumer Sciences and Family and Consumer Studies. Bachelor of Science degrees are available in Family and Consumer Sciences, Vocational Teaching, Fashion Merchandising, and in Food Science and Nutrition. There is also a Master of Science degree in Family and Consumer Sciences.

These majors offer training in a variety of fields. Specific information concerning them and their specializations is described in the introduction to each major.

Students planning to become certified for Vocational Family and Consumer Sciences Education must take the B.S. Family and Consumer Sciences major and fulfill the additional requirements as outlined by the Curriculum and Supervision Department.

The B.A. Family and Consumer Sciences major offers two specializations. Students can specialize in Family Studies or a specialization that is non-structured and permits any combination of departmental courses (and may include a limited number of courses from other departments) to create a program best suited to a particular student’s interests and professional goals. The Department Chair can provide further information and guidance.

Department advisors are available for all majors and students are urged to make contact with an appropriate advisor as soon as possible. Contact the Department Chair for help in identifying an advisor. Course fees for various specializations in Family and Consumer Sciences will be assessed as appropriate.

Admission Policy for Family and Consumer Sciences

1. All students, except Family Studies majors, must have successfully completed FCSG 205 prior to being admitted to the major.
2. Students must have successfully completed ENG 101 and 102 or equivalents.
3. The application for major form must be completed, then signed by a department advisor and Chair. A current credit evaluation from Registrar Services must accompany the form.
4. Students must have a university-level cumulative GPA of at least 2.30 for full admission to a departmental major.
5. Students may be admitted as pre-majors by the Department Chair. Students admitted as pre-majors must achieve at least a 2.30 GPA as a full-time student for the following two consecutive quarters of enrollment to be fully admitted to a departmental major.
6. If the student does not meet admission requirements following pre-major admission, reapplication for admission to a departmental major may be made when the cumulative GPA is at least 2.30.
7. Students must earn a minimum grade of C- in each course counted towards fulfilling major and minor requirements.
8. Students must have a 2.3 minimum cumulative GPA in the major and minor to exit the program.

Bachelor of Arts
Family and Consumer Studies
Major with Specialization

The Bachelor of Arts in Family and Consumer Studies prepares students for employment or advanced study in one of several professions in the broad area of family and consumer studies. Curriculum requirements have been approved for a specializations in Family Studies.

Family Studies Specialization

The Family Studies specialization is an interdisciplinary study of interpersonal, and family relationships. Graduates are well prepared for career opportunities in family service agencies, parent education programs, family counseling centers, other family life education settings, or advanced study in family relations. Students must successfully complete FCSF 234, Introduction to Family Studies, before being admitted to the program.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 130</td>
<td>Introduction to Cultural Anthropology</td>
<td>5</td>
</tr>
<tr>
<td>PSY 101</td>
<td>General Psychology OR SOC 107, Principles of Sociology</td>
<td>5</td>
</tr>
<tr>
<td>FCSF 234</td>
<td>Introduction to Family Studies</td>
<td>4</td>
</tr>
<tr>
<td>EDEC/FCSF 331</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY 447</td>
<td>Psychology of Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>PSY 452</td>
<td>Adult Development and Aging OR FCSF 435, Family Gerontology</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 231</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 235, Relationships and Personal Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FCSF 336</td>
<td>Parent Education and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>LAJ 311</td>
<td>Family Law OR FCSF 439, Families and Public Policy</td>
<td>3-4</td>
</tr>
<tr>
<td>Select one from the following:</td>
<td></td>
<td>3-4</td>
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<tr>
<td>SOC 357, Sociology of Families</td>
<td>4</td>
<td></td>
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<tr>
<td>HIST 352, History of the American Family</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ANTH/FCSF 333, Culture and Marriage</td>
<td>4</td>
<td></td>
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<tr>
<td>FCSF 434, Ethnic Diversity in Families</td>
<td>3</td>
<td></td>
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<tr>
<td>FCSF 334, Family Problems and Mediation</td>
<td>4</td>
<td></td>
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<tr>
<td>FCSF 433, Family Life Education</td>
<td>4</td>
<td></td>
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<tr>
<td>FSCS 472, Life Management OR FSCS 371, Consumer Awareness</td>
<td>3-5</td>
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<tr>
<td>FCSF 490, Cooperative Education OR Approved Electives</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Total 61-65
Personalized Studies Specialization

This specialization allows the student to construct a personalized major. It may consist of a broad exposure to all the areas of the discipline or may concentrate on one or two areas of emphasis.

Apparel Studies Emphasis. A minimum of 45 credits are required, at least 50 percent of which must be at the upper-division level. With department chair approval, a limited number of courses from other departments may be included.

The planned course of study must have the signature of both the student and a faculty advisor before submission to the department chair for approval.

Interior Design Emphasis. This emphasis prepares students for professional careers as residential, commercial, hospitality or health care interior designers. In addition, students may choose to specialize in kitchen and bath design (the program is endorsed by the National Kitchen and Bath Association). An individual course of study will be developed for each student with the interior design advisor.

Family and Consumer Sciences Major

The Bachelor of Arts in Family and Consumer Sciences comprises a general introduction to the broad areas of family and consumer sciences and, with an appropriate minor, can provide students with a well-rounded preparation for life or for further advanced study. This major requires a minor or double major.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCSC 405, FCS Exit Assessment</td>
<td>1</td>
</tr>
<tr>
<td>FCSC 425, Life Management</td>
<td>5</td>
</tr>
<tr>
<td>FCSC 351, Sociocultural Aspects of Apparel</td>
<td>5</td>
</tr>
<tr>
<td>FCSC 355, Consumer Textiles</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 231, Human Sexuality</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 235, Relationships and Personal Development (3) OR FCSF 234, Introduction to Family Studies (4)</td>
<td>3-4</td>
</tr>
<tr>
<td>FCSF 331, Child Development OR PSY 447, Psychology of Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 140LAB, Introduction to Foods Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>FCSN 140, Introduction to Foods</td>
<td>2</td>
</tr>
<tr>
<td>FCSN 245, Basic Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>FCSN 342, Introduction to Family Development (3) OR FCSN 344, Introduction to Family Studies (4)</td>
<td>3-4</td>
</tr>
<tr>
<td>FCSN 345, Developmental Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 346, Sports Nutrition and Weight Control</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 447, Nutrition and Society</td>
<td>3</td>
</tr>
<tr>
<td>EDCS 312, Educational Statistics OR PSY 362, Introductory Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 45-46

Bachelor of Science Food Science and Nutrition Major with Specialization

The Bachelor of Science in Food Science and Nutrition major prepares students for employment or advanced study in one of several professions in the broad area of foods and nutrition. To complete degree requirements, students must complete the required core courses listed below. Students must also complete courses listed in their chosen specialization.

In addition to Department requirements listed above, students must successfully complete MATH 100.1, Intermediate Algebra, or equivalent, before being admitted to the major. Students must consult with a major advisor for approval of the program specialization.

Students are highly encouraged to complete at least five credits of FCSG 490, Co-operative Education.

Food Science and Nutrition Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCSN 140, Introduction to Foods</td>
<td>2</td>
</tr>
<tr>
<td>FCSN 140LAB, Introduction to Foods Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>FCSN 245, Basic Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>FCSN 345, Developmental Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 446, Sports Nutrition and Weight Control</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 447, Nutrition and Society</td>
<td>3</td>
</tr>
<tr>
<td>EDCS 312, Educational Statistics OR PSY 362, Introductory Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Food Science and Nutrition Core Total 22

Select one of the following specializations:

Nutrition and Dietetics Specialization

The Nutrition and Dietetics specialization fulfills the requirements of the American Dietetic Association for a Didactic Program in Dietetics (DPD). The DPD is currently granted developmental accreditation status by the American Dietetic Association Commission on Accreditation for Dietetics Education (CADE), a specialized accrediting body recognized by the Council on Post-secondary Accreditation and the United States Department of Education. Completion of this program qualifies the student to apply for admission to a CADE Accredited Supervised Practice Experience. Following this the student is eligible to sit for the registration examination. Passing the registration exam qualifies the graduate to become a Registered Dietitian (R.D.).

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSN Core Requirements</td>
<td>22</td>
</tr>
<tr>
<td>BIOL 220, Introductory Cellular Biology</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 323, Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>OR BIOL 322, Intro to Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 111, Introduction to Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 111LAB, Chemistry Laboratory</td>
<td>1</td>
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<tr>
<td>CHEM 112, Introduction to Organic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 112LAB, Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENG 310, Technical Writing</td>
<td>4</td>
</tr>
<tr>
<td>FCSE 421, Adult Education</td>
<td>3</td>
</tr>
<tr>
<td>FCSC 342, Quantity Food Production and Service</td>
<td>4</td>
</tr>
<tr>
<td>FCSC 342LAB, Quantity Food Production and Service Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>FCSC 340, Management of Food Resources Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>FCSC 340LAB, Management of Food Resources Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>FCSC 341, Nutrition I</td>
<td>3</td>
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<tr>
<td>FCSC 348, Nutrition Interview</td>
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<tr>
<td>FCSC 440, Experimental Foods</td>
<td>3</td>
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<tr>
<td>FCSC 440LAB, Experimental Foods Laboratory</td>
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</tr>
<tr>
<td>FCSC 441, Nutrition and Aging</td>
<td>3</td>
</tr>
<tr>
<td>FCSC 442, Nutrition Assessment Laboratory</td>
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<tr>
<td>FCSC 443, Nutrition II</td>
<td>5</td>
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<tr>
<td>FCSC 444, Medical Nutrition Therapy</td>
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<tr>
<td>FCSC 448, Food Service Systems Management</td>
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<tr>
<td>MGT 380, Organizational Management</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 201, Human Physiology</td>
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</tbody>
</table>

Total 100

In addition to the above major requirements, The American Dietetic Association requires competence which may be satisfied by the following three courses: ANTH 130, Introduction to Cultural Anthropology (5) OR ANTH 357, Medical Anthropology: Cross-Cultural Perspectives on Health and Healing (4), and ECON 101, Economic Issues (5), and PSY 101, General Psychology (5). These courses may also meet breadth requirements at Central Washington University.

The requirement for CHEM 111, 111LAB, Introduction to Chemistry and Laboratory, may be met by satisfactorily completing CHEM 181, 181LAB and 182, 182LAB, General Chemistry and Laboratory. The requirement for CHEM 112, 112LAB, Introduction to Organic Chemistry and Laboratory, may be met by satisfactorily completing CHEM 361, 361LAB, 362, Organic Chemistry and Laboratory. The requirement for CHEM 113, 113LAB, Introduction to Biochemistry, may be met by
satisfactorily completing CHEM 431, 431LAB and 432, Biochemistry and Laboratory. The requirement for BIOL 201, Human Physiology, may be met by satisfactorily completing BIOL 355, 356, Human Anatomy and Physiology.

### Nutrition Science Specialization

The Nutrition Science specialization provides the training necessary to pursue advanced study in nutrition leading towards a career in nutrition research. This option also can be used for those students seeking admission to medical schools. In addition to the courses listed, a year of introductory physics is also required for admission to most medical schools. Pre-medical students should also maintain contact with the pre-medical advisor for current information. MATH 153, Pre-Calculus Mathematics I, or an equivalent course needs to be completed before a student is admitted to this specialization.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSN Core Requirements</td>
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<tr>
<td>BIOL 110</td>
<td>Basic Biology</td>
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<tr>
<td>BIOL 111</td>
<td>Plant Biology</td>
<td>5</td>
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<tr>
<td>BIOL 112</td>
<td>Animal Biology</td>
<td>5</td>
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<tr>
<td>BIOL 220</td>
<td>Cellular Biology</td>
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<tr>
<td>CHEM 181</td>
<td>General Chemistry</td>
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<td>CHEM 181LAB</td>
<td>General Chemistry Laboratory</td>
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<td>CHEM 182</td>
<td>General Chemistry</td>
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<td>CHEM 182LAB</td>
<td>General Chemistry Laboratory</td>
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<tr>
<td>CHEM 183</td>
<td>General Chemistry</td>
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<td>CHEM 183LAB</td>
<td>General Chemistry Laboratory</td>
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<td>CHEM 361</td>
<td>Organic Chemistry</td>
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<td>CHEM 362</td>
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<td>CHEM 361LAB</td>
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<td>CHEM 431</td>
<td>Biochemistry</td>
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<td>CHEM431LAB</td>
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<tr>
<td>CHEM 432</td>
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<tr>
<td>FCSN 341</td>
<td>Nutrition I</td>
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<tr>
<td>FCSN 440</td>
<td>Experimental Foods</td>
<td>3</td>
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<tr>
<td>FCSN 440LAB</td>
<td>Experimental Foods Laboratory</td>
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<tr>
<td>FCSN 442</td>
<td>Nutrition Assessment Laboratory</td>
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<td>FCSN 443</td>
<td>Nutrition II</td>
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<td>FCSN 444</td>
<td>Medical Nutrition Therapy</td>
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<tr>
<td>MATH 154</td>
<td>Pre-Calculus II</td>
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<tr>
<td>MATH 172</td>
<td>Calculus</td>
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<tr>
<td>BIOL 355</td>
<td>Human Anatomy and Physiology</td>
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<tr>
<td>BIOL 356</td>
<td>Human Anatomy and Physiology</td>
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<tr>
<td>FCSG 371</td>
<td>Consumer Awareness</td>
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<td>FCSC 472</td>
<td>Life Management</td>
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<td>FCSA 351</td>
<td>Socio-Cultural Aspects of Apparel</td>
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<td>FCSA 355</td>
<td>Consumer Textiles</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 231</td>
<td>Human Sexuality</td>
<td>4</td>
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</tbody>
</table>

#### Total Credits

| Total | 113 |

### Food Service Management Specialization

The Food Service Management specialization is designed for those interested in obtaining skills in managing a food service such as a University dining facility, a hospital, a public school food service, or a restaurant.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
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<tr>
<td>FSN Core Requirements</td>
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</tr>
<tr>
<td>ACCT 301</td>
<td>Financial Accounting Analysis</td>
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<tr>
<td>OR ACCT 251</td>
<td>Accounting I</td>
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<tr>
<td>IT 101</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 385</td>
<td>Business Communications and Report Writing</td>
<td>5</td>
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<tr>
<td>MKT 360</td>
<td>Principles of Marketing</td>
<td>5</td>
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<tr>
<td>MGT 380</td>
<td>Organizational Development</td>
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</tr>
<tr>
<td>HRM 381</td>
<td>Management of Human Resources</td>
<td>5</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics Micro</td>
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</tr>
<tr>
<td>FCSN 240</td>
<td>Quantity Food Production and Service</td>
<td>4</td>
</tr>
<tr>
<td>FCSN 240LAB</td>
<td>Quantity Food Production and Service Laboratory</td>
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</tr>
<tr>
<td>FCSN 340</td>
<td>Management of Food Resources</td>
<td>2</td>
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<tr>
<td>FCSN 340LAB</td>
<td>Management of Food Resources Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>FCSN 448</td>
<td>Food Service Systems Management</td>
<td>4</td>
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<tr>
<td>Department approved electives</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

#### Total Credits

| Total | 60-61 |

### Family and Consumer Sciences Education Minor

This minor does not meet endorsement requirements to teach family and consumer sciences.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCSF 234</td>
<td>Introduction to Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>FCSF 235</td>
<td>Relationships and Personal Development</td>
<td>3</td>
</tr>
<tr>
<td>FCSF 331</td>
<td>Child Development</td>
<td>3</td>
</tr>
<tr>
<td>FCSF 336</td>
<td>Parent Education and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>FCSA 351</td>
<td>Sociocultural Aspects of Apparel</td>
<td>3</td>
</tr>
<tr>
<td>FCSC 472</td>
<td>Life Management</td>
<td>5</td>
</tr>
<tr>
<td>FCSA 351</td>
<td>Socio-Cultural Aspects of Apparel</td>
<td>3</td>
</tr>
<tr>
<td>FCSA 355</td>
<td>Consumer Textiles</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 231</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Total Credits

| Total | 24 |

### Family and Consumer Sciences Vocational Teaching Major

This major satisfies the endorsement for Family and Consumer Sciences Education. Students wishing to obtain a teaching certificate in Family and Consumer Sciences Education will be required to complete the Professional Education Program, the Family and Consumer Sciences Vocational Teaching Major, student teach in a vocationally approved program, hold a valid first aid card with CPR, complete 200 hours of paid work experience in the last six years, and provide documentation of occupational safety.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
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<td>FCSG 205</td>
<td>FCS Entry Assessment</td>
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<tr>
<td>FCSG 405</td>
<td>FCS Exit Assessment</td>
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<tr>
<td>FSCS 371</td>
<td>Consumer Awareness</td>
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</tr>
<tr>
<td>FCSF 472</td>
<td>Life Management</td>
<td>5</td>
</tr>
<tr>
<td>FCSA 351</td>
<td>Socio-Cultural Aspects of Apparel</td>
<td>3</td>
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<tr>
<td>FCSA 355</td>
<td>Consumer Textiles</td>
<td>4</td>
</tr>
<tr>
<td>FCSF 231</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Total Credits

| Total | 111 |

### Nutrition Minor

This program is designed primarily for those individuals who wish for a more in-depth study of nutrition. This program is intended for use by students with majors in Fitness Management, Family Studies, Physical Education, Health Education, and
gerontology. This minor may also be of
interest for students in pre-professional
programs including pre-medicine, pre-
dentistry, pre-veterinary, and pre-physical
therapy. Courses in this minor may also be
used to satisfy requirements in other major
programs.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCSN 140LAB, Introduction to Foods</td>
<td>2</td>
</tr>
<tr>
<td>FCSN 245, Basic Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>FCSN 340, Management of Food</td>
<td>1</td>
</tr>
<tr>
<td>Resources Laboratory</td>
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<tr>
<td>FCSN 345, Developmental Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 446, Nutrition and Weight Control</td>
<td>3</td>
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<tr>
<td>Department Approved Electives</td>
<td>4</td>
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<tr>
<td>FCSC 490, Contracted Field Experience</td>
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</tbody>
</table>

Total 22

Family and Consumer Sciences

Courses / Family Studies

Courses

FCSF 231. Human Sexuality (4). The
biophysical, psychosocial and behavioral
aspects of sexuality with emphasis on
making responsible sexual decisions and
promoting healthy relationships.

FCSF 234. Introduction to Family Studies
(4). Origins and historical development of
families; cultural variations, contemporary
trends. Draws upon information and
insight from numerous root disciplines to
explore family structure and function.

FCSF 235. Relationships and Personal
Development (3). Development of
interpersonal relationships from initial
encounters to stable commitments. Major
focus on interaction patterns in intimate
relationships. FCSF 235 and PSY 235 are
equivalent courses. Students may not receive
credit for both.

FCSF 298. Special Topics (1-6).

FCSF 331. Child Development (3).
Developmental characteristics of children
with emphasis from conception to eight
years. Includes observation techniques.
FCSF 331 and EDEC 331 are equivalent
courses. Students may not receive credit
for both.

FCSF 332. Theories in Child Development
(4). Assists the student in formulating his
or her own general assumptions about the
nature of child development through
study of various theoretical viewpoints
and current issues. FCSF 332 and EDEC
332 are equivalent courses. Students may
not receive credit for both.

FCSF 333. Culture and Marriage (4). The
reciprocal relationships between the
biophysical and cultural components in
mating, nurturing and sexual access.
Cross-cultural patterns in marriage. FCSF
333 and ANTH 333 are equivalent courses.
Students may not receive credit for both.

FCSF 334. Family Problems and Mediation
(4). Problems arising out of the interaction
of family members. Mediation techniques,
family policy, and theories and ethics in
studying families.

FCSF 335. Divorce and Remarriage (3).
Prerequisite, FCSF 234 or permission.
Personal, family, and legal aspects of
divorce and remarriage; historical
antecedents and trends.

FCSF 336. Parent Education and Guidance
(3). Prerequisite, FCSF 234 or permission.
Study of parent education models and
methods of teaching parent education in
community and school settings.

FCSF 398. Special Topics (1-6).

FCSF 430. Principles and Practices of
Caregiving (3). Prerequisite, six credits of
family studies or permission. An
examination of developmental character-
istics and needs of individuals across the
life cycle as they relate to both familial and
non-familial caregiving. FCSF 430 and
EDEC 430 are equivalent courses. Students
may not receive credit for both.

FCSF 431. Principles of Sexuality Education
(3). Prerequisite, FCSF 231 or permission.
Principles and content for sex education in
school and community settings.

FCSF 433. Family Life Education (4).
Prerequisite, FCSF 234 or permission.
The broad objectives, trends, methods and
materials of family life education
programs in various settings.

FCSF 434. Ethnic Diversity in Families
(3). Prerequisite, FCSF 234 or permission.
A review of American families from a
comparative perspective. Examination of
similarities and differences across ethnic
groups based on national, cultural,
religious and racial identification.

FCSF 435. Family Gerontology (4).
Prerequisite, FCSF 234 or permission. A
review of the research literature on
families in later life, focusing on family
interactions and building family strengths.

FCSF 439. Families and Public Policy
(3). Prerequisite FCSF 334 or permission.
Impact of governmental policies on
families; policy implications of changes in
the structure and composition of families.

FCSF 490. Cooperative Education (1-12).
Prerequisite: by permission of department
chair. A contracted field experience with
business, industry, government, or social
service agency. Requires a cooperative
learning agreement. May be repeated for a
total of 20 credits.

FCSF 491. Workshop (1-6).

FCSF 498. Special Topics (1-6).

FCSF 499. Seminar (1-5).

Consumer Management Courses

FSC formerly HFCM. Students may not
receive credit for both.

FSC 298. Special Topics (1-6).

FSC 371. Consumer Awareness (3).
Consumer aids, protection, and
information; problems of quality and
quantity. Consumer decisions, how
consumption influences the market.

FSC 398. Special Topics (1-6).

FSC 472. Life Management (5). Study of
family in human ecosystem. Emphasis on
physiological and psychological well-
being and management of resources. Solve
practical family problems.

FSC 491. Workshop (1-6).

FSC 498. Special Topics (1-6).

FSC 499. Seminar (1-5). May be repeated.

Food and Nutrition Courses

FCSN formerly HOFN. Students may not
receive credit for both.

FCSN 140. Introduction to Foods (2).
Examination of scientific principles of food
preparation, function of ingredients,
effects of preparation techniques, and
nutritional considerations. Two hours
lecture per week.

FCSN 140LAB. Introduction to Foods
Laboratory (2). Corequisite, FCSN 140. $20
materials fee. Fours per week.

FCSN 245. Basic Nutrition (5). Fundamental
nutritional concepts as related to health.
Four hours lecture and one hour
discussion per week.

FCSN 298. Special Topics (1-6).

FCSN 340. Management of Food Resources
(2). Prerequisites, FCSN 140 and FCSN
245. Food management principles
involved in the planning, purchasing,
purchasing and serving of meals in relation
to nutritional needs, social needs, food
preferences and resources.

FCSN 340LAB. Management of Food
Resources Laboratory (1). Corequisite
FCSN 340. Demonstrations of food
management principles. $20 materials fee.

FCSN 341. Nutrition I (3). Prerequisite
CHEM 112 or CHEM 362. Nutritional
aspects of carbohydrates, proteins, lipids,
water and energy.

FCSN 342. Quantity Food Production and
Service (4). Prerequisite, FCSN 140,
Corequisite, FCSN 342LAB. Principles and
techniques of food production and food
safety for restaurants, health care facilities
and other institutions.
FCSN 443. Nutrition II (5). Prerequisites, FCSN 341, CHEM 113 or CHEM 372, BIOL 201 or BIOL 356 or permission. Effect of nutritional and physiological state on the regulation of carbohydrate, lipid, and protein metabolism. Metabolic and physiological role of vitamins and minerals.

FCSN 444. Medical Nutrition Therapy (5). Prerequisites, FCSN 443, BIOL 201 or BIOL 356, CHEM 113 or CHEM 372. Influence of nutritional deficiency on physiological problems; disease and medical nutritional therapy; nutrition and health management.

FCSN 445. Problems of Human Nutrition (3). Prerequisite, FCSN 245 or FCSN 341. Advanced study of normal nutrition; relationship of nutrition to disease.

FCSN 446. Sports Nutrition and Weight Control (3). Prerequisite, FCSN 245 or FCSN 445. Study of interrelationship of factors required for successful weight control; modification of diet, activity and behavior. Role of dietary factors in health and body function. FCSN 446 and EXSC 446 are equivalent courses. Students may not receive credit for both.

FCSN 447. Nutrition and Society (3). Prerequisite, FCSN 245 or FCSN 341. National and international nutritional problems and programs.

FCSN 448. Food Service Systems Management (4). Prerequisites, FCSN 140, FCSN 240 and MGT 380. Application of organizational management and principles to food-service systems including organizing, staffing, controlling, planning, marketing and leading.

FCSN 491. Workshp (1-6).

FCSN 492A Dietetic Practicum (10-18). Dietetic Internship Experience. May not be repeated. Credits may not be used to apply to the Master’s degree. Grade will be S or U. Permission required.

FCSN 492B Dietetic Practicum (10-18). Dietetic Internship Experience. May not be repeated. Prerequisite, successful completion of 492A. Credits may not be used to apply to the Master’s degree. Grade will be S or U. Permission required.

FCSN 492C Dietetic Practicum (10-18). Dietetic Internship Experience. May not be repeated. Prerequisite, CHEM 113 or CHEM 372. Study of the socio-cultural influences towards nutrition. Spanish recommended.

FCSN 492D Dietetic Practicum (10-18). Dietetic Internship Experience. May not be repeated. Prerequisite, CHEM 113 or CHEM 372. Study of the socio-cultural influences towards nutrition. Spanish recommended.

FCSN 499. Seminar (1-5). May be repeated.

Fashion Merchandising and Textiles Courses

FCSA formerly HOCT. Students may not receive credit for both.

FCSA 181. Fashion Show Production (1). Preparation, production, and evaluation of special fashion related events. Professional learning experiences will include modeling techniques, organization and directing procedures. Class may be repeated up to 3 credits.

FCSA 251. Visual Merchandising (3). Prerequisite FCSV 166, ADMG 201. Organization, planning, preparation and arrangement of effective visual merchandise sales presentation. One hour lecture and four hours lab per week. FCSA 251 and ME 251 are equivalent courses. Students may not receive credit for both.

FCSA 250. Fabric Technology (4). Basic clothing construction theory, techniques and teaching methods covering basic garment components: collars, sleeves, bodices, pleats, etc. All work is executed in full scale samples. Five hours laboratory per week. Formerly HOCT 250. Students may not receive credit for both.

FCSA 298. Special Topics (1-6).

FCSA 301. Principles of Fashion Merchandising (4). The development of the fashion industry, historical, economic and technological influences; apparel manufacturing, product development, fashion styles and markets. Formerly ME/FCSA 180. FCSA 301 and ME 301 are equivalent courses. Students may not receive credit for both.

FCSA 351. Sociocultural Aspects of Apparel (3). Recommended, PSY 101, SOC 107, and ANTH 107. The influence of cultural ideals and standards on dress. Clothing in relation to individual and group behavior patterns; personal and social meanings attributed to dress; and cultural patterns of technology, aesthetics, ritual, morality, and symbolism.


FCSA 355. Consumer Textiles (4). Prerequisite: a physical science with a lab. Study of natural and synthetic textiles: generic classification, fiber-forming substances, morphology, fabrication, finishing and dyeing processes, properties and performances. $10 material fee. Three-and-one-half hours lecture and one hour laboratory per week.

FCSA 379. Internship Planning (1-5). FCSA 379 and ME 379 are equivalent courses. Formerly HOCT 399.1. Students may not receive credit for more than one.
FCSA 389. Fashion Trend Analysis (4). Prerequisite, ME/FCSA 301 and FCFSH 166. Fashion forecasting; reflecting the acceptance or rejection of trends; analysis of socio-economic, demographic, media, and fashion influences. Students will have an opportunity to travel to market.

FCSA 428. History of Fashion (5). Historical changes in fashion and costume design from Egyptian period through Eastern civilization to present. Social, political and religious influences on fashions. FCSA 452 and TH 452 are equivalent courses. Students may not receive credit for both.

FCSA 429. International Merchandising (4). Prerequisite, ME 330. Emphasis on international retailing and global trade. Focus on cross-cultural differences, work environments, policies and regulations. FCPS A 485 and ME 485 are equivalent courses. Students may not receive credit for both.

FCSA 429. Retail Buying (4). Prerequisites ME 330. Principles of buying and selling merchandise; analysis of consumer demand, stock inventories and open-to-buy. FCPS A 489 and ME 489 are equivalent courses. Students may not receive credit for both.

FCSA 429. Workshop (1-6).

FCSA 429. Special Topics (1-6).

FCSA 429. Seminar (1-5).

Interior Design Courses

FCPS A 326. Curriculum and Evaluation in Family and Consumer Sciences Education Courses

FCG 305. Family and Consumer Sciences Education Courses

FCG 326. Curriculum and Evaluation in Vocational Family and Consumer Sciences (3). Instructional organization and classroom procedure in Vocational Family and Consumer Sciences programs. Formerly FCSE 425. Students may not receive credit for both.

FCG 326. Special Topics (1-6).

FCG 421. Adult Education (3). Prerequisite, permission of instructor. Introduction to working with adults as students, from theory to application. Program planning, implementation, and evaluation, including use of advisory groups.

FCG 422. Impact of Education Reform on Family and Consumer Sciences (2). Prerequisite, FCSE 326. Student will use program of study content knowledge to improve a community situation.

FCG 423. Methods and Materials of Teaching Family and Consumer Sciences (3). Prerequisites, FCSE 326 and EDCS 311. Application of the philosophy, purposes, teaching techniques, and assessment of family and consumer sciences programs in the secondary schools. Formerly FCSE 325. Students may not receive credit for both.

FCG 491. Workshop (1-6).

FCG 498. Special Topics (1-6).

FCG 499. Seminar (1-5).

General Courses

FCG 305. Family and Consumer Sciences Student Leadership (1). Prerequisites, advisor recommendation, chair permission. Students engage in leadership development through identifying, organizing, conducting and assessing course activities. Elective credit for major. May be repeated.

FCG 305. Family and Consumer Sciences Student Leadership (1). Prerequisites, advisor recommendation, chair permission. Students engage in leadership development through identifying, organizing, conducting and assessing course activities. Elective credit for major. May be repeated.

FCG 405. FCS Exit Assessment (1). This course consists of self-assessment and assessment by the faculty of writing skills, speaking skills, visual/graphic skills, and knowledge of theory and research.

FCG 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. Formerly FCSE 325. Students may not receive credit for both.

FCG 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. Formerly FCSE 325. Students may not receive credit for both.
Fashion Merchandising Internship: Prerequisite, FCSA/ME 379. Available summer only - 10 credit minimum. FCSG 490 and ME 490 are equivalent courses. Students may not receive credit for both.

FCSG 492. Teaching Experience in Family and Consumer Sciences (2). Prerequisite, permission of instructor. Supervised teaching experience in a specific area of Family and Consumer Sciences. May be repeated.

FCSG 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

Undergraduate Courses/Programs on Reserve

The following courses are on reserve and may be offered subject to program needs: FCSA 150. Clothing Construction I (3); FCSA 380. Pattern Drafting (4); FCSA 383. Problem Fabric in Clothing Construction (3); FCSA 384. Fitting Analysis (2); FCSA 386. Dress Design by Draping (4); FCSA 387 Tailoring (3); FCSA 388. Advanced Pattern Drafting (4); FCSA 482. Computer Pattern Making (2); FCSA 484. Advanced Tailoring (3); FCSA 486. Pattern Engineering (5); FCSA 487. Couture Apparel Techniques (3); FCSA 488. Fashion Design Portfolio (5); FCSA 432. Child Development Research (3).

FASHION MERCHANDISING

Contact Vicki Shaffer-White, Family and Consumer Sciences, Michaelson 326, or Bill Chandler, Information Technology and Administrative Management, Shaw Smyser 254.

General Information

Fashion Merchandising is an interdepartmental major leading to a Bachelor of Science degree. It is administered jointly by the Department of Family and Consumer Sciences, and the Department of Information Technology and Administrative Management. The curriculum provides the necessary skills to work in the fashion merchandising field as a fashion buyer, a fashion retailer, or a fashion merchandise manager.

Courses are primarily selected from Administrative Management, Marketing Education, Information Technology, and Family and Consumer Sciences, providing information relating to the production, distribution, and consumption of clothing and textiles. Students will gain practical work experience in agencies which deal with fashion merchandise during summer quarter internships.

Students enrolled in the major are required to consult regularly with a faculty advisor. All prerequisites must be fulfilled except in cases of special permission. For additional information please see either the Information Technology and Administrative Management or Family and Consumer Sciences Department Chairs.

Admission Policy

1. The major application form must be completed, then signed by a department advisor and Chair. Students must have a university-level cumulative GPA of at least 2.3 for full admission to a departmental major.

2. Students must have a university-level cumulative GPA of at least 2.3 for full admission to a departmental major.

Bachelor of Science

Fashion Merchandising Major

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 146, Basic Accounting</td>
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</tr>
<tr>
<td>FCSH 166, Applied Creativity</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 201, Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 271, Business Math Applications</td>
<td>4</td>
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<tr>
<td>ADMG 385, Business Communications and Report Writing</td>
<td>5</td>
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<td>ECON 101, Economic Issues OR</td>
<td>5</td>
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<tr>
<td>ECON 201, Micro/Econ 202 Macro</td>
<td>5</td>
</tr>
<tr>
<td>FCSA 280, Basic Sewing Techniques</td>
<td>3</td>
</tr>
<tr>
<td>FCSA/ME 301, Principles of Fashion Merchandising</td>
<td>4</td>
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<tr>
<td>ME 330, Principles of Retailing</td>
<td>4</td>
</tr>
<tr>
<td>ME 340, Principles of Selling</td>
<td>4</td>
</tr>
<tr>
<td>ME 350, Principles of Advertising</td>
<td>4</td>
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<tr>
<td>FCSA 351, Sociocultural Aspects of Dress</td>
<td>3</td>
</tr>
<tr>
<td>FCSA 353, Apparel Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>FCSA 355, Consumer Textiles</td>
<td>4</td>
</tr>
<tr>
<td>FCSA/ME 379, Internship Planning</td>
<td>1</td>
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<tr>
<td>FCSA 389, Fashion Trend Analysis</td>
<td>4</td>
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<tr>
<td>FCSA 452, History of Fashion</td>
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<tr>
<td>FCSA/ME 485, International Merchandising</td>
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<tr>
<td>FCSA/ME 489, Retail Buying</td>
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<tr>
<td>FCSG/ME 490, Cooperative Education</td>
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<td>(Summer Only)</td>
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<td>ME 467, Retail Management</td>
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<td>Electives</td>
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<tr>
<td>ADMG 310, Business Professional Development</td>
<td>3</td>
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<tr>
<td>COM 110, Oral Communications Skills</td>
<td>3</td>
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<tr>
<td>COM 208, Beginning Newswriting and Reporting</td>
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<td>FCSA 181, Fashion Show Production</td>
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<tr>
<td>FCSA/ME 251, Visual Merchandising</td>
<td>3</td>
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<tr>
<td>HRM 381, Management of Human Resources</td>
<td>5</td>
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<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
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<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
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<td>IT 258, Spreadsheet Applications</td>
<td>3</td>
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<td>IT 288, Business Presentation Applications</td>
<td>2</td>
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<tr>
<td>ME 461, Advertising and Sales Promotion</td>
<td>5</td>
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<tr>
<td>MKT 360, Principles of Marketing</td>
<td>5</td>
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<td>MKT 369, Marketing Research</td>
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<td>FCSG 305 Leadership</td>
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<tr>
<td>UNIV 309, Service Learning</td>
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</tr>
</tbody>
</table>

Total 91
**FLIGHT TECHNOLOGY**

Flight Technology Center
807 Elmview Road

**Faculty**

Program Coordinator: Dale Wilson

**Associate Professors**

Teresa Sloan
Dale Wilson

**Assistant Professor**

Amy Hoover

**Lecturer**

Autumn Cooper, Academic Advising

**FLIGHT TECHNOLOGY**

**General Program Information**

Students must apply for acceptance into the Flight Technology major. Application will be reviewed upon acceptance to CWU. Admission decisions are based on a number of factors including grade point average, SAT/ACT scores, letters of recommendation, financial capability, and a written statement of purpose, as outlined in the Flight Technology Application form. New TSA regulations require proof of citizenship for pilots.

**Bachelor of Science**

**Flight Technology Major with Specialization**

The Flight Technology major prepares graduates for entry level careers and leadership roles in the aviation community. Students select one of five technical specializations leading to a Bachelor of Science degree in Flight Technology. The curriculum in Flight Technology is designed to provide a solid foundation in the liberal arts as well as a thorough education and training in a technical discipline. All FLT courses are by permission. Prerequisites may be waived for students enrolled in the Aviation Management or the Aviation Maintenance Management specializations. Special program rules and procedures as stated in the CWU Flight Technology / Midstate Aviation, Inc. Standard Operating Procedures (SOPs) apply to the Flight Officer, Commercial Pilot, and Airway Science Aircraft Systems Management specializations.

**Flight Officer Specialization**

Completion of this specialization assists students to prepare for professional pilot positions within the airline industry. A minor is required of students graduating with this specialization. The following certificates and ratings are required for graduation: Private Pilot Certificate, Instrument Rating, Commercial Pilot Certificate, Certified Flight Instructor, and Multiengine Rating. Flight training fees are paid by the student and will be in addition to normal University tuition and fees. Students enrolled in the Flight Officer specialization are eligible to complete advanced multiengine simulator training and may qualify for approved airline internships, and after graduation, the Direct Hire program with Horizon Airlines. To graduate with this specialization, students must complete the Commercial Pilot Certificate*, Multiengine Rating and Certified Flight Instructor Certificate at Central Washington University’s approved flight training operator at Bowers Field in Ellensburg, Washington. Once a student has enrolled at Central Washington University, all subsequent flight training must be conducted by Central Washington University’s approved flight training operator at Bowers Field in Ellensburg, Washington, and shall be done in a manner approved by the FAA under FAR Part 141.

*except as provided in approved articulation agreements

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>FLT 101</td>
<td>Private Pilot Flight Laboratory I</td>
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<tr>
<td>FLT 102</td>
<td>Private Pilot Flight Laboratory II</td>
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<td>FLT 103</td>
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<td>FLT 141</td>
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<tr>
<td>FLT 211</td>
<td>Meteorology for Pilots</td>
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<td>FLT 221</td>
<td>Aircraft Systems I</td>
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<td>FLT 232</td>
<td>History of Aviation</td>
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<td>Instrument Flight I</td>
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<tr>
<td>FLT 242</td>
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<td>FLT 305</td>
<td>Commercial Pilot Flight Laboratory II</td>
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<td>Human Factors in Flight</td>
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<tr>
<td>FLT 348</td>
<td>Air Carrier Operations</td>
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<td>FLT 352</td>
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<tr>
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</tbody>
</table>

**Total** 89

**Commercial Pilot Specialization**

Completion of this specialization assists students to prepare for commercial aviation employment opportunities. A minor is required of students graduating with this specialization. The following certificates and ratings are required for graduation: Private Pilot Certificate, Instrument Rating and Commercial Pilot Certificate. Flight training fees are paid by the student and will be in addition to normal University tuition and fees. To graduate with this specialization, students must complete the Commercial Pilot Certificate* at Central Washington University’s approved flight training operator at Bowers Field in Ellensburg, Washington. Once a student has enrolled at Central Washington University, all subsequent flight training must be conducted by Central Washington University’s approved flight training operator at Bowers Field in Ellensburg, Washington, and shall be done in a manner approved by the FAA under FAR Part 141.

*except as provided in approved articulation agreement

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>FLT 201</td>
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<td>FLT 202</td>
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<td>FLT 203</td>
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<tr>
<td>FLT 211</td>
<td>Meteorology for Pilots</td>
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<td>FLT 221</td>
<td>Aircraft Systems I</td>
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<td>Aviation Weather Services</td>
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<td>FLT 319</td>
<td>Applied Aerodynamics for Pilots</td>
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<td>Aircraft Systems II</td>
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<td>FLT 323</td>
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<td>FLT 333</td>
<td>Air Transportation</td>
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<td>FLT 352</td>
<td>Multiengine Principles</td>
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<td>FLT 354</td>
<td>Commercial Pilot</td>
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<td>FLT 445</td>
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<td>FLT 489</td>
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<td>Department approved electives</td>
<td></td>
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</table>

**Total** 89
Aviation Management Specialization
Coursework in the Aviation Management specialization will prepare students for a variety of administrative and management positions in the aviation community. Management career options related to aviation activities, such as airport manager, general operations manager and air carrier management exist in the industry.

Required Courses Credits
IT 101, Computer Applications .................. 3
ADMG 385, Business Communications and Report Writing .................. 5
IT 288, Business Presentation Applications 2
IT 389, Desktop Publishing .................. 3
COM 345, Business and Professional Speaking .................. 4
IET 160, Computer Aided Design ............... 4
MATH 130, Finite Mathematics I ............... 5
ACCT 301, Financial Accounting Analysis. 5
ECON 201, Principles of Economics, Micro 5
FIN 370, Introductory Financial Management .................. 5
HRM 361, Management of Human Resources ........... 5
MGT 380, Organizational Management ......5
MGT 481, Organizational Behavior ............ 5
BUS 221, Introductory Business Statistics ........ 5
POSC 320, Public Administration ............ 5
FLT 141, Principles of Flight I ................ 4
FLT 142, Principles of Flight II ................. 4
FLT 330, Aviation Law .................. 3
FLT 333, Air Transportation .................. 4
FLT 335, Aviation Management ................ 3
FLT 417, Aviation Safety Management .......... 3
Department approved CS electives ................ 4

Total 108

Airway Science Specialization
The Airway Science specializations are designed to prepare graduates for entry level positions within the aviation industry for the Federal Aviation Administration. There are two specializations in the area of Airway Science: the Aircraft Systems Management Specialization and the Airway Management Specialization. These specializations offer a curriculum based upon a strong foundation in the liberal arts in addition to technical competence. The curriculum is disciplined and structured to provide the student with a broad perspective of an administrative and management career in aviation, including law, economics, and management principles. The curriculum is designed to provide a broad perspective of the administrative and management positions within the aviation industry for the Federal Aviation Administration. Students will be prepared for entry-level positions in airway science, airway management, and airway operations.

Required Courses Credits
IT 101, Computer Applications .................. 3
CS 110, Programming Fundamentals I ........ 4
CS 111, Programming Fundamentals II OR Department approved CS elective ........... 4
EET 221, Basic Electricity .................. 3

Total 123
Flight Technology Courses


FLT 102. Private Pilot Flight Laboratory II (1). Prerequisite, FLT 101, corequisite, FLT 141. Plan and conduct cross-country flights and perform short-field and soft-field takeoffs and landings.

FLT 103. Private Pilot Flight Laboratory III (1). Prerequisite, FLT 102. Perform private pilot operation at a standard to obtain the private pilot certificate.

FLT 150. Introduction to Aviation (1). An overview of the aviation program, industry, career options and opportunities. Grade will be S or U.

FLT 141. Principles of Flight I (4). Corequisite, FLT 221. Basic knowledge of airplanes and their systems, aerodynamics, flight safety, airports, aeronautical charts, airspace, radio communications, air traffic control services, and aviation regulations. Formerly FLT 151/FLT 151.1. Students may not receive credit for both.

FLT 142. Principles of Flight II (4). Prerequisite, FLT 141. Corequisite FLT 211. Basic knowledge of airplane performance and loading, preflight planning including weather analysis, visual and radio (VOR/ADF) navigation, flight physiology, and aeronautical decision making. Preflight planning for cross-country flights. Formerly FLT 152/152.1. Students may not receive credit for both.

FLT 201. Instrument Pilot Flight Laboratory I (1). Prerequisite, Private Pilot Certificate. Attitude control by instrument reference only, use of full and partial panel, and radio navigation.


FLT 211. Meteorology for Pilots (4). Corequisite, FLT 142. Meteorological processes and weather hazards peculiar to the flight environment. Formerly FLT 210. Students may not receive credit for both.

FLT 221. Aircraft Systems I (4). Corequisite, FLT 141. Light training aircraft engines, propellers and engine systems, flight controls, fuel systems, instrumentation, tires, wheels and brakes. Formerly 220/220.1. Students may not receive credit for both.

FLT 232. History of Aviation (2). Prerequisite, ENG 101. A brief overview of the major developments in the history of powered flight. Formerly FLT 132. Students may not receive credit for both.


FLT 296. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

FLT 298. Special Topics (1-5).

FLT 301. Certified Flight Instructor Laboratory (1). Prerequisite, Commercial Pilot Certificate, FLT 358. Analyze and perform maneuvers from the right seat. Demonstrate proficiency and instructional knowledge to FAA practical test standards.

FLT 304. Commercial Pilot Flight Laboratory I (1). Prerequisite, FLT 203. Plan and conduct VFR cross-country flights using pilotage, dead reckoning, and radio navigation. Night flight operations. Formerly FLT 204. Student may not receive credit for both.

FLT 305. Commercial Pilot Flight Laboratory II (1). Prerequisite, FLT 304. Operation of complex aircraft and basic knowledge of advanced commercial maneuvers. Formerly FLT 205. Student may not receive credit for both.

FLT 306. Commercial Pilot Flight Laboratory III (1). Prerequisite, FLT 305. Perform flight maneuvers and procedures to FAA commercial pilot practical test standards. Formerly FLT 206. Student may not receive credit for both.

FLT 312. Aviation Weather Services (3). Corequisite FLT 242. Comprehensive analysis of weather service for flight crews, including interpretation of applicable alpha-numeric and graphic weather reports and forecasts. Formerly FLT 311, students may not receive credit for both.

FLT 319. Applied Aerodynamics for Pilots (3). Prerequisite, FLT 242. Theories of flight and flight factors including airfoil shape, drag, velocity, lift and thrust, stability and control.

FLT 323. Advanced Navigation (2). Prerequisite, FLT 354. Advanced navigation systems, their function, operation and application. Formerly FLT 321. Students may not receive credit for both.

FLT 330. Aviation Law (3). Prerequisite, Instrument Rating or junior standing. Basic understanding of aviation law, the legal system, the principles of law, and how they may be applied to aspects of air transportation.

FLT 331. National Airspace System (3). The national air traffic control system, control procedures, the integration of centers, approach communications, navigation procedures, radar operations, and facilities.

FLT 333. Air Transportation (4). Prerequisite, ENG 101. The air transportation system including facilities, regulations, problems encountered in commercial air transportation, airline operations, economic and social considerations.

FLT 334. Airport Management (3). Airport operations and management, including analysis of the role of the airport manager in planning, finance, and administration; public relations, social, political, and environmental considerations; operational requirements and facilities maintenance.

FLT 335. Aviation Management (3). Management of aviation activities, manpower, facilities, regulations, and flight operations.

FLT 336. Air Cargo Operations (3). Domestic and international air cargo operations, the air freight market, rates and tariffs, terminal facilities, competition and future prospects.

FLT 337. Aviation Physiology and Survival (3). Prerequisite, Private Pilot Certificate. Physiological aspects of flight crew performance, including effects of high altitude, accelerations, disorientation, and fatigue. Normally requires altitude chamber flight. Basic introduction to wilderness survival.

FLT 339. International Air Transportation (3). Current problems in international air transportation operations, regulations, law, and factors affecting globalization of this industry.


FLT 348. Air Carrier Operations (3). Prerequisite, FLT 354. Dispatch procedures, weather analysis (real time), flight operations, and crew utilization. Formerly FLT 338. Students may not receive credit for both.

FLT 352. Multiengine Principles (2). Prerequisite, FLT 354. Multiengine aircraft systems and operations, normal and emergency procedures and flight characteristics.


FLT 356. Fundamentals of Flight Instruction (4). Prerequisites, Instrument Rating and Commercial Pilot Certificate Course Stage V. Instructional knowledge to teach required subject matter to include recognition, analysis and correction of common student errors. Formerly FLT 357/357.1. Students may not receive credit for both.

FLT 375. Mountain and Canyon Flying (2). Prerequisites: FLT 141, FLT 142, FLT 211 or permission and private pilot license. Synthesis of fundamental concepts and practices including navigation in mountainous terrain, aircraft performance and density altitude, canyon flying and airport operations in constricted areas, mountain and canyon meteorology, emergencies, and flight safety. May be repeated to a total of 4 credits.


FLT 417. Aviation Safety Management (3). Prerequisite, Commercial Pilot Certificate Course Stage IV. Fundamentals of aviation safety management, including evaluation of specific hazards peculiar to the flight environment. Formerly FLT 317. Students may not receive credit for both.

FLT 422. Aircraft Systems II (2). Prerequisites, FLT 322 and FLT 354. Turbine engines and turboprop aircraft systems. Formerly FLT 420. Students may not receive credit for both.

FLT 423. Aircraft Systems IV (3). Prerequisite, FLT 422. Transport category aircraft systems. Formerly FLT 421. Students may not receive credit for both.

FLT 431. Flight Simulator Instructor (2). Prerequisite, FLT 358. Instruction of basic instrument flying using single and multiengine ground trainers.

FLT 434. Airport Operations (3). Prerequisites, FLT 333 and FLT 334.

FLT 438. Planning and Design of Airports (4). Prerequisite, FLT 434. Methodologies necessary to the planning and design of airports.

FLT 444. Multiengine Simulator, EFIS (2). Prerequisites, admission to the Flight Officer emphasis or the Aircraft Systems Management emphasis, FLT 352, and Commercial Pilot Certificate Course Stage V complete. Introduction to and familiarization of electronic flight instrument systems, use of flight director, and auto pilot. Beginning crew coordination.

FLT 445. Multiengine Simulator, Turboprop (2). Prerequisites; admission to the Flight Officer or the Aircraft Systems Management emphasis, FLT 422, FLT 444, and Multi engine Rating. Operation of turbine powered aircraft; CRM, and FMS.


FLT 459. Advanced Flight Instruction, Multiengine (2). Prerequisites, ME Rating and CFI certificate. Principles and methodology of teaching multiengine flight.

FLT 475. Specialty Flight Laboratory (1). Prerequisites, FAA Pilot Certificate or equivalent and permission. Instruction in the listed specialties. Flight hours will vary with specialty. A minimum of 12 flying hours normally required for credit except as approved by Flight Technology. Hang gliders are specifically omitted. May be repeated.

A. Single Engine Seaplane
B. Multiengine Seaplane
C. Helicopters
D. Mountain Flying
E. Aerobatics
F. Other by advisement and permission

FLT 489 Pilot Performance (1). Prerequisites, FLT 445 and permission of instructor. Oral and skill demonstration in the simulator covering those areas required of graduates entering an aircraft pilot career. Formerly FLT 488. Students may not receive credit for both.

FLT 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

FLT 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

FLT 498. Special Topics (1-5).

FLT 499. Seminar (1-5). May be repeated.
FOREIGN LANGUAGES

Faculty
Chair: Joshua Nelson
Language and Literature Building 102

Professors
Kelton W. Knight, French
Natalie Lefkowitz, Spanish, Applied Linguistics
Stella Moreno, Spanish
Joshua Nelson, Japanese
Rocio N. Tolman, Spanish

Associate Professors
Rodney Bransdorfer, Spanish, Applied Linguistics
Dieter Romboy, German
Nathalie Kasselis-Smith, Spanish

Assistant Professors
A. Bret Cummins, American Sign Language
Dinara Georgeoliani, Russian
Liuxi Meng, Chinese
Eric Mayer, Spanish
Alex Young, American Sign Language

General Departmental Information
The Department offers four Bachelor of Arts degrees. Specializations and minors are available in Chinese, French, German, Japanese, Russian and Spanish. Students interested in teachers certification may complete a major or minor in the target language(s) listed above. Course offerings provide (1) an introduction to the nature of the language as a facet of culture; (2) an acquaintance with the literature and culture of the aforementioned languages; and (3) proficiency in speaking, comprehension and writing. A fully equipped computer language laboratory provides practice in skill building and proficiency through the use of language software programs.

For non-majors or minors, the first and second year sequences of the Foreign Languages Department are designed to provide basic proficiency in a foreign language, and the values of a liberal education. Such proficiency, combined with some other special knowledge or skill, can also lead to many exciting vocational opportunities.

The Department recommends that all majors include some organized study in a foreign country where their major language is spoken. Interested students are reminded that there are various study-abroad programs and exchanges administered by the Director of International Studies and Programs. Credit earned in programs abroad will normally count toward satisfaction of the major or minor requirements, but the student should see a foreign language advisor before enrolling in a study abroad program. Credit may also be given for special projects completed while traveling in a foreign country. For information on the requirements and types of projects acceptable, contact the Department. Foreign language majors and minors are encouraged to take courses in related disciplines. Please consult with a major advisor. For more information, visit our Web site at http://www.cwu.edu/~forlang

Admission to Department Programs
1. Students planning to major or minor in a foreign language must consult with an advisor in the Foreign Languages Department for details of admission requirements, a student handbook, and an application.
2. Potential majors must have a grade point average of at least 3.0 in 2nd-year courses in the language.
3. Potential minors must have a grade point average of at least 2.5 in 2nd-year courses in the language.
4. The Foreign Languages Department reserves the right to modify these requirements as the needs of the Department change and any changes would supersede policies previously published in this catalog.

Departmental Standards
Students must earn a minimum grade of C in each course allowed toward fulfilling the major and/or minor.

Departmental Honors
To earn honors in a foreign language, student must be a Foreign Languages major, at least a first quarter senior, have a GPA of 3.4 in the foreign language in question. Student must apply in writing to the Department Chair. For details on honors and procedures, please see the Foreign Languages Student Handbook, available in the department office, or contact a member of the Foreign Languages faculty.

Bachelor of Arts
Foreign Language Major with Specialization
Chinese       French
German       Japanese
Russian       Spanish

Only courses numbered 200 and above will count toward a major or minor. For students with sufficient preparation, the 200 level sequence may be challenged. Students pursuing either a Foreign Language Major, or a Foreign Language: Teaching Major, in Chinese, French, German, Japanese or Russian, will be required to earn at least 20 transferable upper division credits in a study abroad program where the courses are taught in the target language. Those pursuing a Broad Area Major in the aforementioned languages will be required to earn at least 35 such credits, and Broad Area Majors in Spanish will be required to earn 10. Students planning to study abroad must see their advisor prior to departure to ensure the applicability of the proposed course of study.

Foreign Language Major
This major requires a minor.

Required Courses

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<th>Course</th>
<th>Credits</th>
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<td>FNLA 101, Introduction to Foreign Language</td>
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<tr>
<td>FNLA 201, Intermediate Modern Language</td>
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</tr>
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Foreign Language Broad Area Major
This major does not require a minor. At least 10 credits must be earned abroad, in a country where the target language is spoken.

Required Courses

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>Electives in language and/or literature</td>
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</table>

Foreign Language: Teaching Major
This major satisfies the endorsement for Designated World Language.

This major requires a minor and is open only to students pursuing a teaching certificate. Students taking this major are required to complete the professional education program requirements offered through the Department of Education.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>301, Introduction to Literature</td>
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<tr>
<td>310, Civilization and Culture</td>
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<tr>
<td>Total</td>
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</table>

Total 111
FOREIGN LANGUAGES

Foreign Language: Teaching

Broad Area

This major satisfies the endorsement for Designated World Language.

This major does not require a minor and is open to students pursuing a teaching certificate. At least 10 credits must be earned abroad, in a country where the target language is spoken. Students taking this major are required to complete the professional education program requirements offered through the Department of Education.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Completion of the above Foreign Language: Teaching Major courses</td>
<td>54</td>
</tr>
<tr>
<td>Electives in language and/or literature</td>
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Total | 60 |

Foreign Language Minor

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<thead>
<tr>
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<td>Chinese</td>
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<td>German</td>
<td>Japanese</td>
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<tr>
<td>Russian</td>
<td>Spanish</td>
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Courses must be numbered 200 or above.

<table>
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<tr>
<th>Required Courses</th>
<th>Credits</th>
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</tbody>
</table>

Total | 27 |

Foreign Language: Teaching

Minor

<table>
<thead>
<tr>
<th>Language</th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>French</td>
</tr>
<tr>
<td>German</td>
<td>Japanese</td>
</tr>
<tr>
<td>Russian</td>
<td>Spanish</td>
</tr>
</tbody>
</table>

This minor is open only to students pursuing a teaching certificate. Courses must be numbered 200 or above.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>251, 252, 253</td>
<td>15</td>
</tr>
<tr>
<td>310</td>
<td>3</td>
</tr>
<tr>
<td>341</td>
<td>3</td>
</tr>
<tr>
<td>343 or 345</td>
<td>2</td>
</tr>
<tr>
<td>FNLA 481</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Total | 31 |

American Sign Language

Courses

ASL 151, 152, 153. American Sign Language (5). Courses must be taken in sequence. Conversational approach with intensive visual/manual drill. Firm foundation in basic signs and structural principles of the language. Students may not receive credit for both ASL 151, 152, 153 and EDSE 427, 428, 429.

ASL 251, 252, 253. Second Year American Sign Language (5). Courses must be taken in sequence. Prerequisite, successful completion of ASL 153 or equivalent course, demonstration of ASL 153 equivalent skills, or permission of the instructor. How signers construct meaning and messages in ASL, grammatical variation, and discourse strategies is covered with special focus on increasing non-manual behavior.

Foreign Language Courses

FNLA 111, 112, 113. Foreign Languages-Special Instruction (3 or 5). A foreign language not usually taught by the Department. Offerings vary according to student demand, availability of staff, or of instructional programs. FNLA 111 or the sequence may be repeated for credit in different languages. Interested students should contact the Foreign Languages Department for available offerings.

FNLA 210. Intercultural Experiences (2). A comparison of life, language and culture in the United States and other parts of the world. Grade will be S or U.

FNLA 298. Special Topics (1-6).

FNLA 398. Special Topics (1-6).

FNLA 401. Introduction to Romance Linguistics (3). Prerequisite, two years of a romance language, or equivalent. Analysis of the phonology, morphology and syntax of the romance languages. Credits to be counted toward either French or Spanish major or minor.

FNLA 481. Methods and Materials for the Teaching of Modern Foreign Languages (4). Prerequisite, at least two 300-level courses or equivalent in a foreign language. Emphasizes the practical concerns of second and foreign language instruction. Explores as a group the theory underlying approaches incorporated into personalized teaching styles. Formerly FNLA 428.

FNLA 482. Applied Linguistics: Foreign Language Acquisition (4). Prerequisite, FNLA 481, or departmental approval. This course explores second and foreign language acquisition/learning from an applied linguistics perspective. The focus of this course will be on the learner.

FNLA 483. Sociolinguistics (4). Prerequisite, ANTH/ENG 180 or 480, ANTH 381, or FNLA 481 or departmental approval. Concepts and methods of sociolinguistic analysis in first and second languages. Will examine differences among cultures in the relationship between language usage and inequality. FNLA 483 and ANTH 483 are equivalent courses. Students may not receive credit for both.

FNLA 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

FNLA 491. Workshop (1-6). Prerequisite, departmental permission. May be repeated for credit.

FNLA 492. Practicum (1). Prerequisite, FNLA 481 and FNLA 482 or FNLA 483, or departmental approval. Provides student with a supervised foreign language (FL) teaching opportunity designed to sharpen awareness of the technical, personal and practical elements involved in effective FL teaching through regular observations of FL and second language (L2) classes, daily experience in the FL class, and seminar discussion of issues and problems related to FL and L2 teaching.

FNLA 496. Individual Study (1-6).

FNLA 498. Special Topics (1-6).

Chinese Courses

CHIN 141, 142, 143. Chinese for Western Language Speakers (5,5,5). This course is designed for students whose native tongues are western languages and who have not previously been exposed to the Chinese character writing system.

CHIN 151, 152, 153. First Year Chinese (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Firm foundation in basic structural principles of the language.

CHIN 251, 252, 253. Second Year Chinese (5,5,5). Courses must be taken in sequence. Prerequisite, CHIN 153 or equivalent. Graduated readings in modern Chinese writings with discussion conducted in Chinese.

CHIN 298. Special Topics (1-6).

CHIN 301. Chinese Literature in Translation (4). Prerequisite, grade of C- or better in English 101. A survey of Chinese literature in translation. CHIN 301 and AST 301 are equivalent courses. Students may not receive credit for both courses.
CHIN 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, CHIN 253 or equivalent. Should be taken in sequence.

CHIN 343, 344. Intermediate Conversation (2,2). Prerequisite, CHIN 253 or equivalent. Should be taken in sequence.

CHIN 398. Special Topics (1-6).

CHIN 496. Individual Study (1-6). Prerequisite, permission of instructor.

CHIN 498. Special Topics (1-6).

French Courses

FR 151, 152, 153. First Year French (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Firm foundation in the basic structural principles of the language.

FR 251, 252, 253. Second Year French (5,5,5). Courses must be taken in sequence. Prerequisite, FR 153 or equivalent. Thorough review of French grammar and graduated readings in modern French prose with discussions conducted in French.

FR 298. Special Topics (1-6).

FR 301. Introduction to French Literature (3). Prerequisite, FR 253 or equivalent. This course is designed as a transition course to prepare students for the advanced literature courses. Appreciation of literature and methods of analysis will be taught on a basic level through the careful examination of specific texts.

FR 310. French Civilization and Culture (3). Prerequisite, FR 253 or equivalent. Major aspects of French culture, philosophy and way of life will be emphasized.

FR 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, FR 253 or equivalent. Should be taken in sequence with FR 441.

FR 343, 344. Intermediate Conversation (2,2). Prerequisite for FR 343 is FR 253 or equivalent. Prerequisite for FR 344 is FR 343 or equivalent, or departmental approval.

FR 385. French Phonetics (3). Prerequisite, French 341, or departmental approval. Designed to show how French is pronounced, and how to attain accuracy which approximates native-like pronunciation as much as possible. Provides an opportunity to improve pronunciation.

FR 398. Special Topics (1-6).

FR 429. 18th Century French Literature (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval. The Enlightenment, with particular emphasis on Montesquieu, Diderot, Voltaire and Rousseau.

FR 441. Advanced Composition and Grammar (3). Prerequisite, FR 341 and 342, or departmental approval.

FR 442. Translation and Interpretation (2). Prerequisite, FR 342 or equivalent, or departmental approval.

FR 450. Contemporary French Novel (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval. From Proust to Camus.

FR 455. French Poetry Through the Ages (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval. Selected masterpieces from the Middle Ages to the present.

FR 460. French Cinema (3). Prerequisite, at least two 300-level French courses or departmental approval. Students will view and analyse seven celebrated French films as a backdrop to the discussion of the history of French cinema.

FR 491. Workshop (1-6). Prerequisite, departmental permission. May be repeated for credit.

FR 496. Individual Study (1-6). Prerequisite, permission of instructor.

FR 498. Special Topics (1-6).

German Courses

GERM 151, 152, 153. First Year German (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Firm foundation in the basic structural principles of the language.

GERM 251, 252, 253. Second Year German (5,5,5). Courses must be taken in sequence. Prerequisite, GERM 153 or equivalent. Graduated readings in modern German prose with discussion conducted in German. Thorough review of German grammar.

GERM 298. Special Topics (1-6).

GERM 301. Introduction to German Literature (3). Prerequisite, GERM 253 or equivalent. Selected pieces of German literature characteristic of the Middle Ages to the present.

GERM 310. German Civilization and Culture (3). Prerequisite, GERM 253 or equivalent. The background, development, and especially the present-day situation of the German-speaking areas of the world.

GERM 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, GERM 253 or equivalent. Should be taken in sequence with GERM 441.

GERM 343, 344. Intermediate Conversation (2,2). Prerequisite for GERM 343 is GERM 253 or equivalent. Prerequisite for GERM 344 is GERM 253 or equivalent, or departmental approval.

GERM 385. German Phonetics (3). Prerequisite, German 341, or departmental approval. Designed to show how German is pronounced, and how to attain accuracy which approximates native-like pronunciation as much as possible. Provides an opportunity to improve pronunciation.

GERM 398. Special Topics (1-6).

GERM 431. German Classicism and Romanticism (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval. Course treats individual works and authors. May be offered in English for non-majors and non-minors and may be repeated for credit.

GERM 432. German Poetry (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval.

GERM 441. Advanced Composition and Grammar (3). Prerequisite, GERM 341 and 342, or departmental approval.

GERM 442. Translation and Interpretation (2). Prerequisite, GERM 342 or equivalent, or departmental approval.

GERM 443. Advanced Composition and Grammar (3). Prerequisite, GERM 341 and 342, or departmental approval.

GERM 450. Contemporary French Novel (3). Prerequisite, at least two 300-level courses, one of which must be a literature course, or departmental approval. Students will view and analyse seven celebrated French films as a backdrop to the discussion of the history of French cinema.

GERM 491. Workshop (1-6). Prerequisite, departmental permission. May be repeated for credit.

GERM 496. Individual Study (1-6). Prerequisite, permission of instructor.

GERM 498. Special Topics (1-6).

Japanese Courses

JAPN 151, 152, 153. First Year Japanese (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Foundation in basic structural principles of the language.


JAPN 298. Special Topics (1-6).
JAPN 301. Japanese Literature in Translation (4). Prerequisite: C- or better in English 101. A survey of Japanese literature in translation. JAPN 301 and AST 347 are equivalent courses. Students may not receive credit for both courses.

JAPN 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, JAPN 253 or equivalent. JAPN 341 and 441.

JAPN 343, 344. Intermediate Conversation (2,2). Prerequisite for JAPN 343 is JAPN 253 or equivalent. Prerequisite for JAPN 344 is JAPN 343 or equivalent, or departmental approval.

JAPN 398. Special Topics (1-6).

JAPN 441. Advanced Composition and Grammar (3). Prerequisite, JAPN 341 and 342, or departmental approval.

JAPN 442. Translation and Interpretation (3). Prerequisite, JAPN 342 or equivalent, or departmental approval.

JAPN 496. Individual Study (1-6). Prerequisite, permission of instructor.

JAPN 498. Special Topics (1-6).

Russian Courses

RUSS 151, 152, 153. First Year Russian (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Firm foundation in basic structural principles of the language.

RUSS 251, 252, 253. Second Year Russian (5,5,5). Prerequisite, RUSS 153 or equivalent. Courses must be taken in sequence. Thorough review of Russian grammar and graduated readings in Russian prose and poetry with discussions conducted in Russian.

RUSS 298. Special Topics (1-6).

RUSS 310. Russian Civilization and Culture (3). Prerequisite, RUSS 253 or permission. Literature, art, music, history and philosophy. Lectures and discussions conducted in Russian. Formerly RUSS 254. Student may not receive credit for both.

RUSS 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, RUSS 253 or equivalent. Should be taken in sequence with RUSS 441.

RUSS 343. Intermediate Conversation (2).

RUSS 398. Special Topics (1-6).

RUSS 441. Advanced Composition and Grammar (3). Prerequisite, RUSS 341 and 342, or departmental approval.

RUSS 496. Individual Study (1-6). Prerequisite, permission of instructor.

RUSS 498. Special Topics (1-6).

Spanish Courses

SPAN 151, 152, 153. First Year Spanish (5,5,5). Courses must be taken in sequence. Conversational approach with intensive oral-aural drill. Firm foundation in basic structural principles of the language.

SPAN 181. Intensive Review of First Year Spanish (5). Prerequisite, minimum of two years of high school Spanish or equivalent. Intensive review of first year Spanish for students with the equivalent of two years of high school Spanish who wish to continue with Second Year Spanish.

SPAN 251, 252, 253. Second Year Spanish (5,5,5). Courses must be taken in sequence. Prerequisite, SPAN 153 or equivalent. Graduated readings in modern Spanish prose with discussions conducted in Spanish. Thorough review of Spanish grammar.

SPAN 298. Special Topics (1-6).

SPAN 301. Introduction to Hispanic Literature (3). Prerequisite, SPAN 253 or equivalent. This course is designed principally as a transition course to prepare students for the advanced literature courses. Appreciation of literature and methods of analysis will be taught on a basic level through the careful examination of specific texts.

SPAN 310. Hispanic Civilization and Culture (3). Prerequisite, SPAN 253 or equivalent. Major aspects of Hispanic cultures, with particular emphasis on contemporary Hispanic customs, philosophy, and way of life.

SPAN 341, 342. Intermediate Composition and Grammar (3,3). Prerequisite, SPAN 253 or equivalent.

SPAN 343, 344. Intermediate Conversation (2,2). Prerequisite for SPAN 343 is SPAN 253 or equivalent. Prerequisite for SPAN 344 is SPAN 343 or equivalent, or departmental approval.

SPAN 345, 346. Spanish for Spanish Speakers (2). Prerequisite for SPAN 345 is SPAN 253 or equivalent. Prerequisite for SPAN 346 is SPAN 345 or equivalent. Advanced grammar, writing techniques and lexicon for heritage or native-like speakers of Spanish.

SPAN 385. Spanish Phonetics (3). Prerequisite, SPAN 341, or departmental approval. Designed to show how Spanish is pronounced, and to attain accuracy which approximates native-like pronunciation as much as possible. Provides an opportunity to improve pronunciation.

SPAN 398. Special Topics (1-6).

SPAN 431. Advanced Grammar (2). Prerequisite, SPAN 342 or equivalent. Study of advanced Spanish grammar and syntax. Focus on areas of grammar especially problematic for English speakers. Students may not receive credit for SPAN 441 and SPAN 431.

SPAN 432. Spanish Advanced Composition and Stylistics (2). Prerequisite, SPAN 342 or equivalent. Develop writing techniques through the analysis of varied texts. Through the process of writing, students will find the appropriate balance of form and content. Students may not receive credit for both SPAN 432 and SPAN 441.

SPAN 440. Spanish for Teachers (3). Prerequisite, at least one grammar class at the 300 or 400 level, or departmental approval. A review of different aspects of the Spanish language with an emphasis on providing teachers with innovative approaches and practice in presenting the material covered.

SPAN 442. Translation and Interpretation (3). Prerequisite, SPAN 342 or equivalent, or departmental approval.

SPAN 444. Chicano Literature (3). Prerequisite, SPAN 301 or departmental approval. A study of works in all genres by Chicano writers. Discussions and most readings will be in Spanish.

SPAN 445. Spanish Medieval Literature (3). Prerequisite, SPAN 301 or departmental approval. This course deals with some of the most representative works, literary genres, and currents of the Spanish Middle Ages.

SPAN 446. Hispanic Cinema (3). Prerequisite, SPAN 301 or departmental approval. A study of major films from Spain and Latin America, in their various national contexts.

SPAN 449. Spanish Golden Age Literature (3). Prerequisite, SPAN 301 or departmental approval. Novel, theatre and poetry in 16th and 17th century Spain, including works by Cervantes, Lope de Vega, Calderon or Quevedo.

SPAN 456. The Hispanic Short Story (3). Prerequisite, SPAN 301 or departmental approval. Familiarization with the genre of short story writing and its reflections in the major Spanish and Latin American authors of that genre in an historical and literary perspective.

SPAN 457. Spanish-American Theater (3). Prerequisite, SPAN 301 or departmental approval. Study of dramatic and performance theories and of theatrical pieces from Latin America.

SPAN 458. Spanish-American Narrative (3). Prerequisite, SPAN 301 or departmental approval. Study of theories of narrative fiction and of novels and short stories from Latin America.

SPAN 459. Spanish-American Poetry (3). Prerequisite, SPAN 301 or departmental approval. Study of poetic theories and of main developments in the poetry of Latin America.
SPAN 465. Spanish Theater (3). Prerequisite, SPAN 301 or department approval. Study of dramatic and performance theories and of theatrical pieces from Spain.

SPAN 466. Spanish Poetry (3). Prerequisite, SPAN 301 or department approval. Study of poetic theories and of main developments in the poetry of Spain.

SPAN 467. Hispanic Literature and Film (3). Prerequisite, SPAN 301 or department approval. Study of fundamental themes in contemporary Hispanic literature and its relation with the art of films.

SPAN 471. Hispanic/Latino Cultures of the U.S. (3). Prerequisite, SPAN 301 and SPAN 310, or concurrent enrollment with SPAN 301 and SPAN 310, or equivalent. The course content focus is on the study of the Hispanic/Latino cultures of the United States. Course is conducted only in Spanish.

SPAN 491. Workshop (1-6). Prerequisite, department permission. May be repeated for credit.

SPAN 496. Individual Study (1-6). Prerequisite, permission of instructor.

SPAN 498. Special Topics (1-6).

Undergraduate Courses/Programs on Reserve

The following courses are on reserve and may be offered subject to program needs:

SPAN 305. Spanish for Bilingual School Personnel (3); SPAN 383. Spanish-English Contrastive Linguistics (4)

Foreign Studies Courses

Study Abroad

Courses with FNST prefixes in beginning, intermediate and advanced language (111-113, 211-213, 311-312, 411-412), culture and civilization (310) and literature (413) are not offered on campus and are available only in connection with study abroad programs and must be taught in the foreign language. For further information contact international programs or the Foreign Languages Department.

FNST 111, 112, 113. First Year Foreign Language (1-6). Offered only in study abroad programs. Courses must be taken in sequence, although a student may enroll in more than one at a time in the case of intensive courses. May be repeated for credit. Interested students should contact the Foreign Languages Department or the Office of International Studies and Programs.

FNST 211, 212, 213. Second Year Foreign Language (1-6). Offered only in study abroad programs. May be repeated for credit.

FNST 310. Culture and Civilization (1-6). Offered only in study abroad programs. Major aspects of the culture, philosophy and way of life of the host country will be emphasized. May be repeated for credit.

FNST 311, 312, 313. Third Year Foreign Language (1-6). Offered only in study abroad programs. A study of grammar, conversation and/or composition at the third year level. May be repeated for credit.

FNST 320. Literature (1-6). Prerequisite, second year foreign language or equivalent. Offered only in study abroad programs. An in-depth study of one or more authors, periods, or genres of the literature of the host country. May be repeated for credit.

FNST 411, 412, 414. Fourth Year Foreign Language (1-6). Offered only in study abroad programs. A study of grammar, conversation and/or composition at the fourth year level. May be repeated for credit.

FNST 420. Literature (1-6). Offered only in study abroad programs. An in-depth study of one or more authors, periods or genres of the literature of the host country. May be repeated for credit.

GENERAL STUDIES

Program Heads:

Associate Vice President for Undergraduate Studies
Dean of Arts and Humanities
Dean of the Sciences

Faculty:

All faculty in College of Arts and Humanities
All faculty in College of the Sciences
Selected faculty in College of Business

Since the program is a student-designed, interdisciplinary major, course selections will vary according to the student proposal; however, depending on the General Studies major selected, courses will be limited as follows:

Bachelor of Arts

General Studies – Humanities

This division of general studies is for students whose primary interest in the humanities requires interdisciplinary programs and course selections which are not possible within single academic programs or established curricula. Students who wish to earn a Bachelor of Arts in Humanities will devise an approved, coherent program of study with the coordinator which fulfills an academic or career goal and includes prerequisites consistent with the 300-400 level major course work.

A. 62 Credit Major:

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN 289, Proposal Colloquium</td>
<td>1</td>
</tr>
<tr>
<td>GEN 489, Senior Colloquium</td>
<td>1</td>
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</tbody>
</table>

Total 62

B. 47 Credit Major:

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN 289, Proposal Colloquium</td>
<td>1</td>
</tr>
<tr>
<td>GEN 489, Senior Colloquium</td>
<td>1</td>
</tr>
</tbody>
</table>

45 credits must be taken from the list of courses approved for the Humanities Major, 30 of which must be upper division. Students specializing in Humanities must take courses in at least three disciplines within the Major. No more than 10 credits may be numbered 490 . . . . . . . . . . . 45

In addition, a 45 credit major must complete either a traditional departmental minor (20-45 credits) or a second major, which may be either a traditional major or a General Studies major with a different major.

Total 67-92

Courses Approved for the General Studies – Humanities Major

Art (all courses)
Communication (all courses)
English (all courses)
Foreign Languages (all courses)
History (all courses)
Humanities (all courses)
Music (all courses)
Philosophy (all courses)
Religious Studies (all courses)
Theatre Arts (all courses)

Bachelor of Science

General Studies – Social Sciences

This division of General Studies is for students whose primary interest in the Social Sciences requires interdisciplinary programs and course selections which are not possible within single academic programs or established curricula. Students who wish to earn a Bachelor of Science in Social Sciences will devise an approved, coherent program
of study with the coordinator which fulfills an academic or career goal and includes prerequisites consistent with the 300-400-level major course work.

A. 62 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
60 credits must be taken from the list of courses approved for the Social Sciences Major, 45 of which must be upper division. Students specializing in Social Sciences must take courses in at least three disciplines within the Major. No more than 15 credits may be numbered 490 . 60

Total 62

B. 47 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
45 credits must be taken from the list of courses approved for the Social Sciences Major, 30 of which must be upper division. Students specializing in Social Sciences must take courses in at least three disciplines within the Major. No more than 15 credits may be numbered 490 . 45

In addition, a 45 credit major must complete either a traditional departmental minor (20-45 credits) or a second major, which may be either a traditional major or a General Studies major with a different major. .................. 20-45

Total 67-92

Courses Approved for the General Studies – Natural Sciences Major
Anthropology (Biological Anthropology)
ANTH 110, Introduction to Biological Anthropology
ANTH 110LAB, Biological Anthropology Laboratory
ANTH 310, Research/Laboratory in Biological Anthropology
ANTH 311, Advanced Biological Anthropology
ANTH 312, Human Origins
ANTH 313, Primate Social Behavior
ANTH 314, Human Variations and Adaptations in Living Populations
ANTH 315, Forensic Skeletal Analysis
ANTH 412, Long Term Primate Studies
ANTH 416, Pongid Behavior
ANTH 418, Primate Evolution
ANTH 485, Methods and Theory of Biological Anthropology
Biological Sciences (all courses)
Chemistry (all courses)
Computer Science (all courses)
Geography (Physical geography courses only)
GEOG 107, Introduction to Physical Geography
GEOG 273, Geography of Rivers
GEOG 386, Geomorphology
GEOG 387, Pedology
GEOG 388, Climatology
GEOG 450, Geography of Arid Lands
GEOG 451, Mountain Environments
GEOG 452, Coastal Environments
GEOG 453, Wetland Analysis
GEOG 476, Advanced Geomorphology
GEOG 477, Advanced Pedology
GEOG 478, Advanced Climatology
GEOG 479, Geography of the West
Geological Sciences (all courses)
Mathematics (all courses)
Physics (all courses)

A. 62 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
60 credits must be taken from the list of courses approved for the Natural Sciences Major, 45 of which must be upper division. Students specializing in Natural Sciences must take courses in at least three disciplines within the Major. No more than 15 credits may be numbered 490 . 60

Total 62

B. 47 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
45 credits must be taken from the list of courses approved for the Natural Sciences Major, 30 of which must be upper division. Students specializing in Natural Sciences must take courses in at least three disciplines within the Major. No more than 10 credits may be numbered 490 . 45

In addition, a 45 credit major must complete either a traditional departmental minor (20-45 credits) or a second major, which may be either a traditional major or a General Studies major with a different major. .................. 20-45

Total 67-92

Courses Approved for the General Studies – Natural Sciences Major

Business (approved courses only)
BUS 241, Legal Environment of Business
BUS 341, Advanced Business Law
HRM 381, Management of Human Resources
HRM 479, Industrial Relations/Collective Bargaining
MGT 380, Organizational Management
MGT 383, Contemporary Management Practices
MGT 384, Introduction to International Business
MGT 389, Business and Society
MGT 481, Organizational Behavior
MGT 482, Applied Management and Organizational Behavior
MGT 483, Organizational Change
MKT 360, Principles of Marketing
MKT 367, Consumer Behavior
Economics (all courses)
Ethnic Studies (all courses)
Geography (all courses EXCEPT Physical Geography courses listed below:)
GEOG 107, Introduction to Physical Geography
GEOG 386, Geomorphology
GEOG 387, Pedology
GEOG 388, Climatology
GEOG 453, Wetland Analysis
GEOG 476, Advanced Geomorphology
GEOG 477, Advanced Pedology
GEOG 478, Advanced Climatology
History (all courses)
Law and Justice (all courses)
Political Science (all courses)
Psychology (all courses)
Sociology (all courses)
Women Studies (all courses)

Bachelor of Science
General Studies – Natural Sciences

This division of General Studies is for students whose primary interest in the biological or physical sciences or mathematics which offer broader options in course selections than are possible within single departments. Students who wish to earn a Bachelor of Science degree will devise an approved, coherent program of study with the coordinator which fulfills an academic or career goal and included prerequisites consistent with the 300-400-level major course work.

A. 62 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
60 credits must be taken from the list of courses approved for the Natural Science Major, 45 of which must be upper division. Students specializing in Natural Sciences must take courses in at least three disciplines within the Major. No more than 15 credits may be numbered 490 . 60

Total 62

B. 47 Credit Major:
Required Courses Credits
GEN 289, Proposal Colloquium ............. 1
GEN 489, Senior Colloquium .............. 1
45 credits must be taken from the list of courses approved for the Natural Sciences Major, 30 of which must be upper division. Students specializing in Natural Sciences must take courses in at least three disciplines within the Major. No more than 10 credits may be numbered 490 . 45

In addition, a 45 credit major must complete either a traditional departmental minor (20-45 credits) or a second major, which may be either a traditional major or a General Studies major with a different major. .................. 20-45

Total 67-92

Courses Approved for the General Studies – Natural Sciences Major

Anthropology (Biological Anthropology)
ANTH 110, Introduction to Biological Anthropology
ANTH 110LAB, Biological Anthropology Laboratory
ANTH 310, Research/Laboratory in Biological Anthropology
ANTH 311, Advanced Biological Anthropology
ANTH 312, Human Origins
ANTH 313, Primate Social Behavior
ANTH 314, Human Variations and Adaptations in Living Populations
ANTH 315, Forensic Skeletal Analysis
ANTH 412, Long Term Primate Studies
ANTH 416, Pongid Behavior
ANTH 418, Primate Evolution
ANTH 485, Methods and Theory of Biological Anthropology
Biological Sciences (all courses)
Chemistry (all courses)
Computer Science (all courses)
Geography (Physical geography courses only)
GEOG 107, Introduction to Physical Geography
GEOG 273, Geography of Rivers
GEOG 386, Geomorphology
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GEOG 452, Coastal Environments
GEOG 453, Wetland Analysis
GEOG 476, Advanced Geomorphology
GEOG 477, Advanced Pedology
GEOG 478, Advanced Climatology
GEOG 479, Geography of the West
Geological Sciences (all courses)
Mathematics (all courses)
Physics (all courses)
General Studies Courses

GEN 289. Proposal Colloquium (1). Prerequisite: permission of the Associate Vice President for Undergraduate Studies. Introduction to the General Studies Major, General Studies degree proposal design and preparation. Grade will be S or U.

GEN 489. Senior Colloquium (1). Prerequisite: permission of the Associate Vice President for Undergraduate Studies. End of program assessment; preparation of comprehensive degree report and/or descriptive portfolio of project. Grade will be S or U.

GEOGRAPHY AND LAND STUDIES

Faculty
Chair: Karl Lillquist
Lind Hall 119C

Professors:
John A. Alvin, Human Geography, Geographic Education, Pacific Rim, Asia, Western North America
James L. Huckabay, Energy Resources, Climatology, Air Photo Interpretation

Associate Professors:
Anthony Gabriel, Biogeography, Environmental Studies, Coastal Zone Management, Pacific Northwest
Robert Hickey, GIS, Remote Sensing, Environmental Impacts, Coastal Zones, Australia
Robert Kuhlken, Land-Use Planning, Cultural Ecology, Historical Geography, Oceania
Karl D. Lillquist, Physical Geography, Geomorphology, Soils, Environmental Change in Arid and Alpine Watersheds

Assistant Professors:
J. Anthony Abbott, Political Ecology, Agricultural Systems, Latin America
Christopher Kent, Physical Geography, Water Resources, Watershed Planning, North America

Adjunct Faculty:
Elaine K. Glenn, Middle East, Political Geography, World Regional Geography
Allen Sullivan, Physical Geography, Natural Resources

General Departmental Information

Geography’s traditional concern with the inter-relatedness of the natural and human environments, and reasons for their differences from place to place, provides important insights into many of the complex problems facing society today.

The Department stresses flexibility in the selection of course sequences for majors and encourages study in related departments among the social and natural sciences. The Department is an active participant in the following University programs:

- Environmental Studies, Energy Studies, Asia/Pacific Studies, Latin American Studies, International Studies and Programs, and Resource Management graduate program.
- A well-appointed Geographic Information Systems (GIS) laboratory which benefits majors from other programs in addition to geography.

If you choose to major in Geography, you will be required to take a core sequence of five courses. The B.A. allows great flexibility in working out a major with the help of one of our faculty advisors. Your major will include a combination of courses in Geography and related fields, as approved by one of our departmental advisors, that will best enable you to achieve your goals in life, a Geography-related career (e.g., planning, GIS, environmental/resource management) and/or graduate school.

All students who wish to major in Geography must:
1. have a 2.25 minimum GPA in all coursework taken up to the time of admission;
2. apply for acceptance into the Geography and Land Studies major;
3. upon acceptance into the program, meet with their assigned advisor to develop a Major Contract;
4. earn a C- or better grade in each of the courses in their Major Contract.

Geography Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 101, World Regional Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 107, Introduction to Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 108, Introduction to Human Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 203, Map Reading and Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 489, Geography Capstone</td>
<td>2</td>
</tr>
</tbody>
</table>

Geography Core Total 20

Bachelor of Arts

Geography Major 45 credits

The Geography Major–45 credits is recommended for students who wish to develop a broad knowledge of Geography yet retain the overall flexibility to prepare themselves for a variety of employment opportunities or graduate study. Students taking this major are required to have a second major or a minor.

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department approved electives</td>
<td>12-20</td>
</tr>
<tr>
<td>Geography core requirements</td>
<td>20</td>
</tr>
</tbody>
</table>

Bachelor of Arts

Geography Major 60 credits

This major is intended for students who wish to develop depth and breadth in a particular portion of Geography in preparation for a career or graduate study in Geography. Students may specialize in one of five tracks within the Geography Major–60 credits: Geotechniques, Global and Area Studies, Physical Geography, Planning, and Environmental/Resource Geography. Recommended electives for each of these specializations are listed on the department’s Web page. In consultation with a departmental advisor, students may choose a specialization and design a program of component courses which best fits specific career goals and aspirations.

Required Courses

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department approved electives</td>
<td>12-20</td>
</tr>
<tr>
<td>Geography core requirements</td>
<td>20</td>
</tr>
</tbody>
</table>

Bachelor of Arts

Geography Teaching Major

Senior high school teachers are advised to accompany this with a major in a field in which a major portion of a full-time teaching assignment can be expected. Junior high school teachers must combine this with minors in both History and English. GEOG 203, Map Reading and Interpretation, provides map reading skills for all teaching levels. Students taking this major are required to complete the professional education program requirements offered.
through the Curriculum and Supervision Department. For elementary school teaching see the Department of Teacher Education Programs. Please note: Geography is no longer a valid endorsement for education majors in the state of Washington.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 101</td>
<td>World Regional Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 107</td>
<td>Introduction to Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td><em>GEOG 203</em></td>
<td>Map Reading and Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 304</td>
<td>Economic Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 308</td>
<td>Cultural Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 386</td>
<td>Geomorphology or GEOG 388, Climatology</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 388</td>
<td>Regional Geography at 300 level or above</td>
<td>5-10</td>
</tr>
<tr>
<td>GEOG 403</td>
<td>Introductory GIS</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 410</td>
<td>Airphoto Interpretation</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 417</td>
<td>Advanced GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 485</td>
<td>Topics in GIS</td>
<td>4</td>
</tr>
</tbody>
</table>

*GEOG 417, Advanced GIS (4) *GEOG 496, Independent Study (GIS Topics) (1-6) GEOG 490, Cooperative Education (GIS Topics) (1-12) GEOG 493, Geography Field Experience (GIS Topics) (1-12) CS 301, Data Structures (4)

**Other electives as approved by the Director**

* A minimum of 8 credits taken from the list of electives at least 4 credits of which must be a “GIS” class. All electives must be approved by the certificate director.

* Students may also take Advanced GIS or Introduction to Visual Basics for ESRI Software as 1 credit GEOG 496 classes up to a maximum of 4 classes (both to CWU and ESRI).

**Total 46**

* A requirement for prospective teachers (WAC 180-79-356). WAC also requires a minimum of 24 credits for endorsement to teach in the public schools.

**Geography Minor**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 101</td>
<td>World Regional Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 107</td>
<td>Introduction to Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 108</td>
<td>Introduction to Human Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 203</td>
<td>Map Reading and Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>Any upper division geography courses</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

**Total 25**

**Certificate in Geographic Information Systems (GIS)**

The GIS certificate provides recognition for students completing the required number of GIS-related classes (26 credits) at a high level of competence (minimum average GPA of 2.7). Certification will provide students with a powerful tool to assist their future job searches.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 303/403</td>
<td>Introductory GIS (GIS Topics) (1-6)</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 404</td>
<td>Intermediate GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 410</td>
<td>Airphoto Interpretation</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 430</td>
<td>Remote Sensing</td>
<td>5</td>
</tr>
<tr>
<td><em>GEOG 409</em></td>
<td>Quantitative Methods (4)</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 413</td>
<td>Computer Cartography</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 417</td>
<td>Advanced GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 485</td>
<td>Topics in GIS</td>
<td>4</td>
</tr>
</tbody>
</table>

Remote Sensing (4) **GEOG 496, Independent Study (GIS Topics) (1-6)** GEOG 490, Cooperative Education (GIS Topics) (1-12) GEOG 493, Geography Field Experience (GIS Topics) (1-12) CS 301, Data Structures (4)

**Other electives as approved by the Director**

* A minimum of 8 credits taken from the list of electives at least 4 credits of which must be a “GIS” class. All electives must be approved by the certificate director.

**Total 26**

**Geography Courses**

**GEOG 101. World Regional Geography (5).** Regions and nations of the world together with the changing elements of the physical and human environment which support them.

**GEOG 107. Introduction to Physical Geography (5).** The complex weather, climate, water, landforms, soils and vegetation comprising Earth’s physical environments over space and time.

**GEOG 108. Introduction to Human Geography (5).** Distribution and spatial variation of population, settlement patterns, cultural elements of language, religion, and lifeways, and the economic and political organization of the planet.

**GEOG 203. Map Reading and Interpretation (3).** An introduction to commonly available maps, including topographic, nautical, weather, land use, and others. Necessary concepts, such as scale, are introduced.

**GEOG 215. Concepts of GIS (3).** Basic principles and uses of geographic information systems (GIS). Practice with the use of GIS in solving land management and evaluation problems. Two hours lecture and four hours laboratory per week. Formerly ANTH/GEOG 431. GEOG 215 and ANTH 215 are equivalent courses. Students may not receive credit for more than one.

**GEOG 221. Introduction to Geography (3).** Using maps and other learning tools to understand spatial distributions and interactions of Earth’s peoples, places, resources, and environments. Specifically designed for elementary school teachers.

**GEOG 273. Geography of Rivers (5).** Global, regional, and local physical and cultural patterns and processes within river basins.


**GEOG 304. Economic Geography (5).** Geographic survey of human livelihood and interaction with the environment. Agriculture, industry, and urbanization are examined in the context of an increasingly interdependent world system. Formerly GEOG 205. Student may not receive credit for both.

**GEOG 305. Introduction to Land Use Planning (5).** Investigation into the process and practice of urban and regional planning. Emphasis on historical development, legal foundations, and techniques of planning in the United States.

**GEOG 308. Cultural Geography (5).** Consequences of cultural diversity in the human occupation of the earth, and the interactions of human and natural systems.

**GEOG 310. Introduction to Landscape Analysis (5).** Application of concepts and techniques of landscape analysis. Specific landscapes are analyzed utilizing various techniques including remotely sensed imagery, historical records, and field observation and measurement.

**GEOG 343. Energy Resource Alternatives (3).** Solar, wind, water and biomass alternatives to traditional energy resources. Alternatives in power production, architecture, heating, transportation, agriculture and policies affecting their implementation. (Not open to students with credit in GEOG 398, Low Energy Living.)

**GEOG 346. Political Geography (4).** The spatial structure of political units. The effect of political, economic, social and earth resource factors on the areas, shapes, and boundaries of these units, and on the distribution of populations and institutions.

**GEOG 350. Resources, Population and Conservation (4).** The meaning of resources and conservation; population growth and its implications for land management, public control, and environment quality; attitudes regarding the use of resources; conservation thought and activities in the United States.
GEOG 352. Geography of North America (5). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of the United States, Canada and Mexico.

GEOG 355. Geography of the Pacific Northwest (4). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of the Pacific Northwest.

GEOG 361. Soils (5). Prerequisite: GEOG 107 or instructors permission. Focus on properties, factors, processes and classifications of Earth’s soils, past and present. Four hours of lecture and four hours of field/labatory per week. GEOG 361 and GEOG 461 are equivalent courses. Students may not receive credit for both.

GEOG 366. Geography of the Middle East (5). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of the Middle East.

GEOG 371. Geography of Europe (5). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of Europe.

GEOG 373. Water Resources (4). No prerequisites but GEOG 107 is recommended. Foundation course for understanding the physical and social dimensions of water resource use on a global scale. Special attention paid to issues in the American West.

GEOG 382. Hydrology (5). Provides a comprehensive introduction to both the global and local hydrologic cycle. Covers constituent processes, their measurements and quantitative relationships, plus basic water quality parameters. GEOG 382 and GEOG 482 are equivalent courses. Students may not receive credit for both.

GEOG 386. Geomorphology (5). Prerequisites, GEOG 107 or GEOL 101 or GEOL 102 and GEOL 101L. Descriptive and interpretive examination of the earth’s land forms. Four lectures and three hours laboratory or field trips. GEOG 386 and GEOG 386 are equivalent courses. Students may not receive credit for both.

GEOG 388. Climatology (5). Prerequisite, GEOG 107 or instructor’s permission. Elements of, and factors and processes affecting Earth’s climates, present, past, and future. Four hours lecture and two hours laboratory/field per week. Course fee required.

GEOG 389. Ecosystems Geography (5). Investigates the functional relationships between biophysical processes and their spatial and temporal patterns at various scales. Introduces approaches to land systems analysis focusing upon ecosystems.

GEOG 398. Special Topics (1-6).

GEOG 399. Seminar (1-5).


GEOG 404. Intermediate GIS (4). Prerequisite, GEOG 303/403 or permission. Applied concepts, principles, and operation of fundamental GIS applications, including raster-vector data models, topology, digitizing, and various analytical techniques such as overlay, buffers, and Boolean queries. Lecture and practical applications. GEOG 404, ANTH 404 and GEOL 404 are equivalent courses. Students may not receive credit for more than one. Formerly ANTH/GEOG/GEOL 385.

GEOG 405. Advanced Topics in Land Use Planning (5). Prerequisite, GEOG 305. Selected issues and problems in land use planning and environmental control. Topics may include growth management, small town and rural planning, or coastal zone management. May be repeated for credit.

GEOG 408. Advanced Topics in Human Geography (3). Focuses on the content of GEOG 308 in greater detail with particular emphasis on land use in non industrial societies. Topics will vary, consult with instructor.

GEOG 409. Quantitative Methods in Geography (4). Prerequisite, MATH 130; equivalent transfer or HS credit. Quantitative analysis assessment in geography and resource management. Emphasis on statistical analysis.

GEOG 410. Airphoto Interpretation (4). Prerequisite, instructor’s permission. Introduction to airborne photography, and the techniques and tools to apply this technology to geographical issues. Three hours lecture and two hours laboratory per week. Course fee required.

GEOG 413. Computer Cartography (4). Prerequisite, permission of instructor. Computerized mapmaking basics of contour, choropleth, 3-D, and other thematic maps from digitizing to final color product. Applied experience using cartographic software.

GEOG 415. Geography of Oceania (3). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of Australia, New Zealand, and the Pacific Islands.

GEOG 417. Advanced GIS (4). Prerequisite, GEOG 404, ANTH 404, or GEOL 404 or permission of instructor. Focus on the structure, principles, techniques, analysis, and application. Lecture and practical hands-on experience. Applied experience using GIS software. GEOG 417, ANTH 417 and GEOL 417 are equivalent courses. Students may not receive credit for more than one.

GEOG 421. Practical Aids in Teaching Geography (3). Materials and methods appropriate to teaching geography in public schools. Students will become proficient in using maps, the globe, and other geographic media, including the Internet.

GEOG 422. Geography of Food and Agriculture (5). Overview of food and agriculture as it relates to specific geographic regions, production regimes, trade, and cuisine. Domestic and international issues explored through lecture and field study.

GEOG 425. Field Methods in Geography (5). Prerequisite, permission of instructor. Theory of, and practice in, geography field methods via in-depth field research projects. Topics include field observation, data collection, and data interpretation. Two hours lecture and five hours field per week.

GEOG 430. Remote Sensing (5). Prerequisites, GEOG 410 or GEOL 210, or permission of instructor. Principles of acquisition, analysis, and use of remotely sensed data (LANDSAT, SPOT, Ikonos, etc.). Applied experience using image processing software. Three hours lecture and three hours laboratory per week. GEOG 430, GEOL 430 and GEOL 530 are equivalent courses. Students may not receive credit for more than one course.

GEOG 433. Mineral Resources (4). Prerequisites, GEOG 107, GEOL 145, or ENST 301. Foundation course for understanding the physical, social, economic, and legal dimensions of mineral resource use. Emphasis paid to issues in the American West.

GEOG 440. Ecology and Culture (4). Investigation into interdependent environmental and human cultural systems. Traditional agroecologies and subsistence strategies; contemporary problems of resource management, social equity, political ecology, and sustainable development. GEOG 440 and ANTH 440 are equivalent courses. Students may not receive credit for both.

GEOG 443. Energy Policy (5). Prerequisite, PHYS 111 or permission. Legal, institutional, and economic frameworks for regional, national and international energy decisions.

GEOG 445. Natural Resources Policy (4).
GEOG 446. Land Use in the United States (3). Historical geography of settlement and the evolution of subsequent land use patterns in the United States in response to changing economic and environmental conditions.

GEOG 447. Problems in Resource Allocation (4). Prerequisite, permission of instructor. Selected current problems in resource allocation.

GEOG 448. Resource and Environmental Analysis (5). Examination of the techniques and methodologies used for the evaluation and sustainable management of environmental resources from a variety of perspectives.

GEOG 450. Geography of Arid Lands (4). Unique physical environments of arid lands, and human interaction with these environments over space and time. Focus on natural resources and land use conflicts.


GEOG 460. Geography of International Trade (5). Prerequisite, GEOG 304 or permission of the instructor. Geographic basis of international trade with special emphasis on the Pacific Northwest. Field trips required.

GEOG 461. Soils (5). Prerequisite: GEOG 107 or instructor permission. Focus on properties, factors, processes and classifications of Earth’s soils, past and present. Four hours of lecture and four hours of field/laboratory per week. Same as GEOG 361, may not receive credit for both.

GEOG 465. Wine: A Geographical Appreciation (3). World overview of grape and wine industry emphasizing geographic themes. Includes all-day field trip to Yakima Valley viticultural area.

GEOG 470. Geography of Latin America (4). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of Latin America.

GEOG 471. Geography of Middle America (3). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of Mexico, Central America, and the Caribbean.

GEOG 472. Watershed Analysis and Planning (4). Prerequisite: GEOG 373 or permission of instructor. Examination of water resource analysis, development, management, and planning in the United States. Focus on contemporary problems, trends, and case studies.

GEOG 474. Geography of China (4). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of China.

GEOG 475. Geography of Asia (5). Examination of the physical and cultural geography, human-environment interactions, landscapes, and regional diversity of Asia.

GEOG 476. Advanced Geomorphology (2-4). Prerequisites, GEOG 386 or GEOL 386, or instructor’s permission. Selected advanced topics in geomorphology. Topics may include arid geomorphology, holistic watershed geomorphology, glacial geomorphology, and mass wasting geomorphology.

GEOG 477. Advanced Pedology (2-4). Prerequisites: GEOG 361 or permission of instructor. Selected advanced topics in soils. Topics may include Quaternary soils and composting. May be repeated to a maximum of 8 credits.

GEOG 478. Advanced Climatology (2-4). Prerequisites, GEOG 388 or permission of instructor. Selected advanced topics in climatology. Topics may include bioclimatology, Quaternary climate change, future climate change and microclimatology.

GEOG 479. Geography of the West (1-12). Prerequisite permission of instructor. In-depth field examination of the complex physical, human, and resource issues of one or more of the varied subregions of western North America. May be repeated for credit by permission of department chair.

GEOG 481. Urban Geography (5). Prerequisite, GEOG 304 or permission of instructor. The spatial and size distribution of cities as explained by their historical development and major functions. Analysis of the internal structure of cities and the results of urban growth.

GEOG 482. Hydrology (5). Provides a comprehensive introduction to both the global and local hydrologic cycle. Covers constituent processes, their measurements and quantitative relationships, plus basic water quality parameters. GEOG 482 and GEOG 382 are equivalent courses. Students may not receive credit for both.

GEOG 485. Topics In GIS and Remote Sensing (4). Prerequisites, GEOG 403, GEOG 430, or permission of instructor. Special topic classes in GIS and remote sensing. Applied experience using GIS or image processing software.

GEOG 489. Geography Capstone (2). Prerequisite, Geography major with senior standing. Assessment of past coursework and exploration of future opportunities.

GEOG 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

GEOG 491. Workshop (1-6).

GEOG 492. Geography Teaching Experience (1-3). Prerequisites. 15 credits in Geography and permission of instructor. Experience in classroom, laboratory, and/or field teaching. May be repeated for credit with permission of department chair. Formerly GEOG 494.

GEOG 493. Geography Field Experience (1-12). Prerequisite, permission of instructor and Department Chair. Individual or group off-campus experience in the field study of geographical phenomena. May be taken more than once by permission of department chair.

GEOG 494. Applied GIS Project (2-6). Prerequisite, ANTH/GEOL 215 and permission of instructor. GIS projects in Anthropology, Biology, Geography, Geology, Resource Management. May be repeated by permission of department chair. GEOG 494, ANTH 494 and GEOL 494 are equivalent courses. Formerly GEOG 492.

GEOG 496. Individual Study (1-6). Prerequisite, permission of instructor.

GEOG 498. Special Topics (1-6).

GEOG 499. Seminar (1-5).
GEOLOGICAL SCIENCES

Faculty
Chair: Lisa L. Ely
Lind 220

Professors
Lisa L. Ely, Geomorphology, Paleohydrology, and Quaternary Geology
M. Meghan Miller, Crustal Deformation, GPS Geodesy, Active Tectonics, and Remote Sensing
Charles M. Rubin, Paleoseismology, Earthquake Hazards, and Active Tectonics

Associate Professors
Wendy A. Bohrson, Volcanology, Isotope Geochemistry, Igneous Petrology
Carey Gazis, Environmental Geochemistry, Stable Isotope Geochemistry, and Hydrogeology
Jeffrey Lee, Active and Regional Tectonics, Structural Geology

Assistant Professors
Paul W.O. Hoskin, Mineralogy and Petrology
Timothy I. Melbourne, Seismology, Continental Dynamics
Beth Pratt-Sitaula, Earth Science Education and Geomorphology

Faculty Research Associates
Frank Ramos, Geochemistry

Adjunct Lecturers
Marie Ferland, Marine Stratigraphy, Quaternary Geology and Climate Change, Sedimentology
Steven Lundblad, Sedimentary Geology, Isotope Geochemistry
Jack Powell, Field Geology, Mineral Resources, Pacific Northwest Geology
Nick Zentner, Scientific Instructional Technician Supervisor

Emeritus Professors
Robert D. Bentley, Structural Geology, Igneous and Metamorphic Petrology, Regional Geology of the Pacific Northwest
James Hinthorne, Mineralogy, Geochemistry, Spatial Information Systems

General Departmental Information
Geosciences encompass the scientific study of the origin and evolution of the Earth. Energy, mineral and water resources, geologic hazards, pollution of natural waters, and earthquake prediction are just a few of the pressing societal concerns that are addressed by geoscientists. The Geological Sciences program has two major parts: (1) solid-earth geosciences, such as rocks, minerals, deformation and tectonic evolution of the earth's crust, and (2) earth processes over the last 10,000 years, such as active faulting, environmental geochemistry, hydrogeology and water resources, geologic hazards, seismology, surface processes, and volcanology. Field, laboratory, and computer skills are essential to the study of the Geological Sciences. Research in the geosciences is active and varied, with faculty and students interacting closely. Bachelor of Science and Bachelor of Arts degrees are offered in geology, and a Bachelor of Science degree in Environmental Geological Sciences. A Bachelor of Arts in Earth Sciences is also offered, and is intended for future secondary school teachers. Minors in Geology and Earth Sciences are also available to supplement careers in other fields.

Students who declare a major in geology must register with the department and work out a specific program of studies with the chairperson or an assigned advisor. Course programs can be tailored to the student's needs and interests with the aid of an academic advisor. Other course requirements may be modified in cases where past performance indicates superior ability. Students must be evaluated for math placement upon declaration of the major with the goal of establishing proficiency at the MATH 154 level early in the major program.

Bachelor of Science Major
The B.S. curriculum in geosciences prepares students for careers in solid-earth geosciences and environmental geology. This program assures adequate preparation in the basic physical sciences and breadth in the geosciences, so that students are well prepared for graduate school and have flexibility in career decisions. The B.S. requires courses in the Geological Sciences and additional courses in mathematics, chemistry, and physics. The B.S. degree is also appropriate for students who wish to continue in other quantitative scientific fields or directions (e.g., medical school).

Bachelor of Arts Major
The B.A. degree is designed for students planning professional careers in the geosciences and for those preparing to incorporate geosciences into broader careers such as teaching, resource management, environmental planning, business, or law. The B.A. degree may be an appropriate prerequisite for some graduate programs, but a B.S. is generally recommended for those in the Geological Sciences. Election of this major will allow students to choose supporting courses from disciplines such as computer science, mathematics, and physics or other physical or biological sciences, or from disciplines as diverse as anthropology, environmental studies, or geography.

Bachelor of Science and Bachelor of Arts
Geology Major

Required Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101, Physical Geology</td>
<td></td>
</tr>
<tr>
<td>GEOL 102, Geology of National Parks</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 101LAB, Laboratory, Physical Geology</td>
<td>1</td>
</tr>
<tr>
<td>GEOL 200, Earth Evolution and Global Change</td>
<td></td>
</tr>
<tr>
<td>GEOL 415, Earthquake Geology and Natural Hazards</td>
<td>4*</td>
</tr>
<tr>
<td>GEOL 416, Earthquake Geology and Natural Hazards</td>
<td>4*</td>
</tr>
<tr>
<td>GEOL 452, Geophysics OR GEOL 480, Geochemistry</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 489, Geologic Field Methods</td>
<td>6-12</td>
</tr>
<tr>
<td>GEOL 487, End of Major Review</td>
<td>1</td>
</tr>
</tbody>
</table>

Electives selected from the following
(take at least one with asterisk): . . . 17-20

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 304, Plate Tectonics</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 377 and 377LAB, Regional Natural History</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 380, Environmental Geology and Natural Hazards</td>
<td>4*</td>
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<tr>
<td>GEOL 381, Environmental Mineralogy</td>
<td>4*</td>
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<tr>
<td>GEOL 386, Geomorphology</td>
<td>5*</td>
</tr>
<tr>
<td>GEOL 415, Earthquake Geology and Neotectonics</td>
<td>5*</td>
</tr>
<tr>
<td>GEOL 425, Environmental Geochemistry</td>
<td>5*</td>
</tr>
<tr>
<td>GEOL 445, Hydrogeology</td>
<td>5*</td>
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<td>GEOL 452, Geophysics</td>
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<td>GEOL 453, Seismology</td>
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<tr>
<td>GEOL 454, Geostatistics</td>
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</tr>
<tr>
<td>GEOL 455, Applied Geophysics</td>
<td>4*</td>
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<td>GEOL 474, Quaternary Geology</td>
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<tr>
<td>GEOL 475 Petrography and Petrogenesis</td>
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<td>GEOL 476, Sedimentary Petrology</td>
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<tr>
<td>GEOL 478, Volcanology</td>
<td>5</td>
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<tr>
<td>GEOL 480, Geochemistry</td>
<td>4</td>
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<tr>
<td>GEOL 481, Mineralogy and Planetary Materials</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 483, Isotope Geochemistry</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 488, Senior Colloquium in Geology</td>
<td>4</td>
</tr>
</tbody>
</table>

Geology Core Total 62-71
Allied science requirements for Bachelor of Science degree

A one year series is required in Math or Chemistry and two quarters is required of each of the other two subjects:

- CHEM 181 and 181LAB, CHEM 182 and 182LAB required, CHEM 183 .................. 10-14
- PHYS 181, 181LAB and PHYS 182, 182LAB; PHYS 111, 111LAB, 112, 112LAB, 113, 113LAB may be substituted for 181, 181LAB and 182, 182LAB ............. 10-15
- MATH 172 and MATH 173 required, choose between 265, 272, or 311 ...... 10-15

_allied science total_ 96-106

Bachelor of Science Environmental Geological Sciences Major

Required Core Courses  Credits

- GEOL 101, Physical Geology OR
- GEOL 102, Geology of National Parks OR
- GEOL 108, Environmental Geology ...... 4-5
- GEOL 101LAB, Laboratory, Physical Geology Laboratory ......................... 1
- GEOL 200, Earth Evolution and Global Change ........................................... 5
- GEOL 210, Introduction to Geologic Field Methods .................................... 4
- GEOL 320, Rocks and Minerals ................................................................. 5
- GEOL 370, Stratigraphy .............................................................. 5
- GEOL 380, Environmental Geology and Natural Hazards ......................... 4
- GEOL 386, Geomorphology ................................................................. 5
- GEOL 425, Environmental Geochemistry OR
- GEOL 483, Isotope Geochemistry ......................................................... 5
- GEOL 445, Hydrogeology ................................................................. 5
- GEOL 487, End of Major Review ....................................................... 1

Electives selected from the following:

(take at least one with an asterisk): ...... 17-20

- GEOL 377 and 377LAB, Regional Natural History (5)
- GEOL 381, Environmental Mineralogy (4)
- GEOL 410, Snow Sciences: The Physics of Avalanches (4)
- GEOL 415, Earthquake Geology and Neotectonics (5)
- GEOL 425, Environmental Geochemistry (5)
- GEOL 430, Remote Sensing (5)
- GEOL 455, Applied Geophysics (4)
- GEOL 474, Quaternary Geology (4)
- GEOL 478, Volcanology (5)
- GEOL 483, Isotope Geochemistry (5)
- BIOL 360, General Ecology (5)
- CHEM 345, Environmental Chemistry (5)
- ECON 462, Economics of Energy, Resources, and Environment (5)*
- ENST 303, Environmental Management (5)*
- GEOG 305, Introduction to Land Use Planning (5)*
- GEOG 361, Soils (5)
- GEOG 373, Water Resources (4)*
- GEOG 382, Hydrology (5)
- GEOG 445, Natural Resources Policy (5)*

_allied science total_ 62-65

Geology Core Total  07-115

Allied science requirements for Bachelor of Science Environmental Geological Sciences degree

A one year series is required in Chemistry and Mathematics, two quarters are required in Physics, and one quarter is required in Biology.

- CHEM 181 and 181LAB, CHEM 182 and 182LAB required, CHEM 183, and CHEM 183LAB .................................................. 15
- PHYS 181, 181LAB, and PHYS 182, 182LAB; PHYS 111, 111LAB, 112, 112LAB, 113, 113LAB may be substituted for 181, 181LAB and 182, 182LAB ............. 10-15
- MATH 172 and MATH 173 and MATH 311 .............................................. 15
- BIOL 111, Plant Biology ................................................................. 5

_allied science total_ 45-50

Bachelor of Science Environmental Geological Sciences Total  07-115

Allied science requirements for Bachelor of Arts degree

CHEM 111 and 111LAB OR

CHEM 181 and 181LAB ................................................. 5

Select from the following: .................................. 10

- PHYS 111, 111LAB, 112, 112LAB, 113, 113LAB, 181, 181LAB, 182, 182LAB, 183, 183LAB
- MATH 172, 173, 311
- CHEM 182 and 182LAB

_allied science total_ 15

Bachelor of Arts Total  77-86

Bachelor of Science Total  96-106

Bachelor of Arts Environmental Geological Sciences degree

Required Courses  Credits

- GEOL 101, Physical Geology OR
- GEOL 102, Geology of National Parks ..... 4
- GEOL 101LAB, Physical Geology Laboratory 1
- GEOL 200, Earth Evolution and Global Change .............................................. 5
- GEOL 210, Introduction to Geological Field Methods .................................... 4
- GEOL 320, Rocks and Minerals .......... 5
- GEOL 346, Mineralogy ..................... 5
- GEOL 386, Geomorphology ............... 5
- Department approved Geology electives 3-5

Total  32-34

Bachelor of Arts Earth Science Major (2600)

This major satisfies the criteria for an endorsement in Earth Science. It does not constitute preparation for a career in geology. The Earth Science major qualifies students to teach earth science at the high school level and the middle or junior high school level. Students should seriously consider working toward endorsement in a second area, such as biology, chemistry, general science, physics, or mathematics. Earth Science majors are required to complete the Professional Education Program requirements offered through the Department of Education. Students completing this program after August 31, 2005 will be required to pass the WEST-E (PRAXIS II) exam for Earth Science to receive a Washington State teaching endorsement in earth science.

Required Courses  Credits

- GEOL 101, Physical Geology OR
- GEOL 102, Geology of National Parks ..... 4
- GEOL 101LAB, Physical Geology Laboratory 1
- GEOL 200, Earth Evolution and Global Change .............................................. 5
- GEOL 210, Introduction to Geological Field Methods .................................... 4
- GEOL 320, Rocks and Minerals .......... 5
- GEOL 350, Northwest Geology .......... 4
- GEOL 370, Stratigraphy ................. 5
- GEOL 380, Environmental Geology ...... 4
- GEOL 386, Geomorphology ............... 5
- GEOL 492B, Laboratory Experience in Teaching Earth Science ....................... 2
- MATH 153, Pre-Calculus Mathematics 1 . . 5
- CHEM 111, 111LAB, OR
- CHEM 181, 181LAB, General Chemistry 5
- GEOG 388, Climatology ................... 5
PHYS 101, 101LAB, Astronomy of Stars and Galaxies OR PHYS 102, 101LAB, Astronomy of the Solar System .......................... 5
SCED 324, Science Education in Secondary Schools .......................... 4
SCED 495, Research ......................................... 1-3

Total 64-67

Earth Science Minor

This minor is restricted to students working on a teaching major in biology, chemistry or physics. Earth Science minors will receive a Washington State teaching endorsement in earth science only upon passing the WEST-E (PRAXIS II) exam for Earth Science. SCED 324 requires admission to the Teacher Education Program.

Required Courses Credits
GEOL 101, Physical Geology OR GEOL 102, Geology of National Parks .......................... 4
GEOL 101LAB, Physical Geology Laboratory .......................... 1
GEOL 200, Earth Evolution and Global Change .......................... 5
GEOL 350, Northwest Geology ........................................ 4
GEOL 380, Environmental Geology and Natural Hazards .......................... 4
GEOL 492B, Laboratory Experience in Teaching Earth Science .......................... 2
GEOG 388, Climatology ........................................ 5
PHYS 101, 101LAB, Astronomy of Stars and Galaxies OR PHYS 102, 101LAB, Astronomy of the Solar System .......................... 5
SCED 324, Science Education in Secondary Schools .......................... 4

Total 34

Geology Courses

GEOL 101, Physical Geology (4). Corequisite, GEOL 101LAB. An introduction emphasizing the origin and nature of the common rocks, and the continually changing features of the earth’s crust. Four lectures per week. Formerly GEOL 145. Students may not receive credit for both. Students may not receive credit for both GEOL 101 and GEOL 102.

GEOL 101LAB, Physical Geology Laboratory (1). Corequisite, GEOL 101 or GEOL 102. Application of map study to geological processes and land forms, identification of rocks and minerals. Two hours laboratory per week. May require field trips. Formerly GEOL 145.1. Students may not receive credit for both.

GEOL 102, Geology of National Parks (4). Corequisite, GEOL 101LAB. Fundamentals of geology applied to selected national parks in North America. Four lectures per week. Formerly GEOL 150. Students may not receive credit for both. Students may not receive credit for both GEOL 101 and GEOL 102.

GEOL 107, Volcanoes, Earthquakes, and Civilization (5). The role of natural geologic processes such as volcanoes, earthquakes and climate change in shaping the earth, the environment and human civilization. Four hour lecture per week plus required field trips. Formerly GEOL 170. Students may not receive credit for both.

GEOL 108, Introduction to Environmental Geology (5). Interaction between human activity and geological processes. Scientific discussion of global environmental issues such as ozone depletion, climate change, geologic hazards, natural resources and water use. Formerly GEOL 180. Students may not receive credit for both.

GEOL 188, Field Trips - Geologic Field Studies (1-3). Travel to field locations and study of specific geologic phenomena. May be repeated twice for trips to areas of significantly different geologic content. Grade will be S or U. Extra fees required.

GEOL 200, Earth Evolution and Global Change (5). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB. Evolution of Earth, plate tectonics, life, and climate over the last 4.5 billion years. Three lectures, four hours laboratory per week. Formerly GEOL 146. Students may not receive credit for both.

GEOL 210, Introduction to Geologic Field Methods (4). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB. Introduction to the basic methods of geologic field investigation. Emphasis on constructing geologic maps. The class will consist of two weeks in the field, primarily along the eastern front of the Sierra Nevada, California, or other regions in the western United States. The class will be offered during the summer break or as arranged by the instructor. Students will register for the class during the immediately subsequent academic year quarter. Extra fees required.

GEOL 295, Sophomore Research (1-6). By permission only. May be repeated for up to 12 credits.

GEOL 304, Plate Tectonics (5). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB, GEOL 200. Solid-earth processes, in a plate-tectonic framework, which integrates global marine and terrestrial geologic and geophysical data. Three hours lecture per week plus three hours of lab.

GEOL 308, Cascade Volcanoes (3). Study of present and past volcanic activity in the Pacific Northwest, related volcanic deposits, and potential volcanic hazards.

GEOL 320, Rocks and Minerals (5). Prerequisites, GEOL 101 or GEOL 102, and GEOL 101LAB and one Chemistry course (may be taken concurrently), or permission of instructor. Identification, classification, and evolution of common igneous and metamorphic rocks. Includes recognition and interpretation of rocks in typical field exposures. Three hours lecture and three hours laboratory per week plus required field trips.

GEOL 346, Mineralogy (5). Prerequisites, GEOL 320, or permission of instructor. Physical, chemical and crystallographic properties, and occurrence of minerals. Examination and description of hand specimens and crystal models. Theory and practice in optical mineralogy and X-ray diffraction. Four lectures and three hours laboratory per week.

GEOL 350, Northwest Geology (4). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB. Fundamentals of geology applied to the Pacific Northwest. Specific case studies may include student presentations. Course designed for students planning to teach in Washington public schools. Four hours per week.

GEOL 360, Structural Geology (5). Prerequisite, GEOL 200. Introduction to the basic principles of rock deformation with an emphasis on the geometry, styles, and mechanics of faulting and folding and the stereographic projection and analysis of geologic structures. Three lectures and four hours laboratory per week. Field trips required.

GEOL 370, Stratigraphy (5). Prerequisite, GEOL 200. Origin of sedimentary rocks, physical processes and stratigraphic principles. Identification of sedimentary rocks in hand sample. Four hours lecture and four hours laboratory per week. Three day field trip required.

GEOL 377, Regional Natural History (2). Prerequisite, permission of instructor. Classroom study of the natural history of a selected region as preparation for one-to-two week field trip. Emphasis will be on developing background skills to undertake a field exploration over the quarter (winter, spring, summer) break. Subtitles will identify the selected geographical region (e.g. Baja California Natural History). GEOL 377 and BIOL 377 are equivalent courses. May be repeated for credit under a different subtitle (region). Formerly GEOL 377.1.

GEOL 377LAB, Regional Natural History (3). Corequisite, GEOL 377 and prerequisite, permission of instructor.
Special fees required. Administered through Continuing Education. One-to-two week field trip to explore biological and physical patterns and processes in selected regions of North America. Emphasis will be on recording field observations, keeping a field journal, field study techniques, and performing investigations chosen and developed by student participants. Subtitles will identify the region studied. GEOL 377LAB and BIOL 377LAB are equivalent courses. Formerly GEOL 377.2. May be repeated for credit under a different subtitle.

GEOL 380. Environmental Geology and Natural Hazards (4). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB or permission of instructor. Examine interactions between humans and their environment from a geologic perspective, evaluating problems such as geologic hazards and the use of earth's resources. Four lectures per week and required field trips.

GEOL 381. Environmental Mineralogy (4). Prerequisites, GEOL 101 or GEOL 102, and GEOL 101LAB. Role of minerals in issues of environmental and cultural concern, including acid mine drainage, biominalization, urban and nuclear waste barriers, and buildingstone deterioration/preservation.

GEOL 386. Geomorphology (5). Prerequisites, GEOL 101 or GEOL 102, and GEOL 101LAB or GEOG 107 or permission. Descriptive and interpretive examination of the Earth's landforms. Four lectures and three hours laboratory or field trips. GEOL 386 and GEOG 386 are equivalent courses. Students may not receive credit for both.

GEOL 388. Field Trips (1-3). Prerequisite, permission of instructor. Intensive study of geological phenomena on field trips up to two weeks in length. Three days field work for each credit. Course may be repeated for areas of significantly different geologic content. Grade will be S or U. Extra fees required.

GEOL 392. Lab Experience Teaching Physical Geology (1). Prerequisite, GEOL 101 or GEOL 102 and GEOL 101LAB or GEOG 107 or permission of the instructor. May be taken twice for credit. Grade will be S or U. Formerly GEOL 393.

GEOL 395. Junior Research (1-6). By permission only. May be repeated for up to 12 credits.

GEOL 396. Individual Study (1-6). Prerequisite, permission of instructor.

GEOL 398. Special Topics (1-6).

GEOL 404. Intermediate GIS (4). Prerequisite, GEOG 303/403 or permission. Applied concepts, principles, and operation of fundamental GIS applications, including raster-vector data models, topology, digitizing, and various analytical techniques such as overlay, buffers, and Boolean queries. Lecture and practical applications. GEOL 404, ANTH 404 and GEOG 404 are equivalent courses. Students may not receive credit for more than one. Formerly ANTH/GEOG/GEOL 385.

GEOL 410. Snow Sciences: The Physics of Avalanches (5). Prerequisite, permission of instructor. Physical processes in avalanches and snow dynamics; snowpack accumulation, redistribution, metamorphism, energy balance, ablation, and runoff. Field investigations are required under rigorous outdoor conditions. Three hours lecture and six hours field laboratory per week.

GEOL 415. Earthquake Geology and Neotectonics (5). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB, and permission. Geomorphology, stratigraphy, and structural geology applied to the study of active faults and folds in a variety of tectonic settings. Relation of seismicity and geodetic measurements to geologic structure and active tectonic processes, including case studies of selected earthquakes. Three hours lecture and four hours laboratory per week. GEOL 415 and GEOL 515 are equivalent courses. Students may not receive credit for both.

GEOL 417. Advanced GIS (4). Prerequisite, GEOG 404, ANTH 404, or GEOL 404 or permission of instructor. Advanced GIS principles, techniques, analysis, and application. Lecture and practical hands-on experience. Applied experience using GIS software. GEOL 417, ANTH 417 and GEOG 417 are equivalent courses. Students may not receive credit for more than one.

GEOL 425. Environmental Geochemistry (5). Prerequisite, CHEM 181, 181LAB, 182 and 182LAB, or permission of instructor. Global geochemical cycles, influences of rocks and soils on water chemistry, behavior of isotopes and trace elements. Includes class project studying local environmental geochemistry topic. Three lectures plus one 3-hour lab per week. GEOL 425 and GEOL 525 are equivalent courses. Students may not receive credit for both.

GEOL 430. Remote Sensing (5). Prerequisites, GEOL 410 or GEOL 210, or permission of instructor. Principles of acquisition, analysis, and use of remotely sensed data (LANDSAT, SPOT, Ikonos, etc.). Applied experience using image processing software. Three hours lecture and three hours laboratory per week. GEOL 430, GEOG 430 and GEOG 530 are equivalent courses. Students may not receive credit for more than one course.

GEOL 432. Field Geodetic Techniques (3). Training in field geodetic techniques, including scientific application of two or more precision surveying instruments: geodetic GPS, differential GPS, and electronic distance meter. Three hours a week and field project, or one-week field course. GEOL 432 and GEOL 532 are equivalent courses. Students may not receive credit for both.

GEOL 445. Hydrogeology (5). Prerequisites, GEOL 101 or GEOL 102 and 101LAB and MATH 154, or permission of instructor. Study of the occurrence and movement of ground water using geology, hydrology and geochemistry, with an emphasis on practical problems in water management. Three hours lecture and three hours laboratory per week. GEOL 445 and GEOL 545 are equivalent courses. Students may not receive credit for both.

GEOL 452. Geophysics (4). Prerequisites, MATH 154, or permission of instructor. Basic elasticity theory, gravity and geoid analysis. Terrestrial heat flow, Seismology. Three hours lecture per week plus four hours of scientific computing lab. No prior Unix experience required. Formerly GEOL 485; students may not receive credit for both.

GEOL 453. Seismology (5). Prerequisites, MATH 173 or permission of instructor. Elasticity theory, the wave equation, ray theory, diffraction, waveform modeling, travel time inversion. Data analysis. Three hours lecture per week plus four hours of scientific computing lab. Offered alternate years. GEOL 453 and GEOL 553 are equivalent courses. Students may not receive credit for both.

GEOL 454. Geostatistics (5). Introduction to statistical analysis and numerical simulation of problems relevant to Earth science. Three hours of lecture and three hours of lab. No prior Unix experience necessary. GEOL 454 and GEOL 554 are equivalent courses. Students may not receive credit for both.

GEOL 455. Applied Geophysics (4). Prerequisites, MATH 172 and PHYS 181. Background, principles, and techniques of geophysics as applied to geologic, environmental, and exploration problems. Three hours lecture plus two hours of laboratory or field work per week. required field trips. GEOL 455 and GEOL 555 are equivalent courses. Students may not receive credit for both.

GEOL 474. Quaternary Geology (4). Prerequisite, GEOL 386 or permission. Study of geological processes affecting Earth’s most recent history. Course emphasizes Quaternary environmental change, glacial epochs, paleoclimatic methods, and dating techniques. GEOL
GEOL 474 and GEOL 574 are equivalent courses. Students may not receive credit for both.

GEOL 475. Petrography and Petrogenesis (5). Prerequisites, GEOL 346. Petrogenetic, hand specimen, and thin section study of igneous, metamorphic, or sedimentary rocks. Three hours lecture and four hours laboratory or field work per week plus required field trips. GEOL 475 and GEOL 575 are equivalent courses. Students may not receive credit for both. Offered in alternate years.

GEOL 476. Sedimentary Petrography (5). Prerequisites, GEOL 200 and 346. Analysis and interpretation of depositional systems. Study of classic and carbonate rocks in hand sample, thin section, and in the field. Three hours lecture and four hours laboratory per week. GEOL 476 and GEOL 576 are equivalent courses. Students may not receive credit for both. Offered in alternate years.

GEOL 478. Volcanology (5). Prerequisites, GEOL 346 or consent of instructor. Study of volcanoes and associated deposits, styles of eruption, physical and chemical controls on eruption mechanisms, and volcanic hazards and hazard mitigation. Three hours lecture and four hours laboratory per week required field trips. GEOL 478 and GEOL 578 are equivalent courses. Students may not receive credit for both. Offered in alternate years.

GEOL 480. Geochemistry (4). Prerequisites, GEOL 320, CHEM 182, CHEM 182LAB, and MATH 154, or permission of instructor. An introduction to the branches of geochemistry, including the origin of elements, age dating, isotope geochemistry, and petrochemistry. Four hours lecture per week plus required field trips.

GEOL 481. Mineralogy and Planetary Materials (4). Prerequisites, GEOL 346 and CHEM 182, or permission of instructor. Focused study of rock-forming silicate minerals; occurrences, measurement and graphical representation of compositions, and interpretation in terms of igneous and metamorphic petrogenesis. GEOL 481 and GEOL 581 are equivalent courses. Students may not receive credit for both.

GEOL 483 Isotope Geochemistry (5). Prerequisites, CHEM 182, CHEM 182LAB and MATH 154 or permission of instructor. Covers principles of isotope geochemistry and applications to studies of geological processes such as hydrologic cycling, volcanic petrogenesis, and climate change. Three hours lecture per week plus required laboratory work and field trips. GEOL 483 and GEOL 583 are equivalent courses. Students may not receive credit for both. Offered in alternate years.

GEOL 487. End of Major Review Seminar (1). Prerequisite, students must be seniors intending to graduate during the current year. Students must be familiar with the language of geology and possess certain basic geologic skills. Coordinates student participation in program assessment activities and provides a structured avenue for student input into program goals. Grade will be S or U.

GEOL 488. Senior Colloquium in Geology (4). Prerequisite, senior standing or permission of instructor. Lecture, reading, and presentation of various topics in geology. Three hours lecture plus three hours of discussion per week.

GEOL 489. Geologic Field Methods (6-12). Prerequisites, GEOL 101 or GEOL 102 and GEOL 101LAB, GEOL 200, GEOL 360. Emphasis is placed on observation and recording of lithologic and structural features, measurement of stratigraphic and structural sections, applications of various survey methods, and plotting geologic data on topographic and aerial photographs in the field. The class will be offered during summer or winter break, or as arranged by the instructor. Credits will be carried in concurrent or immediately subsequent academic year quarter. Extra fees required.

GEOL 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

GEOL 491. Workshop (1-6).

GEOL 492A. Experience Teaching Upper Level Geology (2). Prerequisite, permission of instructor. Assisting with instruction in upper level Geology major lab or field courses. May be repeated once for the same course, and up to a total of four times. Grade will be S or U. Formerly GEOL 493.

GEOL 492B. Laboratory Experience Teaching Earth Science (2). Prerequisite, GEOL 101 or GEOL 102 and GEOL 101LAB or permission of the instructor. Course designed for future Earth Science teachers in secondary schools. Assist teaching one laboratory section of GEOL 101LAB and discuss laboratory teaching methods. Grade will be S or U. Formerly GEOL 394.

GEOL 494. Applied GIS Project (2-6). Prerequisite, ANTH/EGOG 215 and permission of instructor. GIS projects in Anthropology, Biology, Geography, Geology, and Resource Management. May be repeated by permission of department chair. GEOL 494, ANTH 494 and GEOG 494 are equivalent courses. Formerly GEOL 492.

GEOL 495. Senior Research (1-6). By permission only. May be repeated up to 12 credits.

GEOL 496. Individual Study (1-6). Prerequisite, permission of instructor.

GEOL 498. Special Topics (1-6).

GEOL 499. Seminar (1-5).

Geology Courses on Reserve

GEOL 420. Tectonic evolution of western North America (4)

GERONTOLOGY

Faculty
Director: Jeff Penick
Psych Bldg 461

Faculty Associates
Joan Amby, Assistant Professor of Family Studies
Melody Madlem, Assistant Professor of Health Education & Leisure Services
Phillip W. Mattocks, Adjunct Professor of Biological Sciences
Jeffrey M. Penick, Assistant Professor of Psychology

Elizabeth M. Street, Professor of Psychology

General Departmental Information

The Department of Psychology coordinates the interdisciplinary Gerontology major leading to the Bachelor of Science degree as well as a Gerontology minor for students majoring in other fields of study. The major, which includes both theoretical and practical components, is designed for students who wish to pursue a career in service to older people or who wish to learn more about this increasingly important segment of the population. Field experience in public or private agencies concerned with the elderly is a part of the major.

The major prepares students for a variety of professional and para-professional employment opportunities in community education, government agencies, senior centers, nursing homes, retirement villages, hospitals, personnel and business administration, and retirement programs. Prerequisites for the major: for FCSF 435, prerequisite FCSF 234 or permission; for FCSN 441, prerequisite FCSN 245; for PSY 452, PSY 313 or 314 recommended.
Bachelor of Science

Gerontology Major
46 credits

Gerontology Major
60 credits

Students may choose either a 46 credit major (3715) or a 60 credit major (3720).

Required Courses Credits
BIOL 201, Human Physiology 5
PSY 300, Research Methods in Psychology
OR SOC 465, Methods of Social Research 5
SOC 325, Aging 4
HED 412, Health Aspects of Aging 3
BIOL 456, Biology of Aging 3
PSY 454, The Helping Interview 3
PSY 452, Adult Development and Aging 4
PSY 454, The Helping Interview 3
BIOL 456, Biology of Aging 3
SOC 320, Death and Dying 5
SOC 327, Sociology of Health 4
SOC 330, Sociology of Leisure 5
SOC 373, Social Groups 5
POSC 320, Public Administration 5
FCSN 441, Nutrition and Aging 3
Other Department approved electives

Total 20

Gerontology Courses
GERO 490. Cooperative Education (1-12).
An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

GERO 491. Workshop (1-6).
GERO 496. Individual Study (1-6). Prerequisite, permission of instructor and Department Chair.

GERO 498. Special Topics (1-6).
GERO 499. Seminar (1-5). Prerequisite, permission of instructor and Department Chair.

GERO 499.1. Capstone Seminar (1-6). Prerequisites, senior standing and permission of instructor. A summary review, analysis and integration of issues in Gerontology and evaluation of student's program.

HEALTH, HUMAN PERFORMANCE AND RECREATION

Faculty
Chair: Robert McGowan
Physical Education Building 107

Professors
Kenneth Briggs, Health Education - Pedagogy
Leo D’Acquisto, Exercise Science
Stephen C. Jefferies, Physical Education - Pedagogy
Andrew Jenkins, Health Education
Vincent Nethery, Exercise Science
William Vance, Recreation Management

Associate Professors
Melody Madlem, Health Education
Barbara Masberg, Recreation and Tourism
Kirk E. Mathias, Physical Education, Pedagogy

Assistant Professors
Carolyn Booth, Paramedics
Tim Burnham, Exercise Science
Dorothy Chase, Recreation and Tourism
Harry Papadopoulos, Exercise Science

Lecturers
Debra D’Acquisto, PE Activities, Exercise Science
Mark Perez, Health Education
Tim Riles, Physical Education Pedagogy
Therese Young, Dance

Emeritus Professor
Walter Arlt, Physical Education
Gary Frederick, Physical Education - Administration

General Departmental Information

The Department of Health, Human Performance and Recreation has many programs which lead to the Bachelor of Science or Bachelor of Arts degree. In addition to professional preparation in exercise science, school and community health, physical education, paramedic studies, and recreation and tourism management, the Department also encourages students to develop skills in physical activities that will enable them to enjoy fitness, health, and recreational activities.

Health, Human Performance and Recreation Programs

Bachelor of Science
Physical Education

Physical Education:
Teaching K-12

Health Fitness Endorsement
Program Director: Stephen C. Jefferies

Program Advisors:
Ken Briggs, Health Endorsement
Kirk Mathias, PE Pedagogy

This major satisfies the Washington State endorsement for Health/Fitness.

Admission Requirements

Students may enter the Physical Education major in either the fall or winter quarters. Fall quarter admittance is recommended. Graduating Students may receive a Washington State K-12 teaching endorsement in Health & Fitness. Students complete the Physical Education major as part of a cohort group. Students considering this major should contact the PE Program
Director before beginning the program. The following additional requirements also apply:
1. Classes in this major are organized over 6-quarters and must be taken in sequence.
2. Students who receive less than a C grade in any classes that are prerequisites for others will not be permitted to continue in the major.
3. The teaching major (6101) qualifies students for teaching, supervising and coordinating physical education and health education in K-12 public schools.
4. Students taking this major who plan to teach in Washington State public schools are required to complete the professional education program requirements offered through the Department of Education.
5. Students may also graduate with a non-teaching B.S. degree in Physical Education (6100).
6. All students must complete a professional portfolio prior to beginning student teaching. Non-teaching majors must complete the portfolio prior to graduation.
7. Professional dress requirements apply to many classes in this major. Students must comply with these requirements to participate in the program.

See the Health, Human Performance and Recreation Program Web site for more information:
http://www.cwu.edu/~pehls/pe.htm

For the major application procedure, contact the Physical Education Program Director.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 245, First Aid</td>
<td>3</td>
</tr>
<tr>
<td>PE 280, Professional Foundations</td>
<td>3</td>
</tr>
<tr>
<td>PE 340A, PE Teaching Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>PE 340B, PE Teaching Practicum II</td>
<td>2</td>
</tr>
<tr>
<td>PE 340C, PE Teaching Practicum III</td>
<td>2</td>
</tr>
<tr>
<td>PE 340D, PE Teaching Practicum IV</td>
<td>2</td>
</tr>
<tr>
<td>PE 341A, Pedagogical Foundations of PE I</td>
<td>3</td>
</tr>
<tr>
<td>PE 341B, Pedagogical Foundations of PE II</td>
<td>3</td>
</tr>
<tr>
<td>PE 341C, Pedagogical Foundations of PE III</td>
<td>3</td>
</tr>
<tr>
<td>PE 342A, Movement Analysis and Application I</td>
<td>4</td>
</tr>
<tr>
<td>PE 342B, Movement Analysis and Application II</td>
<td>4</td>
</tr>
<tr>
<td>PE 342C, Movement Analysis and Application III</td>
<td>6</td>
</tr>
<tr>
<td>PE 342D, Movement Analysis and Application IV</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 250, Anatomical Kinesiology</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 351, Scientific Foundations of Health and Fitness</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 463, Pediatric Issues in Exercise Science</td>
<td>5</td>
</tr>
<tr>
<td>HED 101, Health Essentials</td>
<td>4</td>
</tr>
<tr>
<td>HED 210, Drugs and Health</td>
<td>3</td>
</tr>
<tr>
<td>HED 230, Foundations of Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HED 324, Noninfectious Disease</td>
<td>4</td>
</tr>
<tr>
<td>HED 345, School Health Curriculum</td>
<td>4</td>
</tr>
<tr>
<td>Materials</td>
<td>3</td>
</tr>
<tr>
<td>HED 422, Methods for Health Promotion</td>
<td>4</td>
</tr>
<tr>
<td>HED 445, Health Education</td>
<td>4</td>
</tr>
<tr>
<td>Professionalism</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 78

Bachelor of Science

Exercise Science Major

Program Director: Vincent M. Nethery, Ph.D.

Program Advisors:
Dr. Leo D’Acquisto
Dr. Tim Burnham
Dr. Harry Papadopolus

The Exercise Science major prepares students to meet the theoretical and practical requirements necessary to evaluate and plan exercise programs for diverse populations, and to pursue certifications necessary for entry into, and advancement within, various health and fitness employment settings. Exercise Science major graduates work in adult and corporate fitness programs of business, industry, public agencies, and schools. In addition, there are also career opportunities in sectors including fitness clubs, cardiac rehabilitation programs, wellness centers, obesity clinics, and physical/occupational therapy clinics.

Admission Requirements

Admission to the Exercise Science major is selective. Students wishing to attain full admission must meet the following requirements:
1. Successful completion of the following courses: EMS 245, EXSC 250, EXSC 254.
2. Students must be admitted to the Exercise Science major prior to enrolling in 300 or above level Exercise Science courses.
3. Students must receive a grade of C (2.0) or better in all of the major courses.

For the major application procedure, contact the Exercise Science program director.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 101, Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>FCSN 245, Basic Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>EMS 245, First Aid</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 250, Anatomical Kinesiology</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 254, Foundations of Fitness</td>
<td>3</td>
</tr>
<tr>
<td>HED 324, Noninfectious Disease</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 348, Prevention and Treatment of Athletic Injuries</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 351, Scientific Foundations of Health and Fitness</td>
<td>5</td>
</tr>
<tr>
<td>COM 345, Business and Professional Speaking OR COM 250, Public Speaking: Practice and Criticism</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 450, Physiology of Exercise</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 318, Aerobic Fitness</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 360, Principles of Strength Training</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 446, Sports Nutrition and Weight Control</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 455, Fitness Assessment and Exercise Prescription</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 456, Administration of Programs for Special Populations</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 457, Exercise Adherence Strategies</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 461, Current Issues in Fitness and Exercise Science</td>
<td>2</td>
</tr>
<tr>
<td>EXSC 464, Management of Fitness Facilities and Programs</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 495A, Fitness Centers/Clubs OR EXSC 495B, Clinical OR EXSC 495C, Management</td>
<td>2</td>
</tr>
<tr>
<td>EXSC 495D, Laboratory Assessment</td>
<td>2</td>
</tr>
<tr>
<td>EXSC 490, Internship</td>
<td>10-12</td>
</tr>
</tbody>
</table>

Total 83-85

Bachelor of Science

Paramedic Major

Paramedic Program (EMS Education)

Program Director: Carolyn Booth

Medical Program Director: Dr. Jackson Horsley, M.D.

The Paramedic major is designed for students who plan to become a certified pre-hospital professional in emergency medical services.

The curriculum includes classroom lectures, group discussions, laboratory skills training, hospital clinical experience with observations and practice, simulated exercises and on-the-job training with an advanced life support service which will fully prepare the student for occupations related to advanced emergency medical services. This major is not for students interested in physicians assistant programs. This nationally accredited program meets all the national curriculum and State of Washington standards.

In addition to general admissions, all applicants must meet entrance criteria (State EMT certification and pre-hospital experience) and be approved by the paramedic screening committee before being admitted into the program. AA degree or two years college experience recommended.

Completion of the major listed below and other degree requirements leads to the Bachelor of Science Paramedic degree and eligibility to take the National Registry EMT-P examination for paramedic certification. For students not seeking a degree a certification option is available.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 245, First Aid</td>
<td>3</td>
</tr>
<tr>
<td>EMS 319, Emergency Medical Technician</td>
<td>8</td>
</tr>
<tr>
<td>EMS 335, Introduction to Paramedic Training</td>
<td>3</td>
</tr>
<tr>
<td>EMS 335, Introduction to Paramedic Training</td>
<td>3</td>
</tr>
</tbody>
</table>
Students will be required to complete both coursework and technique classes in those areas of dance frequently taught in a K-12 setting. Additionally, students will develop competencies in choreography, rhythmic concepts, dance production and teaching.

**Requirement:** Minimum of one year active membership in Orchesis.

**Required Courses**

- PED 116, Beginning Folk Dance: 1
- PED 118, Beginning Ballroom Dance: 1
- PED 161, Cultural History of Dance: 4
- PED 201A, Modern Dance I: 2
- PED 201B, Modern Dance II: 2
- PED 202A, Ballet I: 2
- PED 211, Music for Dance - Rhythms and Resources: 2
- PED 302, Dance Production: 3
- PED 309, Teaching Methods: Recreational Dance: 3
- PED 314, Dance for Children: 3
- Department approved electives: 4

**Total** 63

**Physical Education Minors**

For minor application procedure, contact the Physical Education Program Director.

**Athletic Training Minor (non-certified program)**

This minor provides students with many of the experiences needed to become an athletic trainer. It does not however qualify students as a National Athletic Training Association (NATA) certified Athletic Trainer. Students interested in becoming NATA certified should contact the NATA for more information.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HED 101, Health Essentials</td>
<td>4</td>
</tr>
<tr>
<td>FCSN 245, Basic Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>EMS 245, First Aid</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 250, Anatomical Kinesiology</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 348, Prevention and Treatment of Athletic Injuries</td>
<td>4</td>
</tr>
<tr>
<td>EXSC 351, Scientific Foundations of Health and Fitness</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 348, Therapeutic Exercise</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 450, Physiology of Exercise</td>
<td>5</td>
</tr>
<tr>
<td>EXSC 452, Advanced Athletic Training</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 37

**Dance Minor**

Program Coordinator: Therese Young

The Dance Minor is designed for students who wish to broaden their academic background and receive a well-rounded dance education, thus preparing them to teach dance and/or dance activities in a wide variety of settings.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PED 116, Beginning Folk Dance: 1</td>
<td></td>
</tr>
<tr>
<td>PED 118, Beginning Ballroom Dance: 1</td>
<td></td>
</tr>
<tr>
<td>PED 161, Cultural History of Dance: 4</td>
<td></td>
</tr>
<tr>
<td>PED 201A, Modern Dance I: 2</td>
<td></td>
</tr>
<tr>
<td>PED 201B, Modern Dance II: 2</td>
<td></td>
</tr>
<tr>
<td>PED 202A, Ballet I: 2</td>
<td></td>
</tr>
<tr>
<td>PED 211, Music for Dance - Rhythms and Resources: 2</td>
<td></td>
</tr>
<tr>
<td>PED 302, Dance Production: 3</td>
<td></td>
</tr>
<tr>
<td>PED 309, Teaching Methods: Recreational Dance: 3</td>
<td></td>
</tr>
<tr>
<td>EXSC 250, Anatomical Kinesiology: 5</td>
<td></td>
</tr>
<tr>
<td>EXSC 301, Choreography: 3</td>
<td></td>
</tr>
<tr>
<td>EXSC 302, Dance Production: 3</td>
<td></td>
</tr>
<tr>
<td>EXSC 309, Teaching Methods: Recreational Dance: 3</td>
<td></td>
</tr>
<tr>
<td>PED 314, Dance for Children: 3</td>
<td></td>
</tr>
<tr>
<td>PED 315, Teaching Methods: Modern Dance and Ballet (3): 3</td>
<td></td>
</tr>
<tr>
<td>PED 316, Beginning Folk Dance: 1</td>
<td></td>
</tr>
<tr>
<td>PED 118, Beginning Ballroom Dance: 1</td>
<td></td>
</tr>
</tbody>
</table>

**Total Endorsement Credits** 34

**Coaching Minor**

Students are recommended to obtain state teaching certification for permanent employment coaching opportunities.

The Coaching Minor course of study at Central Washington University meets the standards of the Washington Interscholastic Athletic Association regarding recommended standards for employment at the preferred Coach Level. Requirements (Item 23.4.1, W.I.A.A. Handbook) for all levels listed below.

These levels are:
- Beginning Coach
- Experienced Coach
- Preferred Coach

Students selecting this minor must complete EXSC 351 as a prerequisite to EXSC 450. This course of study qualifies the student to be certified by the W.I.A.A. at the preferred coaching level.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 245, First Aid: 3</td>
<td></td>
</tr>
<tr>
<td>EXSC 250, Anatomical Kinesiology: 5</td>
<td></td>
</tr>
<tr>
<td>PE 341A, Pedagogical Foundations I: 3</td>
<td></td>
</tr>
<tr>
<td>PE 340B, Practicum II: 2</td>
<td></td>
</tr>
<tr>
<td>EXSC 348, Prevention and Treatment of Athletic Injuries: 4</td>
<td></td>
</tr>
<tr>
<td>EXSC 351, Scientific Foundations of Health and Fitness: 4</td>
<td></td>
</tr>
<tr>
<td>PE 453, Psychology and Sociological Foundations of Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 346, Administration of Athletics: 3</td>
<td></td>
</tr>
<tr>
<td>HED 205, Drugs and Sports: 2</td>
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<td>Electives: 6</td>
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<tr>
<td>PE 442 Field Work in Physical Education: 3</td>
<td></td>
</tr>
<tr>
<td>PE 321, Football Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 322, Wrestling Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 323, Basketball Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 324, Track Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 325, Baseball Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 329, Tennis Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 330, Volleyball Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 333, Swimming Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 521, Advanced Football Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 523, Advanced Basketball Coaching: 3</td>
<td></td>
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<tr>
<td>PE 524, Advanced Track Coaching: 3</td>
<td></td>
</tr>
<tr>
<td>PE 525, Advanced Baseball Coaching: 3</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 27

**Exercise Science Minor**

Program Director: Vincent Nethery, Ph.D.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXSC 250, Anatomical Kinesiology: 5</td>
<td></td>
</tr>
<tr>
<td>EXSC 254, Foundations of Fitness: 3</td>
<td></td>
</tr>
<tr>
<td>EXSC 351, Scientific Foundations of Health and Fitness: 4</td>
<td></td>
</tr>
<tr>
<td>EXSC 450, Physiology of Exercise: 5</td>
<td></td>
</tr>
<tr>
<td>EXSC 455, Fitness Assessment and Exercise Prescription: 5</td>
<td></td>
</tr>
<tr>
<td>Select from one of the following: 3</td>
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</tr>
<tr>
<td>EXSC 360, Scientific Principles of Strength Training: 4</td>
<td></td>
</tr>
<tr>
<td>EXSC 456, Exercise Programming for Special Populations: 4</td>
<td></td>
</tr>
<tr>
<td>EXSC 457, Exercise Adherence Strategies: 3</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 26-27
Health, Human Performance and Recreation Courses

Paramedic Courses
EMS 245. First Aid (3). American Red Cross First Aid Course for which standard certificate may be granted. Formerly PE 245. Students may not receive credit for both.

EMS 319. Emergency Medical Technician (EMT) (8). Prerequisite, EMS 245 and attained CPR certification for the Professional Rescuer or equivalent. EMT Basic is the first certification level for students pursuing careers in the EMS field. After completing the EMS 319 course, students are eligible to become state or nationally certified to care for the sick and injured in the pre-hospital setting. Formerly PE 319. Students may not receive credit for both.

EMS 335. Introduction to Paramedic Training (2). Prerequisites, EMS 319 and permission. Patient care skills, new equipment for patient treatment, medical-legal requirements. Formerly PE 335. Students may not receive credit for both.


EMS 337. Paramedic Clinical Training II (3). Prerequisites, BIOL 356, EMS 336 and permission. Intensive training in Cardiac Catheterization Laboratory, Cardiology, Dog Lab II, Emergency Room, Endotracheal Suctioning, Medication, Mobile Telemetry, Obstetrics, and Pediatrics. Formerly PE 337. Students may not receive credit for both.

EMS 345. Instructor’s First Aid (3). Prerequisite, EMS 245 or instructor’s permission. American Red Cross First Aid course for instructor’s certificate. Meets requirements for ski patrol. Formerly PE 345. Students may not receive credit for both.

EMS 400. Medical Measurements and Terminology (2). Prerequisites, EMS 319 and permission of instructor. Specialized medical terminology, medical weights and measurements. Spelling, pronunciation, and workable definition of commonly used medical words. Formerly PE 400. Students may not receive credit for both.

EMS 441. General Pharmacology for Paramedics (3). Prerequisite, EMS 440. Mechanism of action, indications and contraindications of drugs, their side effects, and dosage and administration. Formerly PE 441. Students may not receive credit for both.

EMS 443. Myocardial Disease and Arrhythmia Diagnosis (3). Prerequisite, BIOL 356. Study of conduction abnormalities of the heart and rhythm interpretation. Permission only. Formerly PE 443. Students may not receive credit for both.

EMS 444. Principles and Therapeutics of Advanced Life Support (3). Prerequisite, EMS 443. Treatment protocols, decision making with cardiac emergencies, integration of knowledge and skills of previous class content. Follow-up procedures involving drugs, defibrillation and oxygen therapy. Permission only. Formerly PE 444. Students may not receive credit for both.

EMS 450. Human Anatomy-Cadaver (1). Prerequisite, BIOL 355 and 356 or EXSC 250 and 351. A study of human anatomy from a systemic perspective using the cadaver as the learning medium. Oriented to students in emergency medicine and health science programs. Two hour laboratory per week. Formerly PE 250.1. Students may not receive credit for both.

EMS 451. Trauma for Advanced Life Support (3). Prerequisite, EMS 319. Trauma and related topics is a comprehensive course that provides an essential overview of care of the patient who has sustained accidental injury. Formerly PE 451. Students may not receive credit for both.

EMS 453. Emergencies in Pediatric/Geriatric Care (3). Emergency training in assessing, treating and transporting pediatric/geriatric patients. Formerly PE 459. Students may not receive credit for both.

EMS 459. Practicum in Paramedic Training (3-12). Prerequisite, EMS 444 and permission of instructor. Experience in the following: hospital, ambulance, emergency room, ICU/CCU. Paramedic majors must complete 12 credits. Grade will be S or U. Formerly PE 493.

Exercise Science Courses
EXSC 250. Anatomical Kinesiology (5). Study of skeletal and muscular systems, the fundamentals of biomechanics, and their applications to human movement, skill development and skill performance. Formerly PE 250. Students may not receive credit for both.

EXSC 254. Foundations of Fitness (3). Overview of the Fitness Industry, components of fitness and strategies to improve the health and well-being of the individual. Formerly PE 254 and PE 354. Students may not receive credit for more than one.

EXSC 318. Aerobic Fitness (3). Prerequisites, EXSC 250. This class provides the Fitness and Sports Management major with an in-depth exploration of various cardiovascular exercise activities and equipment. Formerly PE 318. Students may not receive credit for both.

EXSC 348. Prevention and Treatment of Athletic Injuries (4). Prerequisite, EXSC 250. Prevention and treatment of injuries and rehabilitation of injured athletes. Three hours lecture and two hours laboratory per week. Formerly PE 348. Students may not receive credit for both.

EXSC 351. Scientific Foundations of Health and Fitness (5). Examination of the digestive, respiratory, urinary, circulatory, nervous, endocrine, and reproductive systems of the human body. Four hours lecture and two hours laboratory per week. Formerly PE 351. Students may not receive credit for both.

EXSC 360. Scientific Principles of Strength Training (4). Prerequisites, EXSC 250 or permission. This course addresses the scientific and theoretical bases of program design in resistance training. Formerly PE 360. Students may not receive credit for both.

EXSC 438. Therapeutic Exercise (3). Prerequisites, EXSC 250 and EXSC 348. This course covers the understanding, design and development of rehabilitation exercises for acute, chronic and post operative injuries. Formerly EXSC 438. Students may not receive credit for both.

EXSC 446. Sports Nutrition and Weight Control (3). Prerequisite, FCSN 245 or permission. Study of interrelationship of factors required for successful weight control; modification of diet, activity, and behavior. Role of dietary factors in health and body function. Formerly PE 446. EXSC 446 and FCSN 446 are equivalent courses. Students may not receive credit for both.

EXSC 450. Physiology of Exercise (5). Prerequisite, EXSC 351 or permission. Acute and chronic responses of the metabolic, muscular, cardiovascular, pulmonary, endocrine, and thermoregulatory systems to physical work. Four hours lecture, two hours laboratory per week. Formerly PE 450. Students may not receive credit for both.

EXSC 452. Advanced Athletic Training (3). Prerequisite, EXSC 348. A detailed examination of injuries, therapeutic modalities, and rehabilitation in athletic training. Formerly PE 452. Students may not receive credit for both.

EXSC 455. Fitness Assessment and Exercise Prescription (5). Prerequisite, EXSC 450. Concepts and principles of appraising level of fitness, evaluating the results and designing physical fitness/exercise
EXSC 495B. Practicum: Clinical (2). Observation, monitoring, and supervised activity in clinical rehabilitation and athletic training setting. Grade will be S or U. Formerly PE 495.2.

EXSC 495C. Practicum: Management (2). Observation, monitoring, and supervised activity in fitness/health/sport management settings. Grade will be S or U. Formerly PE 495.3.

EXSC 495D. Practicum: Laboratory Assessment (2). Prerequisite, EXSC 495. Laboratory techniques for assessment of body composition, cardiovascular, strength, and flexibility components of fitness. Grade will be S or U. Formerly PE 495.4.

Physical Education Courses

PE 280. Professional Foundations of Physical Education (3). Introduction and orientation to the profession.

PE 298. Special Topics (1-6).

PE 300. Teaching Designs in Physical Education (4). Methodology of subject presentation and organization of teaching content. Three hours lecture and two hours laboratory per week.

PE 303. Basic Skills/Lead-Up Activities (3). Prerequisite, PE 300. The development and practice of basic motor patterns, elementary and complex physical skills, and organized physical activities appropriate for instruction in elementary school physical education. Two hours lecture and two hours laboratory per week.

PE 304. Teaching Methods: Soccer/Track and Field (3). Prerequisites, PE 300 and PETS 113 or permission. Knowledge of skills and the teaching of soccer and track and field. Two hours lecture and two hours laboratory per week.

PE 305. Teaching Methods: Raquet Sports (3). Prerequisites, PE 300, PEID 110, PEID 136, and PEID 123 or permission. Knowledge of skills and the teaching of badminton, handball, pickleball, raquetball, and tennis. Two hours lecture and two hours laboratory per week.

PE 306. Teaching Methods: Basketball/Volleyball (3). Prerequisites, PE 300 PETS 110 and PETS 116 or permission. Knowledge of skills and the teaching of basketball and volleyball. Two hours lecture and two hours laboratory per week.

PE 307. Teaching Methods: Fitness Activities (3). Prerequisites, PE 300, PEF 113, PEF 110, PEF 121 and PEAQ 111 or permission. Knowledge of skills and the teaching of indoor and outdoor fitness activities. Two hours lecture and two hours laboratory per week.

PE 308. Teaching Methods: Tumbling/Stunts/Gymnastics (3). Prerequisites, PE 300, PEGT 110 or PEGT 112 or permission. Knowledge of skills and the teaching of tumbling/stunts/gymnastics. Two hours lecture and two hours laboratory per week.

PE 313. Alternative Physical Education Activities (3). Prerequisite, PE 300. Non-traditional games and activities taught in public school physical education curriculums. Two hours lecture and two hours laboratory per week.

PE 321. Football Coaching (3).

PE 322. Wrestling Coaching (3).

PE 323. Basketball Coaching (3).

PE 324. Track Coaching (3).

PE 325. Baseball Coaching (3).

PE 329. Tennis Coaching (3).

PE 330. Volleyball Coaching (3).

PE 333. Swimming Coaching (3).

*PE 334. Physical Education Activities for the Elementary School (3). Selection, organization, and presentation of physical education activities in the elementary school.

*Enrollment is subject to being fully admitted to the Teacher Education Program.

PE 340A. PE Teaching Practicum I (1). Prerequisite, pre-major status in PE or permission. Students will observe and assist in PE classes at elementary and secondary levels in a local school for 4 hours/week throughout the quarter. Formerly PE 340.1. Students may not receive credit for both.

PE 340B. PE Teaching Practicum II (2). Prerequisite PE 340A or permission. Physical education teaching practicum. Formerly PE 340.2. Students may not receive credit for both.

PE 340C. PE Teaching Practicum III (2). Prerequisite, PE 340B or permission. Practicum will consist of two parts: 1) Assist in a PE class in Yakima or Wenatchee for 2 hours/week. 2) Plan and instruct at the Ellensburg 8th grade honor's camp. Formerly PE 340.3. Students may not receive credit for both.

PE 340D. PE Teaching Practicum IV (3). Prerequisite, PE 340C or permission. Physical education teaching practicum. Formerly PE 340.4. Students may not receive credit for both.

PE 341A. Pedagogical Foundations of PE I (3). Prerequisite, PE or Health Education majors only. Examination of selected pedagogical principles and their impact on the teaching of human movement. Formerly PE 341.1. Students may not receive credit for both.

PE 341B. Pedagogical Foundations of PE II (3). Prerequisite, PE 341A or permission. Examination of selected pedagogical principles and their impact on the teaching of human movement. Formerly PE 341.2. Students may not receive credit for both.
PE 341C. Pedagogical Foundations of PE III (3). Prerequisite, PE 341B or permission. Examination of specific pedagogical principles and their impact on teaching of human movement. Formerly PE 341. Students may not receive credit for both.

PE 342A. Movement Analysis and Application I (4). Prerequisite, PE or Health major or permission. Instruction in the analysis and teaching of locomotor and non-locomotor skills. Formerly PE 342.1. Students may not receive credit for both.

PE 342B. Movement Analysis and Application II (4). Prerequisite, PE 342A or permission. Identify critical components in manipulative movements. Examination of propulsive and receptive manipulative movements in a variety of application activities. Formerly PE 342.2. Students may not receive credit for both.

PE 342C. Movement Analysis and Application III (6). Prerequisite, PE 342B or permission. Identify critical components of selected outdoor pursuits, challenge activities, team sports and field events. Formerly PE 342.3. Students may not receive credit for both.

PE 342D. Movement Analysis and Application IV (4). Prerequisite, PE 342C or permission. Identify critical components in striking activities. Examination of striking movements in a variety of application activities. Formerly PE 342.4. Students may not receive credit for both.

PE 346. Administration of Athletics (3).

PE 347. Advanced First Aid (3). Prerequisite, EMS 245. American Red Cross and State Industrial First Aid course for which an advanced certification may be granted.

PE 352A. Officiating: Hockey/Volleyball (2). Formerly PE 352.1. Students may not receive credit for both.

PE 352B. Officiating: Basketball (2). Formerly PE 352.2. Students may not receive credit for both.

PE 355. Outdoor Pursuits (2). Prerequisite, PE 300. Course is limited to students pursuing the K-12 physical education teaching endorsement. Introduction to planning and instruction of selected outdoor pursuits suitable for inclusion in K-12 PE curriculums.

PE 361. Physical Education for the Handicapped (3). Review of the major physical handicaps; planning the physical education program for these conditions.

PE 362. Dance in Education (4).

PE 398. Special Topics (1-6).

PE 442. Field Work in Physical Education (1-4). Class to be arranged by college supervisor. Grade will be S or U. May be repeated.

PE 447. Physical Education Equipment and Facilities (3). Knowledge relating to purchase and care of equipment; planning of areas and facilities for athletics, recreation and physical education.

PE 448. Ethics in Sports (3). Ethical considerations involved in coaching, playing and administering sports.

PE 449. Past and Current Concepts in Physical Education (3). The historical background of physical education and sport; their roles in society and education.


PE 454. Motor Learning Theories (3). Theories dealing with factors which affect individual performance and learning differences in relation to human movement and skill learning. Two hours lecture and two hours laboratory per week.

PE 458. Measurement and Evaluation in Physical Education (3). The construction and use of tests which are unique to the field of physical education; physical fitness tests, skill tests, knowledge tests, attitude tests and medical tests.

PE 466. Supervision and Evaluation of Program (3).


PE 471. Philosophy of Elementary School Physical Education (3).

PE 475. Racism in Sport (3). The study of how racism may manifest itself psychologically, sociologically, and politically in the realm of sport.

PE 481. Organization of Physical Education and Intramurals (3). The nature, processes, and philosophy of physical education and intramural sports.

PE 484. Legal Liability and Risk Management (3). Aspects of personnel law and premises liability in public, private and “not for profit” education, human and social services organizations. Procedures for managing risks. Open to Recreation and Tourism Management and Physical Education majors, and HHPR graduate students only. PE 484 and RT 484 are equivalent courses. Formerly LES 484/PE 460. Students may not receive credit for more than one.

PE 485. Physical Growth and Motor Development (3). Prerequisites, EXSC 450 and PE 454. Study of patterns of physical growth and motor development that affect the learning and performance of physical skills from birth through senescence.

PE 491. Workshop Clinic (1-6). Letter grades or S or U grades may be given at the option of the Physical Education Department.

PE 492. Practicum (1-4). Prerequisite, permission of elementary physical education advisor. Practical experience working with children in physical education activities. May be repeated for credit. Four credits required in major.

PE 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

PE 498. Special Topics (1-6).

PE 499. Seminar (1-5). May be repeated.

Aquatics Courses

PEAQ 110. Springboard Diving (1).

PEAQ 111. Beginning Swimming (1).

PEAQ 112. Intermediate Swimming (1). Prerequisite, must be able to swim 50 yards.

PEAQ 113. Advanced Swimming (1). Prerequisite, ability to swim 200 yards continuously, employing at least three strokes. Refinement of standard strokes and dives.

PEAQ 114. Swim Conditioning (1). Prerequisite, must be an intermediate swimmer.

PEAQ 115. Water Polo (1). Prerequisite, must be an intermediate swimmer.

PEAQ 116. Aquacises (1). Designed to increase the physical fitness of individuals through water exercises and jogging. Open to both swimmers and non-swimmers.

PEAQ 198. Special Topics (1).

PEAQ 221. Lifeguard Training (3). Prerequisites, PEAQ 110 or permission. American Red Cross approved course for which certification may be granted. The course will include rescue technique, preventative lifeguarding and conditioning. Two hours lecture and one hour laboratory per week. Formerly PE 221. Students may not receive credit for both.

PEAQ 222. Lifeguard Training Instructor (4). Prerequisites, PEAQ 221 and current American Red Cross lifeguard training certificate. Certify students to teach the American Red Cross Basic Water Safety course. Emergency Water Safety course, lifeguard training and lifeguard training review. One hour lecture and two hours laboratory per week. Formerly PE 222. Students may not receive credit for both.

PEAQ 320. Water Safety Instructor (3). Prerequisite, intermediate swimmer. Students satisfactorily passing the Red Cross requirements will receive a Red Cross Water Safety Instructors Certificate. Two hours lecture and two hours laboratory per week. Formerly PE 320. Students may not receive credit for both.
Dance Courses

PED 112. Dance Rehearsal and Performance. (1-3). Open to individuals participating in performances of Orchesis Dance Company May be repeated for credit.

PED 113A Beginning Jazz Dance (1). Formerly PED 113.1.

PED 113B. Jazz Dance II (1). Prerequisite, PED 113A or permission. Formerly PED 113.2.

PED 113C. Jazz Dance III (1). Advanced level jazz dance technique. Formerly PED 113.3.

PED 115. Tap Dance (1).

PED 116. Beginning Folk Dance (1). Traditional recreational dances of various countries.

PED 117. Advanced Folk Dance (1).

PED 118. Beginning Ballroom Dance (1).

PED 119. Advanced Ballroom Dance (1). Prerequisite, PED 118 or permission.

PED 122. Tap Dance II (1). Prerequisite, PED 115 or permission.


PED 130. Beginning Yoga (1). May be repeated for credit.

PED 131. Yoga Level II (1). Prerequisite, PED 130. This class will review & refine techniques learned in the beginning yoga class, as well as further discussion and practice of yoga postures and other topics related to yoga.

PED 161. Cultural History of Dance (4). A survey course in the evolution of dance through the ages with emphasis on the major forces which have influenced dance in the 20th Century. Formerly PE 161. Students may not receive credit for both.

PED 198. Special Topics.

PED 201A. Modern Dance I (2). Basic modern dance techniques and beginning composition. One hour lecture, two hours laboratory per week. Formerly PE 201.1. Students may not receive credit for both.

PED 201B. Modern Dance II (2). Four hours of intermediate modern dance theory and technique. Experience in solo and group compositions. Formerly PE 201.2. Students may not receive credit for both.

PED 201C. Modern Dance III (2). Prerequisite, PED 201B. Four hours of advanced modern dance theory and techniques. Emphasis on performance and solo composition. Experience in organizing and presenting programs. Formerly PE 201.3. Students may not receive credit for both.

PED 202A. Ballet I (2). Beginning technique in classical ballet, including barre, center work and enchainments (center combinations). Formerly PE/PED 202.1. Students may not receive credit for both.

PED 202B. Ballet II (2). Prerequisite, PED 202A. Intermediate technique in classical ballet including barre, center work and enchainments (center combinations). Formerly PE/PED 202.2. Students may not receive credit for both.

PED 202C. Ballet III (2). Prerequisite, PED 202B. Advanced technique in classical ballet including barre, center work and enchainments (center combinations). Formerly PE/PED 202.3. Students may not receive credit for both.

PED 211. Music for Dance - Rhythms and Resources (2). Prerequisite, PED 201A. A study of rhythmic concepts as related to dance movements and composition; an introduction to music resources emphasizing composer/choreographer collaborations. Formerly PE 211. Students may not receive credit for both.

PED 301. Choreography (3). Prerequisite, PE 201A or instructor’s permission. The study and practice of choreographic techniques and tools utilizing creative problem solving. Students will meet for two hours laboratory work each week plus two hours lecture. Formerly PE 301. Students may not receive credit for both.

PED 302. Dance Production (3). Aspects of organizing and mounting a dance production, including scheduling, programming, publicity, costuming, lighting, and sound design. Formerly PE 302. Students may not receive credit for both.

PED 309. Teaching Methods: Recreational Dance (3). Prerequisite, PED 116 or permission. Knowledge of skills necessary in the teaching of various forms of recreational dance styles. Two hours lecture and two hours laboratory per week. Formerly PE 309. Students may not receive credit for both.

PED 314. Dance for Children (3). Strategies for teaching dance in elementary education, including creative dance, rhythmic exploration, use of props, unit plan development, and methods of assessment. Formerly PE 314. Students may not receive credit for both.

PED 315. Teaching Methods: Modern and Ballet Dance (3). Prerequisites, PED 201A and PED 201B. Teaching methods for Modern and Ballet technique classes which emphasizes the development of critical and creative thinking skills, observation skills, and assessment skills. Formerly PE 315. Students may not receive credit for both.

Fitness Activities Courses

The purpose of the Physical Education Activity Program is to offer students an instructional program that utilizes physical movement as the primary educational medium. This program provides opportunities for students to develop and improve physical skills. In addition, students learn rules, terminology, proper technique and safety issues specific to each particular activity.

Some of the following courses meet off-site. Some of the following courses have minimal additional fees.

Check the current class schedule for specific dates and fees.

One credit (meets twice weekly)

PEF 110. Conditioning Exercises.

PEF 111. Intermediate Conditioning Exercises. Prerequisite, PEF 110 or permission.

PEF 112. Ski Conditioning.

PEF 113. Weight Training.

PEF 114. Intermediate Weight Training. Prerequisite, PEF 113 or permission.

PEF 115. Jogging.

PEF 117. Weight Training. Course is designed to enhance the student’s knowledge and practices of weight training. Course is oriented toward the development of strength with a particular athletic pursuit.

PEF 118. Military Conditioning. Physical conditioning activities designed to prepare the Army ROTC Advanced Course student for Advanced Camp and Air Force ROTC student for Field Training. For Army ROTC Advanced Course and Air Force ROTC students only.

PEF 119. Advanced Military Conditioning. Prerequisites, PEF 118 and instructor permission, meets three times weekly.

PEF 121. Step Aerobics.

PEF 122. Dance Aerobics.

PEF 123. Aerobic Walking. Assessment of present level of cardio respiratory fitness and prescription of an individualized aerobic walking exercise program for increasing and maintaining fitness.

PEF 124. Distance Running.

PEF 125. Athletic Performance Conditioning.

PEF 126. Kick/Box Aerobics. Safe, effective aerobic work-out mimicking basic self-defense, and boxing movements.

PEF 128. Glute/Abdominal Conditioning. course emphasizes abdominal conditioning, gluteal toning and core muscle strengthening in a low impact format. Background music and various equipment is used for an effective workout.
Team Sports Courses
One credit (meets twice weekly)
PETS 110. Basketball.
PETS 113. Soccer.
PETS 114. Softball (Slow Pitch.)
PETS 116. Volleyball.
PETS 117. Advanced Volleyball. 
Prerequisite, PETS 116 or permission.
PETS 119. Competitive Volleyball. 
Permission of instructor. Grade will be S or U.
PETS 198. Special Topics.

Varsity Sports for Men Courses
One credit (two or three hours activity per day plus all regularly scheduled meetings and game sessions). May be repeated for credit.
PEVM 110. Baseball.
PEVM 111. Basketball.
PEVM 112. Cross Country.
PEVM 113. Football.
PEVM 115. Swimming.
PEVM 116. Tennis.
PEVM 117. Track and Field.
PEVM 118. Wrestling.

Varsity Sports for Women Courses
One credit (two or three hours activity per day plus all regularly scheduled meetings and game sessions). May be repeated for credit.
PEVW 110. Basketball.
PEVW 111. Cross Country.
PEVW 114. Swimming.
PEVW 115. Tennis.
PEVW 116. Track and Field.
PEVW 117. Volleyball.
PEVW 118. Soccer.
PEVW 119. Softball.
PEVW 120. Cheerleading.

HEALTH EDUCATION
Program Director: Kenneth A. Briggs
Advisors: Dr. Andrew Jenkins, Dr. Melody Madlem, Mr. Mark Perez

General Program Information
Health Education is a field of interest, a discipline, and a profession. As a profession, Health Education is one of the most meaningful and important careers available to college students today. Our ability to be healthy as individuals, families, and as a community is dependent on health education and health educators. Central's Health Education Programs are recognized throughout the state as the premier provider of health education graduates that are needed to fill the multitude of jobs available in the profession. Students can choose to major in the following:
1. Bachelor of Science in Community Health with a specialization in Community Health Education.
2. Bachelor of Arts in School Health Education.
3. Bachelor of Arts in Health Education Specialization

Community Health Major
Community Health Education Specialization
The Community Health Education specialization is a dynamic and diverse program that offers many employment options. Employing agencies include, but are not limited to, governmental health departments, hospitals, clinics, non-profit health agencies, voluntary health agencies, international health programs, corporations, consulting firms, youth or school-based health programs, wellness clubs/clinics, and health-care delivery programs.

Prerequisites:
HED 230 must be taken prior to HED 422.
HED 230 and HED 410 must be taken prior to HED 475, and HED 230 and HED 422 (pre/co-requisite) should be taken prior to HED 460.

Required Courses
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HED 209. Consumer Health</td>
<td>3</td>
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<tr>
<td>HED 210. Drugs and Health</td>
<td>3</td>
</tr>
<tr>
<td>HED 230. Foundations of Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HED 323. Infectious Disease</td>
<td>3</td>
</tr>
<tr>
<td>HED 324. Noninfectious Disease</td>
<td>4</td>
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<tr>
<td>HED 330. Health Assessment</td>
<td>4</td>
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<td>HED 340. Technological Applications in Health Education</td>
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<td>HED 370. Current Trends in Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HED 387. Principles of Fitness and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>HED 410. Community Health</td>
<td>3</td>
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<tr>
<td>HED 422. Methods for Health Promotion</td>
<td>4</td>
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<tr>
<td>HED 440. Social Marketing of Health Education Programs</td>
<td>3</td>
</tr>
<tr>
<td>HED 445. Health Education Professionalism</td>
<td>1</td>
</tr>
<tr>
<td>HED 460. Controversial Issues in Health Education</td>
<td>3</td>
</tr>
<tr>
<td>HED 471. Program Planning I</td>
<td>5</td>
</tr>
<tr>
<td>HED 472. Program Planning II</td>
<td>5</td>
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</tbody>
</table>
HED 475, Community Health Administration...........................3
HED 490, Cooperative Education Field Experience................................10
COM 345, Business and Professional Speaking........................................10
FCSN 245, Basic Nutrition.................................4
FCSF 231, Human Sexuality..............................4

Total  88

Community Health Education Minor

Required Courses Credits
HED 230, Foundations of Health Education.............................3
HED 209, Drugs and Health........................................3
HED 324, Noninfectious Disease...................4
HED 410, Community Health.................................3
HED 422, Methods for Health Promotion..................4
HED 460, Controversial Issues in Health Education..............................4
HED 471, Program Planning I.................................5
HED 472, Program Planning II.................................5

Total  30

Bachelor of Arts

School Health Education Major

Health/Fitness Endorsement

This major satisfies the endorsement for Health/Fitness.

“...” Anonymous

The School Health Education major is a lively and dynamic major that will prepare you to teach health in the secondary schools. Additionally, with the inclusion of required physical education courses, students will acquire a state certified endorsement in Health/Fitness that will also prepare you to teach K-12 physical education in the schools.

“No one should teach who is not a little bit awed by the importance of the profession.” Anonymous

Application Requirements and Procedure

Students wanting to major in School Health Education need to meet with Dr. Briggs in the Physical Education building, room 108. As a School Health Education major you also need to make application for admission to the Teacher Education Program during your sophomore or junior year. Application packets are located in Black Hall 228. Remember you must have a minimum 2.8 grade point average over your last 45 credits for conditional acceptance. Students taking this major are required to complete the professional education program requirements offered through the Department of Education.

As teacher education majors, no grade less than a C is allowed for any course in your major (endorsement area) or in your teacher education program. Also, in order to student teach you must have a 3.0 GPA for the last 45 graded credits or overall accumulative.

Prerequisites

Students should keep in mind that HED 230 is the introductory professional preparation course and must be taken prior to HED 345. HED 345 needs to be completed prior to HED 422. HED 422 must be taken one or two quarters prior to student teaching. HED 445 must be taken the quarter before student teaching.

Required Courses Credits
HED 101, Health Essentials.................................4
HED 210, Drugs and Health................................3
HED 230, Foundations of Health Education..............................3
HED 324, Noninfectious Disease...................4
HED 345, School Health Curriculum and Materials..........................3
HED 387, Principles of Fitness and Stress Management...........................3
HED 422, Methods for Health Promotion..................4
HED 445, Health Education Professionalism....................1

Total  42

Health Education Courses


HED 205. Drugs and Sport (2). Survey of the potential hazards of recreational, ergogenic and restorative drugs commonly used by athletes.


HED 210. Drugs and Health (3). Uses and abuses of drugs. Special emphasis will be on psycho-physiological effects upon human health and responsible drug use.

HED 230. Foundations of Health Education (3). Fundamental theories, paradigms, constructs, history, and experiences necessary for comprehensive understanding of Health Education as a profession and lifestyle.

HED 296. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

HED 298. Special Topics (1-6).

HED 299. Seminar (1-5). May be repeated.

HED 305. Alcohol and Alcoholism (3). An examination of our nation’s number one drug problem. Multifaceted aspects of causes, treatments, prevention and alternatives are discussed.

HED 315. Positive Health Decisions (3). Develops attitudes of self-help, provides tools which students can use to analyze their own life situations, and their relationships with friends, peers, family members, public health personnel, and others.


HED 323. Infectious Disease (3). Prerequisites, EXSC 351, BIOL 201, or permission of instructor.

HED 324. Noninfectious Disease (4). Prerequisites, EXSC 351, BIOL 201, or permission of instructor. Course consists of three hours of course work and two hours of medical terminology lab.
HED 325. Chemical Dependency Treatment and Recovery (3). Prerequisite, admission to the Chemical Dependency specialization or permission of the instructor. Examines chemical dependency and practice in treatment and recovery processes.

HED 330. Health Assessment (4). Prerequisite, HED 230 or permission of instructor. Theory and practice of evaluating the health or condition of individuals and groups.


HED 340. Technological Applications in Health Education (3). Prerequisite, HED 210 and 230. Examination of existing curricula and teaching materials. Design and development of school health curricula.

HED 349. Wellness Training for Peer Educators (3).

HED 350. Substance Abuse (3). Prerequisite, admission to the Chemical Dependency Specialization or permission of instructor.

HED 360. Legal and Ethical Issues in Chemical Dependency (3). Prerequisite, admission to the Chemical Dependency specialization. A review of legal and ethical issues related to professional practice.

HED 370. Current Trends in Health and Health Education (3). Contemporary health education topics and issues are explored through classroom and community contexts, visual, web-based, and interactive media. May be repeated for up to 6 credits.

HED 380. Epidemiology (3). Prerequisites, HED 323 and 324, or permission of instructor.

HED 387. Principles of Fitness and Stress Management (3). Prerequisite, HED 230 or permission of instructor. The theory and practice of health enhancement through fitness and stress management.

HED 398. Special Topics (1-6).

HED 410. Community Health (3). An overview of contemporary community health programs; problems in community health at the local, national, and international levels.

HED 412. Health Aspects of Aging (3). Prerequisite, HED 101 or permission of instructor. Examination of total health as it relates to the aged and the aging process.

HED 422. Methods for Health Promotion (4). Prerequisites HED 101 and HED 230, or permission of instructor.

HED 436. Chemical Dependency and the Schools (4). Prerequisite, admission to the Chemical Dependency Specialization or permission of the instructor. The course will familiarize the student with programs that provide assistance to chemically dependent students within the school and/or the community.

HED 440. Social Marketing of Health Education Programs (3). Social marketing theory and practice, health communication strategies, and basic qualitative research methods applied to social marketing theory.

HED 442. Field Work and Experience in Health Education (1-15). Prerequisite, permission of the instructor. Observation and participation in health programs, and/or HED 101. May be repeated to a maximum of 15 credits.

HED 445. Health Education Professionalism (1). Prerequisite, to be taken the quarter before student teaching or placement in community health internship. Professional ethics, job readiness, and job search in health education.

HED 446. Health Education Curriculum for Elementary Teachers (3). Examination of available curricula and teaching materials in health education for elementary school teachers. Students must develop an elementary health education curriculum.

HED 447. Program Planning I (5). Prerequisite, HED 230. Health program planning; needs assessment and goal setting. Formerly HED 371. Students may not receive credit for both.

HED 471. Program Planning II (5). Prerequisite, HED 471. Health program planning; implementation and evaluation. Formerly HED 372. Students may not receive credit for both.

HED 475. Community Health Administration (3). Prerequisites, HED 230 and HED 410. Understanding and application of knowledge to various administrative tasks in community health. Grants, management, and personnel issues will be covered.

HED 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

HED 491. Workshop (1-6). Topics in health education, including work sessions, lectures and demonstrations.

HED 492. Practicum (4). Prerequisite, HED 345 or 472 or permission of instructor. Practical experience and application of responsibilities and competencies necessary for practicing health education.

HED 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

HED 498. Special Topics (1-6).

HED 499. Seminar (1-5). May be repeated.

RECREATION AND TOURISM

Bachelor of Science

Recreation and Tourism

Program Director: Dr. Barbara Masberg

Advisors:
Dr. William Vance
Dr. Dorothy Chase

Program General Information
The Recreation and Tourism Program prepares students for professional positions in a wide variety of government, private, commercial, not-for-profit and other public, recreation, tourism organizations.

Core Course Requirements
Students complete a series of core courses and then choose one of two areas of specialization areas: Tourism Management or Recreation Management. Each major also has a minor program; Tourism Management and Community Recreation. The Recreation and Tourism program offers a minor program and certificate in Wine Trade and Tourism in which students are prepared for careers in the wine trade in a variety of settings (wineries, distribution, hospitality, export). Detailed descriptions are provided below.

Core course requirements (Required for all Recreation and Tourism majors) Credits
RT 201, Introduction to Recreation and Tourism ...........................................3
RT 221, Recreation and Tourism Fundamentals .........................................3
RT 292, Practicum .............................................6
RT 309, Areas and Facilities .........2
RT 302, Leadership Theory and Practice .......3

RT 201, Introduction to Recreation and Tourism

RT 221, Recreation and Tourism Fundamentals

RT 292, Practicum

RT 309, Areas and Facilities

RT 302, Leadership Theory and Practice
Recreation Management Specialization

The Recreation Management specialization prepares students for entry level supervisory/managerial positions with government parks and recreation departments, Y.M.C.A.'s and Boys and Girls Clubs, armed forces recreation, University recreation and intramural sports, fitness and racquet clubs, camping and outdoor recreation, and employee recreation services.

Admission Requirements:
Recreation Management Specialization

Admission to the Recreation Management specialization requires a minimum cumulative grade point average of 2.0 in at least 45 hours of undergraduate study OR a minimum grade point average of at least 2.5 in the first twelve credits of RT coursework exclusive of those obtained through RT 292 and RT 490 or their equivalents.

Required Courses Credits
Core Course Requirements.................62-67
Psychology/Sociology course approved by advisor.................5
Advisor approved electives.................24

Total 91-96

Tourism Management Specialization

The student with a specialization in Tourism Management may choose a career in a wide variety of travel and tourism related industries including directing operations in hotels, resorts, convention centers, cruises, airlines, visitor centers, casinos, tour companies, meeting and destination planning businesses, and cultural and heritage facilities. The career options within each industry are extremely varied and include: management, special event planning, sales and marketing, catering or food and beverage coordination, casino, games supervision, and control.

Contact advisors for information related to articulation with community colleges and high school tourism related programs.

Admission Requirements: Tourism Management Specialization

Students wishing to apply for admission must have a minimum GPA of 2.5 in all courses OR a minimum cumulative GPA of 3.0 in the first 12 credits of RT coursework. Interested students must complete and submit a major application which may be obtained by contacting an advisor.

Required Courses Credits
Core Course Requirements.................62-67
RT 201, Introduction to Recreation and Tourism..................3
RT 473, Air Travel and Tourism..............3
RT 475, Professional Development............2
RT 480, Recreation and Tourism Administration..............4
RT 484, Legal Liability and Risk Management..............3
RT 490, Cooperative Education OR RT 292, Practicum (based on advisement) 4
Advisor approved electives...............10

Total 29

Community Recreation Minor

Required Courses Credits
RT 201, Introduction to Recreation and Tourism..................3
RT 221, Recreation and Tourism Fundamentals..................3
RT 302, Leadership Theory and Practice..............3
RT 490, Cooperative Education OR RT 292, Practicum (based on advisement)..............4
RT 488, Program Management..................4
Advisor approved electives...............7

Total 24

Recreation and Tourism Notes
The elective area will include at least 10 credits of RT prefix courses not including RT 292 or RT 490 credits.

Elective courses and other coursework not specifically named must be approved by the student’s advisor prior to registration for coursework.

As part of the course of study, students are required to complete a 6 credit practicum (RT 292) in which they are employed in a tourism related operation. Also required is a 12 credit cooperative education/internship experience (RT 490) in which the student has directed and supervised study under the guidance of a mentor; actually working and learning in a professional setting.

A maximum of four RT 292 credits beyond the RT 292 core requirement may be applied to the elective area. A maximum of eight RT 490 credits beyond RT 490 core requirement may be applied to the elective area with permission of an RT advisor.

Minor in Wine Trade and Tourism

Wine coursework notes: students must be 21 years of age or older and must apply for acceptance. Additional course fees and continuing education tuition applies.

Required Courses Credits
RT 402, Wine Basics.........................5
RT 403, The Global World of Wine...........5
RT 404, The Wine Trade....................5
ME 330, Principles of Retailing..............4
ME 467, Retailing Management (4) OR ME 486, Retailing and E-commerce (4)...4
RT 490, Cooperative Education................6
Choose three of the following courses with advisement..........................9-13
RT 405/505, Hospitality Catering (3) (online course)
RT 373D, Convention Management (5)
RT 373E, Resort Management (5)
RT 471, Tourism Planning and Development (3)
RT 473, Air Travel and Tourism (3)
RT 480, Recreation and Tourism Administration (4)

Total 38-42

Wine Trade Professional Certificate Program - Type B

Advisor: Amy Mumma, Department of Continuing Education

Wine coursework notes: Students must be 21 years of age or older and must apply for acceptance. Additional course fees and continuing education tuition applies.

Required Courses Credits
RT 402, Wine Basics.........................5
RT 403, The Global World of Wine...........5
RT 404, The Wine Trade....................5

Total 15
Recreation and Tourism Courses

RT 201. Introduction to Recreation and Tourism (3). History, organizational structures, goals and objectives, policies and procedures within agencies, organizations and businesses in the private, voluntary, government and tourism. Formerly LES 201.

RT 221. Recreation and Tourism Fundamentals (3). Prerequisite, RT 201 or permission of instructor. Event and activity programming including identifying customer needs, coordinating events and resources to address those needs, and managing outcomes based upon goals and play and leisure foundations. Formerly LES 221.

RT 222. Games and Adventure Activities (4). Prerequisite, Recreation Tourism major or minor. Games and activities appropriate for playgrounds, camps & community centers. Socialization, education, trust building, outdoor adventure and other activities. Field trips required. One hour lecture, 2 hours lab per week. Formerly LES 485 and RT 485. Students may not receive credit for more than one.

RT 271. Introduction to Tourism (3). Presents an overview of travel, tourism and commercial recreation with special emphasis on the various segments of the tourism supply sector. Formerly LES 271.

RT 272. Front Office (3). Examines the rooms division and front office functions critical to hotel operations. Includes the guest cycle, personnel supervision, sales techniques in the reservation process, and hotel organization and operation. Formerly RT 373F. Student may not receive credit for both.

RT 275. Career Development (2). Prerequisite, RT 271. Students will explore career options and networks within the tourism industry and develop materials for a job search.

RT 292. Practicum (1-3). Prerequisite, permission of advisor. Thirty-five (35) “on-the-job” hours of practical experience per one (1) credit hour earned. Three (3) credits and permission of advisor required for Tourism Management specialization. Six (6) credits, permission of advisor required for Recreation Management specialization. Four (4) additional hours may be applied toward the RT “elective” area. No more than three credits may be earned in the same agency/program. May be repeated for credit. Formerly LES 292.

RT 296. Individual Study (1-6). May be repeated. Formerly LES 296.

RT 298. Special Topics (1-6). Formerly LES 298.

RT 299. Seminar (1-5). Formerly LES 299.

RT 302. Leadership Theory and Practice (3). Prerequisite, RT 201 or permission of the instructor. Basic leadership theories, styles, approaches. Practical leadership exercises toward implementing programs and events to improve supervisory leadership abilities. Formerly LES 302.

RT 309. Areas and Facilities (2). Study of basics of site and facility development including laws and regulations, procedures, fiscal concerns, analysis of sites and populations, and utility of design. Formerly LES 309.

RT 325. Promotions in Tourism and Recreation (4). Prerequisite, RT 271 or permission. Practical projects in written, verbal, and visual communications vital to information needs for recreation and tourism. Planning and organizing a promotions program. Formerly LES 325.

RT 330. Outdoor Recreation Resources (3). Prerequisite, admission into a Recreation and Tourism major or minor. Historical antecedents and current issues and practices in the use and management of parks, forests, wilderness areas and other North American outdoor recreation resources. Formerly LES 330.

RT 337. Tour and Interpretive Program Development (3). Methods, techniques and skills used in the planning, development and presentation of resource based interpretive programs and visitor tours. This course will include theoretical understanding of the interpretive process and practice of new skills. Formerly LES 337.


RT 379. Cruise Line Industry (3). An overview of the cruise industry including: cruise lines, ships, history of cruising, human resource practices, marketing, design, terminology and future trends. Formerly LES 379.

RT 380. Supervision in the Hospitality Industry (3). Prerequisite, RT 271 or permission. Basics of supervising programs, personnel, and facilities with emphasis on practical supervisory skill development. Formerly RT 373A. Student may not receive credit for both.

RT 381. Recreational Sports Management (3). Organization and implementation of recreational sports programs in community recreation settings. Emphasis on facilities, personnel, materials and supplies, tournament bracketing and other practical considerations. Formerly LES 381.

RT 393. Leisure Service Agency Visitation (1-3). Off campus field visits, usually from two to three days in duration. Review of facilities, programs and clientele. Lecture and discussion by and with agency leader/supervisor/manager personnel pertaining to agency operations. Grade will be S or U. May be repeated for credit under different titles. Formerly LES 393.

A. Public Recreation Agencies
B. Voluntary/Youth Serving Agencies
C. Military Recreation Agencies
D. Commercial Recreation Agencies
E. Employee/Industrial Recreation Agencies
F. Tourism Related Agencies
G. Therapeutic/Rehabilitation Related Agencies
H. Senior Centers/Nursing Homes
I. Outdoor Recreation/Education Agencies
J. Resident Camps
K. Parks and Playgrounds
L. Sports and Aquatics
M. Community Centers
N. Destinations
O. Attractions
P. Hospitality
Q. Transportation

RT 398. Special Topics (1-5). Formerly LES 398.

RT 402. Wine Basics (5). Prerequisite, Students must be 21 years of age or older. Fundamentals of viticulture and winemaking. Main wine styles, pairing wine with food, issues of wine and health. Professional techniques for evaluation and assessment of wine. Additional course fees apply.

RT 403. The Global World of Wine (5).
Prerequisite, students must be 21 years of age or older. Grape varieties, climate, soil, vineyard, vinification techniques, wines, legalities, regulations and trade structures around the world. Import, export, emerging regions in production and consumption. Additional course fees apply.

RT 404. The Wine Trade (5). Prerequisite, students must be 21 years of age or older. Overview of wine industry trade issues. Production, sales, pricing, merchandising, quality control, wine brands, advertising, journalism and the wine industry in the restaurant and hospitality sectors. Additional course fees apply.

RT 405. Hospitality Catering (3). Basics of off premise catering including menu planning, budgeting, logistics and marketing. FCSN 405, RT 405, and RT 505 are equivalent courses. Students may not receive credit for more than one.

RT 419. Applied Research (3). Prerequisite, senior class standing or permission of instructor. Basic of research design including problem identification, sampling, survey development, implementation strategies, data analysis, and analysis of RT published research. Formerly LES 419. Students may not receive credit for both.

RT 420. Research Analysis (4). Prerequisite, RT 419. Student research and presentation of an array of contemporary problems, issues and trends in the leisure services profession. Formerly LES 420.

RT 431. Resident Camp Programming (3). Prerequisite, permission of instructor. Methods, techniques and skills used in the organization and operation of a resident camp program. Formerly LES 431.

RT 437. Interpretive Writing and Design (3). Prerequisite, RT 337. Advanced application of interpretive techniques to the design and development of interpretive publications, visitor center exhibits, and wayside exhibits and signs. Instruction will include an experiential field trip. Formerly LES 437.

RT 471. Tourism Planning and Development (3). Prerequisite, RT 201. Economic, social, fiscal, environmental and political impacts of tourism; identifying and accessing tourism markets and destinations; the tourism planning and development process. Formerly LES 471.

RT 472. Issues in Gaming Management (3). Prerequisite, RT 377 or permission of instructor. Examines current social, economic, legal, geographic, technology, and marketing issues and trends in the gaming industry with emphasis on Indian gaming and responsible gaming issues. Students must be 21 years of age due to the age requirement for students to enter a casino during the course field trip. Formerly LES 472.

RT 473. Air Travel and Tourism (3). Prerequisite, RT 201. Examines the airline industry, its components and methods of operation. Also the interaction with other segments of the industry. Procedures for working with the airlines.

RT 474. Hotel Operations Analysis (2). Prerequisites, Math Basic and Breadth requirements, ACCT 301, RT 272 and permission. Analysis of hotel performance and forecasting, with tools typically used in a lodging environment. RT 474 and RT 574 are equivalent courses. Students may not receive credit for both.

RT 475. Professionalism in Tourism (2). Prerequisite, RT 292. Students will develop skills related to professionalism in the tourism industry along with assessing themselves in order to successfully enter their careers.

RT 479. Cruise Line Workshop (1-5). Formerly LES 499. May be repeated. Formerly LES 490. May be repeated. Grade will be S or U. Formerly LES 491.

RT 490. Cooperative Education (1-12). Prerequisite, a minimum GPA of 2.25 in the major is required in order to register for RT 490. An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U. Formerly LES 490.

RT 491. Workshop (1-6). Formerly LES 491.

RT 492. Advanced Experience (1-3). Co-requisite, RT 498, International Experience or approval. International experiences in which students are placed at sites overseas. Student is required to complete an analytical report of the experience and maintain communication with CWU supervisor.

RT 496. Individual Study (1-6). May be repeated. Formerly LES 496.

RT 498. Special Topics (1-6). Formerly LES 498.

RT 499. Seminar (1-5). Formerly LES 499.

Undergraduate Courses/Programs on Reserve

The following programs and courses are on reserve and may be offered subject to program needs: Community Health, Chemical Dependency Specialization, PEAQ 221, Life Saving (5), PE 362. Dance in Education (4), PE 471. Philosophy of Elementary School Physical Education (3), PEAQ 118, Canoeing (1), PEGT 110, Beginning Gymnastics (1), PEID 117. Advanced Golf (1), PEID 121, Intermediate Fencing (1), PEID 122. Advanced Fencing (1), PEID 131. Snowshoeing (1), or PEID 133. Backpacking (1), PETS 115, Touch Football (1), PETS 118 Rugby (1).
**HISTORY**

Faculty  
Chair: Karen J. Blair  
Language and Literature 100

Professor  
Karen J. Blair, 20th Century U.S., Women’s History

Associate Professors  
James Cook, East Asia  
Roxanne Easley, Russia, Eastern Europe  
Daniel Herman, U.S. Pre 1877  
Thomas Wellock, Contemporary U.S., Environmental, American West

Assistant Professors  
Michael Ervin, Latin American History  
Jason Knirck, Western Europe  
Stephen Moore, Pacific Northwest, Foreign Policy, Social Studies, Education

Emeritus Professor  
Beverly Heckart, German, Europe  
Kent Richards, American West, Pacific Northwest

General Departmental Information  
The faculty of History offers courses leading to the degrees of Bachelor of Arts and Master of Arts. Majors who desire to graduate with honors should consult the History honors director on the special requirements. Students who declare a major in History must register with the Department.

History Honors Program  
Qualified students are urged to enter the History Department’s honors program. To qualify for the program, students must complete 25 credits in their major and have an overall GPA of 3.0 and 3.25 in history. Honors students will complete the following requirements:
1. an elective course in addition to those required for their major in an area of concentration (United States, Europe, or Non-Western)
2. a year of coursework in one departmentally-approved foreign language at an accredited college or university. If it is the same language as that taken in high school, the student must complete the course work at the 200 level.
3. an honors research paper (25 page minimum) completed during HIST 481. A faculty committee will judge whether the paper meets departmental standards for honors.

Students who complete the above requirements will graduate with departmental honors. Please contact the Department Chair for more information.

**Bachelor of Arts**

**History Major**  
It is recommended that students who plan to enter graduate school should complete two years of a foreign language at the college level.

**Required Courses**  
Select from the following:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIST 101, 102, 103, World Civilization</td>
<td>20</td>
</tr>
<tr>
<td>HIST 143, 144, United States History</td>
<td>10</td>
</tr>
<tr>
<td>HIST 301, Pacific Northwest History</td>
<td>3</td>
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<tr>
<td>HIST 302, Introduction to History</td>
<td>3</td>
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<tr>
<td>HIST 481, Understanding History</td>
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<tr>
<td>Upper Division European History</td>
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<tr>
<td>Upper Division African, Asian, Middle Eastern or Latin American History</td>
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</tr>
<tr>
<td>Upper division History electives</td>
<td>12-14</td>
</tr>
</tbody>
</table>

**Total 58-60**

*Western Civilization may be substituted.  
**Students with fewer than 60 credits must have a minor in order to graduate.

**History: Teaching Broad Area Major**  
This major satisfies the endorsements for History and Social Studies. This major is designed for students in the secondary teacher training program. Students taking this major are required to complete the professional education program requirements offered through the Department of Education.

**Required Courses**  
Select from the following:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 101, 102, 103, World Civilization</td>
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<tr>
<td>HIST 143, 144, United States History</td>
<td>10</td>
</tr>
<tr>
<td>HIST 301, Pacific Northwest History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 302, Introduction to History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 421, Methods and Materials in the Social Studies, Secondary OR <strong>EDEL 420, Methods and Materials in the Social Sciences, Elementary</strong></td>
<td>3</td>
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<tr>
<td>HIST 481, Understanding History</td>
<td>3</td>
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<tr>
<td>Select from the following:</td>
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<tr>
<td>Upper Division U.S. History</td>
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<tr>
<td>Upper Division European History</td>
<td></td>
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<tr>
<td>Upper Division African, Asian, Middle Eastern or Latin American History</td>
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<tr>
<td>POSC 210, American Politics</td>
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<tr>
<td>Select from the following:</td>
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<tr>
<td>ECON 101, Economic Issues</td>
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<tr>
<td>ECON 102, World Economic Issues</td>
<td></td>
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<tr>
<td>ECON 201, Principles of Economics Micro</td>
<td></td>
</tr>
<tr>
<td>ECON 202, Principles of Economics Macro</td>
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</table>

**Total 75-77**

*Western Civilization may be substituted.

Prior completion of EDCS 311 recommended. Students must be admitted to the Teacher Education program prior to enrolling in this course.

**History Minor**

**Required courses**  
Select from the following:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 101, 102, 103, World Civilization</td>
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<tr>
<td>HIST 143, 144, United States History</td>
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<tr>
<td>Upper division History electives</td>
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</tbody>
</table>

**Total 30**

*Western Civilization may be substituted.

**History: Teaching Minor**

**Required courses**  
Select from the following:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 143 or 144, United States History</td>
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</tr>
<tr>
<td>HIST 301, Pacific Northwest History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 302, Introduction to History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 421, Methods and Materials in the Social Studies, Secondary</td>
<td>3</td>
</tr>
<tr>
<td>Upper-division European History</td>
<td>3-5</td>
</tr>
<tr>
<td>Upper-division African, Asian, Middle Eastern History</td>
<td>3-5</td>
</tr>
<tr>
<td>POSC 210, American Politics</td>
<td>5</td>
</tr>
<tr>
<td>Select from the following:</td>
<td>5</td>
</tr>
<tr>
<td>ECON 101, Economic Issues</td>
<td></td>
</tr>
<tr>
<td>ECON 102, World Economic Issues</td>
<td></td>
</tr>
<tr>
<td>ECON 201, Principles of Economics Micro</td>
<td></td>
</tr>
<tr>
<td>ECON 202, Principles of Economics Macro</td>
<td></td>
</tr>
</tbody>
</table>
Select from the following Upper-division regional geography: ................. 3-5

GEOG 352, Geography of North America (5)
GEOG 355, Geography of the Pacific Northwest (4)
GEOG 371, Geography of Europe (5)
GEOG 415, Geography of Oceania (3)
GEOG 450, Geography of Arid Lands (4)
GEOG 470, Geography of South America (4)
GEOG 471, Geography of Middle America (3)
GEOG 474, Geography of China (4)
GEOG 475, Geography of Asia (5)

Total 33-39

History Courses

HIST 101. World Civilization to 1500 (5). Origins and development of the major world civilizations to the 15th century. A comparative study of their political, social, and economic institutions, and their religious and intellectual backgrounds.

HIST 102. World Civilization: 1500-1815 (5). A comparative survey of political, social, economic and cultural developments. For general education (breath) credit, it is preferred that a student be enrolled in or have completed ENG 101.

HIST 103. World Civilization Since 1815 (5). A comparative survey of political, social, economic, and cultural developments. For general education (breath) credit, it is preferred that a student be enrolled in or have completed ENG 101.

HIST 143. United States History to 1865 (5). The Colonial, Revolutionary and National periods.

HIST 144. United States History Since 1865 (5). Reconstruction, Industrial America and 20th century urban America. For general education (breath) credit, it is preferred that a student be enrolled in or have completed ENG 101.

HIST 298. Special Topics (1-6).

HIST 301. Pacific Northwest History (3). Exploration and settlement; subsequent political, economic, and social history with particular emphasis on Washington.

HIST 302. Introduction to History (3). Exercises in historical research, critical analysis and interpretation. Sophomore and junior history majors only.

HIST 312. Ancient Near East and Greece (5). Mesopotamian, Egyptian, Hellenic and Hellenistic civilizations from their earliest beginnings to the breakup of the Alexandrian Empire.

HIST 313. History of Rome 500 B.C. to 500 A.D. (5). Beginning, city-state, republican period; world empire; decline.

HIST 314. Military History of the United States (5). A comprehensive and systematic survey and analysis of the American military experience from Colonial times through the Vietnam war. HIST 314 and MSL 314 are equivalent courses. Students may not receive credit for both. Formerly HIST/MSL 314.1.

HIST 315. Muslim Middle East (3-5). The origins and spread of Islamic civilization and its interaction with Graeco-Roman, Persian, and Indian civilizations. Crusades and the rise and fall of the Ottoman Empire.

HIST 316. Modern Middle East 1914 to the Present (3-5). The Arab revolt, the British-French mandates, nationalism, modernization, independence movements, Arab-Israeli struggle, Palestinians and oil politics.

HIST 322. World Prehistory (4). Old and New World prehistory from late Pleistocene to the early historic period, including the ecology and development of hunting-gathering, agriculture and state-level societies. HIST 322 and ANTH 322 are equivalent courses. Students may not receive credit for both.

HIST 328. Modern Latin America (5). Analyzes the history of Latin America in the past two centuries, from the Wars of Independence until the present day. HIST 328 and HIST 528 are equivalent courses. Students may not receive credit for both.

HIST 329. The Tropics and the Modern World (5). Analyzes the history of the modern world through the history of tropical commodities. HIST 329 and HIST 529 are equivalent courses. Students may not receive credit for both.

HIST 330. Africa to 1800 (5). This course is designed to explore Africa's earliest civilizations; internal processes of change; external influences; state formation; complex societies; connections to the world economy.

HIST 331. Colonial Africa (3-5). Africa on the eve of colonial conquest; causes of imperialism; colonial rule and African reactions and initiatives; independence and colonial legacy.

HIST 338. Conquests and Compromises: American Indian History since 1492 (5). Discussion and lecture course on interactions between American Indians and Europeans since the arrival of Columbus. HIST 338 and History 338 are equivalent courses. Students may not receive credit for both.

HIST 339. Colonial British America (5). Social, cultural, political, and economic life in the British Colonies of North America to 1763.

HIST 340. The American Revolution (5). Causes and consequences of the American Revolution, 1688-1789. HIST 340, HIST 440 and HIST 540 are equivalent courses. Students may receive credit for only one of these courses.

HIST 341. The United States: Early National Period 1789-1844 (3-5).


HIST 345. History of Social Services in the United States (3-5). Attitudes, policies and practices with regard to those people who require charitable assistance, public or private, from colonial times to the present.

HIST 346. Women in American History (5). A survey of the role of women, their treatment and response, in American society from colonial times to the present. HIST 346, HIST 446 and HIST 546 are equivalent courses. Students may receive credit for only one of these courses.

HIST 347. On the Border: Excursions in Southwestern History (5). Discussion and lecture course on ethnic collisions, environmental revolutions, and urban developments in the American Southwest since the time of the Ancestral Puebloans.

HIST 348. Economic History of the United States (5). Economic factors in the development of the American nation from the European background to the present. HIST 348 and ECON 348 are equivalent courses. Students may not receive credit for both.

HIST 352. The History of the American Family (3). American family patterns from early settlement to the present; demography, gender roles, courtship, marriage, child-raising, aging, ethnicity and alternative life styles.

HIST 354. American Environmental History (5). Environmental values and practices of the diverse populations of America. HIST 354, HIST 454 and HIST 554 are equivalent courses. Students will be given credit for only one of three courses.

HIST 370. Medieval European History (5). Survey of Western European history from late antiquity to the sixteenth century; political, economic, social and religious thought and institutions. HIST 370 and HIST 570 are equivalent courses. Students will be given credit for only one. Formerly HIST 371.

HIST 376. History of Modern East Europe (5). Poland, Czech, Slovak Republics, Austria, Hungary, Romania, Yugoslavia, Bulgaria, Greece, Albania, with special attention to multi-ethnicity, economic underdevelopment and modernization, political dependence and nationalism.
<table>
<thead>
<tr>
<th>COURSE NUMBER</th>
<th>COURSE TITLE</th>
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<tbody>
<tr>
<td>HIST 376</td>
<td>Renaissance and Reformation</td>
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<tr>
<td>HIST 576</td>
<td>Methods and Materials in the History of Local History</td>
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<tr>
<td>HIST 398</td>
<td>Special Topics (1-6)</td>
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<tr>
<td>HIST 395</td>
<td>Research in Local History</td>
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<tr>
<td>HIST 388</td>
<td>Economic History of Europe (5)</td>
</tr>
<tr>
<td>HIST 386</td>
<td>Latin American Colonies (5)</td>
</tr>
<tr>
<td>HIST 381</td>
<td>History of Modern Southeast Asia: Colonial Era to the Present (5)</td>
</tr>
<tr>
<td>HIST 386</td>
<td>Latin American Colonies (5)</td>
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<tr>
<td>HIST 383</td>
<td>East Asian Civilization (5)</td>
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<tr>
<td>HIST 387</td>
<td>Early Modern Europe, 1600-1789 (5)</td>
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<tr>
<td>HIST 384</td>
<td>Modern Eastern Europe, 1600-1789 (5)</td>
</tr>
<tr>
<td>HIST 385</td>
<td>Research in Local History (1-6)</td>
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<tr>
<td>HIST 421</td>
<td>Methods and Materials in the Social Studies, Secondary (3)</td>
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<td>HIST 425</td>
<td>Renaissance and Reformation (5)</td>
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<td>HIST 430</td>
<td>Tudor-Stuart England (3-5)</td>
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<tr>
<td>HIST 431</td>
<td>America: The Crisis of Nation Building (5)</td>
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<tr>
<td>HIST 432</td>
<td>Early Modern Europe, 1600-1789 (5)</td>
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<tr>
<td>HIST 433</td>
<td>Selected Topics in African History (5)</td>
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<tr>
<td>HIST 440</td>
<td>The American Revolution (5)</td>
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<td>HIST 441</td>
<td>The West in American History (3-5)</td>
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<td>HIST 442</td>
<td>Sectionalism, Civil War and Reconstruction (3-5)</td>
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<td>HIST 443</td>
<td>Women in American History (5)</td>
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<td>History of Women and the West (5)</td>
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<td>HIST 450</td>
<td>Exploring U.S. Cultural History (5)</td>
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<td>HIST 451</td>
<td>20th Century U.S. 1919-1945 (3-5)</td>
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<td>Modern East Asia (5)</td>
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<td>HIST 471</td>
<td>German History, 1815-1918 (3-5)</td>
</tr>
<tr>
<td>HIST 472</td>
<td>German History, 1815-1918 (3-5)</td>
</tr>
<tr>
<td>HIST 473</td>
<td>Russia to 1881 (3-5)</td>
</tr>
</tbody>
</table>

Formerly HIST 430.1/530.1. HIST 431. Africa: The Crisis of Nation Building (5). An in-depth multidisciplinary approach to the present political and socio-economic issues, problems and tensions in selected areas of Africa. HIST 431 and HIST 531 are equivalent courses. Students may not receive credit for both.

HIST 432. Early Modern Europe, 1600-1789 (5). A survey of the major trends and events in European history during the two centuries leading up to the French Revolution. Topics covered include the Glorious Revolution, The Enlightenment and the rise of absolutism. HIST 377 and HIST 577 are equivalent courses. Students may not receive credit for both.

HIST 433. Selected Topics in African History (5). Specific matter may vary but emphasis will be on the social and cultural development of African states since pre-colonial times. HIST 433 and HIST 533 are equivalent courses. Students may not receive credit for both.

HIST 440. The American Revolution (5). Causes and consequences of the American Revolution, 1768-1789. HIST 440, HIST 540 and HIST 540 are equivalent courses. Students may receive credit for only one course.

HIST 441. The West in American History (3-5). Exploration, territorial acquisition, patterns of settlement, economic development, and the influence of the frontier on American institutions. HIST 443 and HIST 543 are equivalent courses. Students may not receive credit for both.

HIST 442. Sectionalism, Civil War and Reconstruction (3-5). Slavery, the Old South, sectionalism, the breakdown of the Union, and secession. A military, political, social history of North and South during the Civil War, and the aftermath of the war. HIST 444 and HIST 544 are equivalent courses. Students may not receive credit for both.

HIST 443. Women in American History (5). A survey of the role of women, their treatment and response, in American society from colonial times to the present. HIST 446, HIST 546 and HIST 546 are equivalent courses. Students will be given credit for only one.

HIST 444. History of Women and the West (5). Women in the western United States, with emphasis on the nineteenth and twentieth centuries: myths and stereotypes; women’s work; community roles; class and racial/ethnic differences. HIST 449 and HIST 549 are equivalent courses. Students may not receive credit for both.

HIST 445. Exploring U.S. Cultural History (5). Thematic approach to nineteenth-century cultural transformations in U.S. HIST 450 and HIST 550 are equivalent courses. Students may not receive credit for both.

HIST 451. 20th Century U.S. 1896-1919 (3-5). Imperialism, Progressivism, and World War I. HIST 451 and HIST 551 are equivalent courses. Students may not receive credit for both.

HIST 452. 20th Century U.S. 1919-1945 (3-5). Prosperity and depression; the New Deal and its implications; World War II, origins and conclusion. HIST 452 and HIST 552 are equivalent courses. Students may not receive credit for both.

HIST 453. 20th Century U.S. 1945 to the Present (3-5). Cold War, sedentary 50s, rebellious 60s, the Watergate era. HIST 453 and HIST 553 are equivalent courses. Students will be given credit for only one of three courses.

HIST 454. American Environmental History (5). Environmental values and practices of the diverse populations of America. HIST 454, HIST 534 and HIST 554 are equivalent courses. Students will be given credit for only one of three courses.

HIST 461. History of American Foreign Relations, 1900-1941 (3-5). Imperialism, Progressivism, and World War I. HIST 462 and HIST 562 are equivalent courses. Students may not receive credit for both. Formerly HIST 463.

HIST 462. History of American Foreign Relations, 1941-1989 (3-5). Pearl Harbor to the present. HIST 463 and HIST 563 are equivalent courses. Students may not receive credit for both.

HIST 463. History of American Foreign Relations Since 1941 (3-5). From Pearl Harbor to the present. Students may not receive credit for both.

HIST 464. Latin American Revolutions (5). This course compares and contrasts the causes, courses, and consequences of the Mexican Revolution (1910-40), the Cuban Revolution (1959-present), the Chilean Revolution (1970-73), and the Nicaraguan Revolution (1979-89). HIST 464 and HIST 564 are equivalent courses. Students may not receive credit for both.

HIST 465. History of the People’s Republic of China. (5). Evaluates the historical record of the Chinese Communists in power since the establishment of the People’s Republic of China in 1949. HIST 465 and HIST 565 are equivalent courses. Students may not receive credit for both.

HIST 470. German History, 1815-1918 (3-5). A political, diplomatic, socio-economic, and intellectual study of Germany from the end of the Napoleonic Era through World War I. Emphasis on German unification and the socio-economic background to World War I. HIST 471 and HIST 571 are equivalent courses. Students may not receive credit for both.

HIST 471. German History, 1815-1918 (3-5). A political, diplomatic, socio-economic, and intellectual study of Germany from the end of the Napoleonic Era through World War I. Emphasis on German unification and the socio-economic background to World War I. HIST 471 and HIST 571 are equivalent courses. Students may not receive credit for both.

HIST 472. German History, 1815 to the Present (3-5). A political, diplomatic, socio-economic, and intellectual study of Germany with special attention to the causes, progress, and aftermath of the National Socialist State. HIST 472 and HIST 572 are equivalent courses. Students may not receive credit for both.

HIST 473. Russia to 1881 (3-5). The political, social, economic and cultural development
of Russia from ancient times to the assassination of Alexander II. HIST 473 and HIST 573 are equivalent courses. Students may not receive credit for both.

HIST 474. Russia Since 1881 (3-5). The political, economic, social and cultural history of Russia and the Soviet Union since 1881. HIST 474 and HIST 574 are equivalent courses. Students may not receive credit for both.

HIST 479. Europe in the 20th Century (3-5). Events and movements which led to two wars; change in governmental structure in the cycles of war and peace. HIST 479 and HIST 579 are equivalent courses. Students may not receive credit for both.

HIST 481. Understanding History (3-5). Prerequisite, HIST 302. Analysis of the nature of history, of the way historians reason, and of the search for meaning in history. HIST 481 and HIST 581 are equivalent courses. Limited to seniors only.

HIST 482. Revolutionary China (3). The causes, course, and effects of the 20th century. HIST 482 and HIST 582 are equivalent courses. Students may not receive credit for both.

HIST 483. Modern China (5). The history of China in the 19th and 20th centuries, including the nature of China’s response to the West and the Chinese Revolution of the 20th century. Emphasis on internal social and economic change. HIST 483 and HIST 583 are equivalent courses. Students may not receive credit for both.

HIST 484. Modern Japan (3-5). The recent historical development of Japan beginning with the collapse of the Tokugawa Shogunate and the resumption of foreign contacts in the mid-19th century. Emphasis is given to the modernization process with its concomitant political, social, economic, and intellectual changes. HIST 484 and HIST 584 are equivalent courses. Students may not receive credit for both.

HIST 487. The Russian Revolutionary Movement (3-5). Origins and development of Russian radicalism through the Bolshevik Revolution of 1917. HIST 487 and HIST 587 are equivalent courses. Students may not receive credit for both.

HIST 488. Mexico in the Modern Era (5). The modernization and nationalization of Mexico, with emphasis on the social history of Mexico’s frontiers. HIST 488 and HIST 588 are equivalent courses. Students may not receive credit for both.

HIST 489. Cuba and the Caribbean (5). Foreign intervention and the domestic social structure of Caribbean America. HIST 489 and HIST 589 are equivalent courses. Students may not receive credit for both.

HIST 490. Cooperative Education (1-8). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U. HIST 490 and HIST 590 are equivalent courses.

HIST 496. Individual Study (1-6). Prerequisite, permission of instructor.

HIST 497. Honors Individual Study (1-6). Open to students accepted into the departmental honors program. This course may be repeated once, but no more than an over-all total of six credits per quarter is permitted.

HIST 498. Special Topics (1-6).

*The depth of coverage of the content of variable credit courses will vary according to the number of credits offered.

HUMANITIES

Contact Person: Gerald J. Stacy
Language and Literature Building
408CHumanities

Humanities Courses

HUM 101. Exploring Cultures in the Ancient World (5). Prerequisite, grade of C- or above in ENG 101. An interdisciplinary exploration from literature, history, philosophy, and the arts of selected major ancient civilizations in Asia, Africa, Europe and the Americas from their beginnings through the fifteenth century.

HUM 102. Exploring Cultures From 16th Through 19th Centuries (5). Prerequisite, grade of C- or above in ENG 101. An interdisciplinary exploration of selected literature, history, philosophy, and the arts in Asia, Africa, Europe and the Americas from the sixteenth through the nineteenth centuries.

HUM 103. Exploring Cultures in Modern and Contemporary Societies (5). Prerequisite, grade of C- or above in ENG 101. An interdisciplinary exploration of selected literature, history, philosophy, and the arts of selected world civilizations of the twentieth century.

HUM 150. Introduction to Film and Video Studies (4). Overview of film and video studies including film viewing and analysis, motion picture language and film genres and production aspects.

HUM 298. Special Topics (1-6).

HUM 300. Screenwriting (4). Prerequisite,
INDIVIDUAL STUDIES

Program Director: Linda Beath, Associate Vice President for Undergraduate Studies
Barge 303

Individual Studies Major
Bachelor of Arts
Bachelor of Science
Bachelor of Music

General Program Information

Students interested in pursuing an area of scholarly inquiry which falls outside the purview of an established academic department or program of the University may apply for admission to the Individual Studies program. This academic program offers students an opportunity to develop, under the guidance of faculty advisors, a major which meets their specific needs. The program is available in the Bachelor of Arts, Bachelor of Music and Bachelor of Science degrees. Major areas of study are typically interdisciplinary.

Detailed written procedures and advice about preparing a proposal are available at cwu.edu/~avpugrad/individualstudy.html. The proposal must include a title, statement of purpose, a listing of courses which comprise the major, and support from a faculty advisor. The Course of Study should include courses from at least two separate subject areas and total at least 60 credits. All proposal materials must be submitted to the Associate Vice President for Undergraduate Studies at least three quarters prior to anticipated graduation, unless otherwise stipulated by the Associate Vice President for Undergraduate Studies. Proposals are subject to the review and approval of an advisory committee which meets quarterly.

Application forms, guidelines and policies are available at cwu.edu/~avpugrad/individualstudy.html. Completed forms are turned in to the Office of the Associate Vice President for Undergraduate Studies, Barge 303.

Individual Studies Courses

IS 193. Field Study (1-6). Prerequisite, permission of the Associate Vice President for Undergraduate Studies. Field research projects and report writing.

IS 290. Cooperative Education (1-5). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated to a maximum of 10 credits. Grade will be S or U.

IS 296. Individual Study (1-6). Prerequisite, permission of the Associate Vice President for Undergraduate Studies.

IS 298. Special Topics (1-6). Prerequisite, permission of the Associate Vice President for Undergraduate Studies.

IS 487. End-of-Program Assessment (1). Prerequisite, senior standing and permission of Associate Vice President for Undergraduate Studies. An individual study for students enrolled in the individual studies major program. Grade will be S or U.

IS 496. Individual Study (1-6). Prerequisite, permission of Associate Vice President for Undergraduate Studies.

IS 498. Special Topics (1-6). Prerequisite, permission of Associate Vice President for Undergraduate Studies.

INDUSTRIAL AND ENGINEERING TECHNOLOGY

Faculty
Chair: William Bender
Hogue 107
Industrial and Engineering Technology

Professors
William Bender, Construction Management
David Carns, Construction Management
Walter Kaminski, Mechanical Engineering
Technology
Tim Yostheimer, Electronics

Associate Professors
Craig Johnson, Mechanical Engineering Technology
Lad Holden, Electronics
T.Q. Yang, Electronics

Assistant Professors
Brantley Bain, Construction Management
Scott Calahan, Industrial Education
David Leo Lickteig, Construction Management
Carlos Oncina, Mechanical Engineering Technology
Joe Price, Safety & Health Management

Emeritus Professors
G.W. Beed, Mechanical Engineering Technology, Foundry
D. Ken Calhoun, Woods, Construction Management
Ronald Hales, Safety and Health Management
Robert Wieking, Power, Professional

Lecturers:
Dave Borkowski, Safety and Health Management
William Cattin
Jeanette Jacobson, Safety and Health Management
Juan Robertson, MSET

New positions to be filled by fall quarter, 2005.

SHM Professor (TBA)

General Departmental Information

The curricula of the Department falls into three categories: Engineering Technology, Industrial Technology and Industrial Education.

Engineering Technology is a baccalaureate degree program. It is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in a support of engineering activities; it lies in the occupational spectrum between the craftsman and the engineer at the end of the spectrum closest to the engineer.

Industrial Technology is a baccalaureate degree program designed to prepare individuals for technical managerial, production supervisory, and related types of professional leadership positions. The curriculum, even though built on technical education, has a balanced program of studies drawn from a variety of disciplines relating to industry. Included are a sound knowledge and understanding of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations; experience in communications skills, humanities, and social sciences, and a proficiency level in the physical sciences, mathematics, design, and technical skills to permit the graduate to capably cope with typical technical, managerial, and production problems.

Industrial Education curriculum leads to the degree of Bachelor of Science for one of the following: industrial art teachers at junior and senior high school levels; or individuals who are, or plan to become, teachers in either a community college or other trade and industrial or technical programs and who, in addition to state requirements, need or desire a college degree. Students desiring vocational certification should see their major advisor about additional requirements.

The Industrial and Engineering Technology department also offers a Master's Degree in Engineering Technology. See the Graduate Studies section of this catalog.
Bachelor of Science
Construction Management
Major
Advisors: D. Carns (Coordinator), W. Bender, Brantly Bain, David Leo Lickteig

The Construction Management program is fully accredited by the American Council for Construction Education (ACCE), and also is a member of the Associated Schools of Construction (ASC).

This major prepares the graduate for management positions in the construction industry. Recent graduates are working in cost estimating, project scheduling, cost control, and project management. Students selecting this major should have a basic background in mathematics, physics, and chemistry. In the absence of an appropriate background the student may find it necessary to take MATH 154. Students must be accepted into the major prior to taking upper division CMGT courses. Major applications are accepted on October 15 each year. Students pursuing this degree should work closely with their program advisor to assure that prerequisites for entry into the major have been satisfied. Due to the number of hours in this program, some students may find that this program requires additional time to complete.

Construction Management students have the choice to concentrate on one of two different construction types; Commercial Construction and Heavy, Civil and Highway Construction. Students have the flexibility to take their choice of several classes which will reinforce their area of interest and provide the students with applicable skills and knowledge making them more attractive to employers.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMGT 245, Light Commercial Construction (5) OR CMGT 480, Heavy Civil and Highway Construction (4)</td>
<td>4-5</td>
</tr>
<tr>
<td>CMGT 265, Blueprint Reading and Construction Graphics</td>
<td></td>
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<tr>
<td>CMGT 267, 267LAB, Plane Surveying/Building OR</td>
<td></td>
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<tr>
<td>CMGT 267LABHC, Heavy Civil Lab</td>
<td>3,1</td>
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<tr>
<td>CMGT 320, Electrical Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 343, 343L, Construction Estimating I/ Lab</td>
<td>3,1</td>
</tr>
<tr>
<td>CMGT 344, 344L, Construction Estimating II/ Lab OR CMGT 345, Heavy Civil Estimating II/ Lab</td>
<td>3,1</td>
</tr>
<tr>
<td>CMGT 346, Construction Materials and Methods OR CMGT 347, Heavy Civil Methods and Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 441, Wood and Steel Construction OR CMGT 440, Temporary Structures</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 442, Building Service Systems OR CMGT 443, Heavy Civil Utilities</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 444, Codes, Contracts and Specifications OR CMGT 445, Heavy Civil Contract Law</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 447, Construction Planning, Scheduling and Control</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 450, Soils and Foundations</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 455, Principles of Construction Management OR CMGT 456, Principles of Heavy Civil Construction Management</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 460, Concrete Construction OR CMGT 461, Pavement Design and Construction</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 485, Construction Accounting, Finance and Contemporary Topics</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 488, Professional Certification</td>
<td>1</td>
</tr>
<tr>
<td>IET 161, Architectural CAD</td>
<td>3</td>
</tr>
<tr>
<td>IET 301, Engineering Project Cost Analysis</td>
<td>4</td>
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<tr>
<td>IET 311, Statics</td>
<td>4</td>
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<tr>
<td>IET 312, Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>IET 389, Technical Presentations</td>
<td>3</td>
</tr>
<tr>
<td>CMGT 286, Construction Safety and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MATH 172, Calculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH 173, Calculus</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 181, 181LAB, General Physics</td>
<td>4,1</td>
</tr>
<tr>
<td>CHEM 181, General Chemistry OR CHEM 111, Introduction to Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 181LAB, General Chemistry Laboratory OR CHEM 111LAB, Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>GEOL 101, 101LAB, Physical Geology OR GEOL 108, Introduction to Environmental Geology</td>
<td>5</td>
</tr>
<tr>
<td>IT 101, Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 385, Business Communication and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>ECON 201, Principles of Economics Micro</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 301, Financial Accounting Analysis</td>
<td>5</td>
</tr>
<tr>
<td>BUS 241, Legal Environment of Business</td>
<td>5</td>
</tr>
<tr>
<td>HRM 381, Management of Human Resources OR MGT 380, Principles of Management</td>
<td>5</td>
</tr>
<tr>
<td>COM 345, Business and Professional Speaking</td>
<td>4</td>
</tr>
</tbody>
</table>

Total 137–138

Construction Management Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMGT 245, Light Commercial Construction (5) Prerequisite, CMGT 265 or permission of the instructor. Introduction to plan reading, construction terminology and the construction process. Extensive work with plans of significant scope. Not open to students with credit in CMGT 266.</td>
<td></td>
</tr>
<tr>
<td>CMGT 267, Plane Surveying (3) Prerequisites, MATH 154, IT 101, and CMGT 265. Corequisite, CMGT 267LAB or CMGT 267LABHC. General surveying theory and practice pertaining to distance, elevation and angle measurement. Includes traverse calculation and an emphasis on construction applications.</td>
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</tr>
<tr>
<td>CMGT 267LAB, Plane Surveying Field Session (1). Corequisite, CMGT 267. One surveying field session weekly.</td>
<td></td>
</tr>
<tr>
<td>CMGT 267LABHC, Heavy Civil Highway Field Session (1). One field session weekly.</td>
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</tr>
<tr>
<td>CMGT 286, Construction Safety and Supervision (3). Prerequisite, CMGT 265. A comprehensive course which covers the safety regulations pertaining to construction. Additionally, the class will include concepts on managing construction crews.</td>
<td></td>
</tr>
<tr>
<td>CMGT 320, Electrical Systems Design (3). Prerequisite, MATH 172 or permission of instructor. Design and specification of building electrical systems including circuit principles, power distribution and low voltage controls.</td>
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<tr>
<td>CMGT 343LAB, Construction Estimating I Laboratory (1). Corequisite, CMGT 343. One estimating computer laboratory session weekly.</td>
<td></td>
</tr>
<tr>
<td>CMGT 344LAB, Construction Estimating II Laboratory (1). Corequisite, CMGT 344. One estimating computer laboratory session weekly.</td>
<td></td>
</tr>
<tr>
<td>CMGT 345, Heavy Civil Estimating II (3). Prerequisite, CMGT 343; co-requisite, CMGT 345LAB. Advanced estimating techniques and bid preparation for heavy civil and highway construction.</td>
<td></td>
</tr>
<tr>
<td>CMGT 345LAB, Heavy Civil Estimating II Laboratory (1). Co-requisite, CMGT 345. One weekly estimating laboratory session.</td>
<td></td>
</tr>
<tr>
<td>CMGT 346, Construction Methods and Materials (4). Prerequisite, CMGT 265. Materials commonly used and the various methods employed in construction. Introduction to materials testing.</td>
<td></td>
</tr>
</tbody>
</table>
CMGT 347. Heavy Civil Methods and Materials (4). Prerequisite, CMGT 265. Materials commonly used and the various methods employed with an emphasis on heavy, civil, marine and highway construction.

CMGT 440. Temporary Structures (4). Prerequisite, IET 312 and CMGT 346 or 347. An introduction to the materials, methods and techniques associated with temporary construction facilities such as falsework, scaffolding, formwork and cofferdams.

CMGT 441. Wood and Steel Construction (4). Prerequisites, IET 312, and CMGT 346. A comprehensive study of the materials, design and erection of wood and steel structures.

CMGT 442. Building Service Systems (3). Prerequisite, CMGT 344. An introduction to building service systems. Study the interfaces and specifications of mechanical and plumbing systems in building construction. Topics include: plumbing, fire suppression, storm drainage, heat gain/loss, heating and cooling systems, pressure and piping systems, and elevators.

CMGT 443. Heavy Civil Utilities (4). Prerequisite, CMGT 346 or CMGT 347. An introduction to the materials, equipment, methods, and safety requirements for the construction of underground and above ground utilities including water, sewer, natural gas and electrical systems.

CMGT 444. Codes, Contracts and Specifications (4). Prerequisites, CMGT 343, BUS 241 and ENG 102. Construction contracts and liability, bonding, arbitration, specifications, and building codes administration.

CMGT 445. Heavy Civil Contract Law (4). Prerequisite, CMGT 344 or CMGT 345 and BUS 241. Construction contracts, liability, bonding, arbitration and heavy civil highway specifications.


CMGT 450. Soils and Foundations (4). Prerequisites, IET 312 and CMGT 346 and GEOL 101, GEOL 101LAB or GEOL 108. An introduction to soil mechanics and analysis and design of both shallow and deep foundations.

CMGT 455. Principles of Construction Management (4). Prerequisites, CMGT 447 and CMGT 444. Fundamental tools of construction management. Topics: contract management, scheduling, cost estimating, cost control, conflict management, negotiating, team building, quality control, safety, and a capstone project.

CMGT 456. Principles of Heavy Civil Construction Management (4). Prerequisite, CMGT 447 and CMGT 344 or CMGT 345. Fundamental tools of heavy civil highway construction management. Topics include: contract management, scheduling, cost estimating, cost control, conflict management, negotiating, team building, quality control, safety and a capstone project.

CMGT 460. Concrete Construction (4). Prerequisites, CMGT 346, CMGT 441 and CHEM 181. Manufacturing and testing of concrete; field practices; and formwork. Two hours lecture and two hours laboratory per week.

CMGT 461. Pavement Design and Construction (4). Prerequisites, IET 312 and CMGT 346 or CMGT 347. An introduction to flexible and rigid pavement design and construction including pavement types, materials, construction methods and maintenance concerns.

CMGT 480. Heavy, Civil, and Highway Construction (4). Prerequisites, CMGT 344 or CMGT 345. Study of the Heavy, Civil, and Highway construction techniques and equipment used to build infrastructure projects such as highways, bridges, and site development.

CMGT 485. Construction Accounting, Finance and Contemporary Topics (4). Prerequisite, CMGT 444. Project cost accounting principles, applications and impact on profitability. Includes principles of activity based costing; WBS, earned value, cash management, value engineering and contemporary topics.

CMGT 488. Professional Certification (1). Prerequisite CMGT 444. A comprehensive review of professional construction management principles and technical skills in preparation for a national certification examination.

CMGT 495. Construction Management Competition Preparation (1). Prerequisite, CMGT 344. Students work in teams to prepare for Construction Management competition. Teams develop cost, schedule, site layout and safety plans for a major construction project. Students will compete in the Associated Schools of Construction. Grade will be S or U. May be repeated to a maximum of 3 credits.

CMGT 499. Seminar (1-5). May be repeated.

Bachelor of Science
Electronics Engineering Technology Major with Specialization

Advisor: L. Holden (Coordinator), T. Q. Yang, T. Yostheimer

The Electronic Engineering Technology degree is accredited by the Technology Accreditation Board of the Accreditation Commission of the Accreditation Board for Engineering Technology (TAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone (410) 347-7700.

The technologists graduating from this program are applications oriented, building upon a background of mathematics, science and technology. They interface with engineers at the product level and produce practical, workable results quickly; install and operate technical systems; devise hardware and software from proven concepts; develop and produce products; service machines, programs, and systems; manage production facilities and work groups; and provide support for technical systems hardware and software.

The core of the major’s coursework is electronics, digital principles, programming, math, and science. There are two specializations: Computer Engineering Technology for students specializing in software, and Electronic Systems for those specializing in hardware.

Students interested in engineering courses after graduation should complete PHY 211, 212, 213 and MATH through differential equations.

Students pursuing this degree should work with the departmental advisors to assure that they have met the prerequisites for the upper-division electives. Due to the number of hours required, some students may find that this program requires additional time to complete.

Electronics Engineering Technology Required Core Courses Credits
EET 221, Basic Electricity ................................. 3
EET 221LAB, Basic Electricity Laboratory ........ 1
EET 312, Basic Electronics .............................. 4
EET 314, Network Analysis ............................. 4
EET 322, Intermediate Electronics ................. 4
EET 371, Digital Circuits ............................... 4
EET 372, Advanced Digital ............................ 4
EET 375, Microprocessor Applications ......... 4
EET 376, Microprocessors and Instrumentation .................................................. 4
CS 110, Programming Fundamentals I (or approved substitute) .................. 4
CS 111, Programming Fundamentals II (or approved substitute) ............... 4
IET 301, Engineering Project Cost Analysis 4

Industrial and Engineering Technology 145
IET 380, Quality Control ........................... 5
IET 389, Technical Presentations ........... 3
MATH 172, Calculus ............................. 5
MATH 173 Calculus .............................. 5
MATH 265, Linear Algebra ........................ 4
Math Elective, select one ...................... 3-5
MATH 260, Sets and Logic (5)
MATH 330, Discrete Mathematics (5)
MATH 272, Multivariable Calculus (5)
MATH 311, Statistical Concepts and
Methods (5)
MATH 376, Differential Equations (3)
PHYS 111, 111LAB, 112, 112LAB, 113,
113LAB, Introductory Physics OR
PHYS 181, 181LAB, 182, 182LAB, 183,
183LAB, General Physics ..................... 15
Written Communications Elective ......... 3-5
CS 325, Technical Writing in Computer
Science (3)
ENG 310, Technical Writing (4)
ADMG 385, Business Communication
and Report Writing (5)

EET Core Total 87-91

Computer Engineering
Technology Specialization
Advisors: Lad Holden, James Schwing,
Tim Yoxtheimer

Required Courses Credits
EET Core Requirements ................. 87-91
CS 301, Data Structures ........................ 4
CS 302, Advanced Data Structures and
File Processing ............................. 4
CS 311, Computer Architecture I ........ 4
CS 450, Computer Network and
Data Communications ................... 4
CS 470, Operating Systems ................ 4
CS 473, Parallel Computing ............... 4
CS 489, Senior Colloquium ............... 1
Department-Approved Technical
Electives .................................. 18-22

Total 134

Electronic Engineering
Technology Courses

EET 221. Basic Electricity (3). Prerequisite,
MATH 162 or MATH 153. Corequisite,
EET 221LAB. Fundamental principles of
electricity, Ohms law, Kirchhoffs laws,
and the power equation applied to DC and
AC circuits.

EET 221LAB. Basic Electricity Laboratory
(1). Co-requisite EET 221. Basic principles
of electrical measurement and testing of
DC and AC Circuits. Three hours
laboratory per week.

EET 312. Basic Electronics (4). Prerequisites,
EET 221 and EET 221LAB. Solid state
electronic devices and their application to
power supplies and amplification utilizing
discrete and integrated circuit
techniques. Lecture/laboratory.

EET 314. Network Analysis (4). Prerequisites,
EET 221, EET 221LAB, MATH 162 or MATH 154.
Network analysis techniques including computer
solutions, loop and nodal equations,
complex impedance. Thevenin and Norton
equivalents, superposition, and Gauss
elimination. Lecture/laboratory.

EET 322. Intermediate Electronics (4).
Prerequisite, EET 312 or permission of
instructor. Linear circuits utilizing discrete
and integrated components. EET’s, SCR’s,
multistage systems, oscillators, regulators,
timers and op-amps. Two hours lecture
and four hours laboratory per week.

EET 323. Active Linear Circuits (4).
Prerequisites, EET 322 or equivalent and
MATH 172. Analysis and design of
multistage transistor amplifier with emphasis
on the operational amplifier and
its applications. Low-frequency and high-
frequency limitations. Miller effect, pulse
testing, Bode Plots, Nyquist stability
criteria. Barkhausen criteria for oscillation.
Power amplifiers, heat sinks, integrated
circuit voltage regulators.

EET 324. Advanced Electrical Network (4).
Prerequisites, EET 314, EET 370, MATH
173. An advanced course in analysis
techniques applied to dynamic systems.
Solution of time and frequency domain
problems stressing the relationship
between electrical and mechanical
systems, including linear differential
equations and transformation techniques.

Total 134

Electronic Systems
Specialization
Advisors: Lad Holden, Tim Yoxtheimer,
T. Q. Yang

Required Courses Credits
EET Core Requirements ................. 87-91
EET 323, Active Linear Circuits .......... 4
EET 324, Advanced Electrical Networks .. 4
EET 332, Electric Power and Machinery .... 4
EET 342, Instrumentation ................... 4
EET 343, Process Control ................... 4
EET 370, Microprocessor Assembly
Language .................................. 3
EET 489, Senior Technical Presentations . 2
Department Approved Technical
Electives ................................ 18-22

EET 332. Electrical Power and Machinery
(4). Prerequisite, EET 221 and EET 221LAB
or equivalent. A study of power
transformers, single and polyphase
circuits. The study of DC machines and
AC single and polyphase synchronous and
induction machines.

EET 342. Instrumentation (4). Prerequisite,
EET 312. Analysis of instrumentation
systems in the broad context of signal
conditioning and data collection.
Accuracy, transducers, analog and digital
signal conditioning, information
transmission and data collection.
Lecture/laboratory.

EET 343. Process Control (4). Prerequisite,
EET 342. Application of analog and digital
controller principles to process control
systems. Three hours lecture and two
hours laboratory per week.

EET 361. MATLAB Applications (1). An
introduction to MATLAB computation
software applications, functions, and
graphics.

EET 362. Electronics Workbench
Applications (1). An introduction to
Electronic Workbench circuit simulation
software. Techniques used to simulate AC
and DC electric and electronic circuits will
be introduced.

EET 363. Lab View Applications (1). An
introduction to Lab VIEW instrumentation
software. Techniques used to simulate
instrumentation systems will be
introduced.

EET 370. Microprocessor Assembly
Language (3). A basic introduction to
microprocessors and their programming
using assembly language.

EET 371. Digital Circuits (4). An
introduction to number systems, logic
equations, Boolean algebra, DeMorgan’s
theorem, Karanugh Maps, Quine-
McClusky reduction techniques, and
combination logic elements. Three hours
lecture and two hours laboratory per week.

Prerequisite, EET 371 or equivalent.
Analysis of electronic digital circuits.
Topics include: Bipolar and MOS logic
gates, loading and interfacing, counters,
adders, memories, encoders, decoders,
digital displays, AD and DA converters.
Two hours lecture and four hours
laboratory per week.

EET 375. Microprocessor Applications (4).
Prerequisites, EET 312. Examine and
compare the basic components of
microprocessor systems as applied to
numerical control and robotics. Three
hours lecture and two hours laboratory per week.
EET 376. Microprocessors and Instrumentation (4). Prerequisite, EET 375 or equivalent. Use of microprocessors and related components in the design of microprocessor-based systems. Interfacing of microprocessors and measuring instruments are studied. Consideration is given to the trade-offs between hardware and software.

EET 418. Electronic Fault Detection (2). Prerequisite, EET 376. Advanced testing of analog and digital systems. Both manual and automatic test systems will be considered. One hour lecture and three hours laboratory per week.

EET 432. Generation and Transmission of Electrical Power (4). Prerequisite, EET 332. A study of the generation and transmission of electrical energy. Includes techniques used by electric utilities for the protection of generating equipment and transmission lines, an introduction to the economic considerations of power plant operation and three-winding transformers, and methods of solving unbalanced three-phase systems.

EET 445. Electro-Mechanical Controls (4). Prerequisites, EET 324 and EET 343 or equivalent. A study of the components in open-loop and closed-looped systems. Included are sensing devices, error detectors, potentiometers, synchrons, resolvers, modulators, demodulators, amplifiers, motors, generators, and network. An analysis course that stresses operation time and frequency-response characteristics, and proper adjustment of the components.

EET 451. Communications - Optical Systems (4). Prerequisite, EET 323. Application of fiber optics to communications systems including measurement of parameters, sources, detectors, construction of fiber optic communication links. Three hours lecture and two hours laboratory per week.

EET 452. Communications - Local Area Networks (4). Prerequisites, EET 323 and 375 or permission. Local Area Network communication systems, Manufacturing Automation-Protocol, time domain to frequency domain conversions, and modulation techniques. Three hours lecture and two hour laboratory per week.

EET 453. Communications - Microwave Systems (4). Prerequisite, EET 323. Analysis of the radiation and propagation of the communication signal, and the application of antennas for impedance matching and for providing systems gain. Two hours lecture and four hours laboratory per week. Formerly ELT 473. Students may not receive credit for both.

EET 455. Electronic Communications (4). Prerequisite, EET 322 or permission of instructor. An introduction to electronic communications circuits. Two hours lecture and four hours laboratory per week.

EET 475. Microcontrollers (4). Prerequisites, EET 375 and EET 376. Use and programming of microcontrollers in the design and implementation of embedded controller systems.

EET 476. Mini-Computer Technology (4). Prerequisite, EET 376. Analysis of mini-computer circuits. Organization of circuits into a complete computing system. Special purpose assembly language programming techniques for location of circuit malfunctions with the aid of computer maintenance manuals and laboratory equipment. Three hours lecture and two hours laboratory per week.

EET 477. Robotics (4). Prerequisites, EET 375 and EET 342. Microprocessor applications in robotics, automated systems, and digital control. Three hours lecture and two hours laboratory per week.

EET 478. Senior Project I (2). Prerequisite, permission of instructor. An extensive individual design and/or analytical project performed in consultation with one or more faculty advisor. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive and thorough laboratory performance is required.

EET 479. Senior Project II (2). Prerequisite, EET 478. An extensive individual design and/or analytical project performed in consultation with one or more faculty advisor. Collaboration with representatives of industry, government agencies, or community institutions is encouraged. Evidence of extensive performance is required.

EET 489. Senior Technical Presentations (2). Prerequisites, senior standing and completion of the technical core.

Bachelor of Science
Industrial Technology Major
Advisors: T. Yoxtheimer (Coordinator), S. Calahan, K. Calhoun, C. Johnson, C. Oncina

This major prepares the graduate for leadership positions in industry and technical distribution. The program applies algebra, trigonometry and the physical sciences to industrial systems. Graduates select 40-41 credits by advisement in an area of technical specialization. Specializations exist in Industrial Distribution, Industrial Electronics, Industrial Manufacturing, Power Systems, Cast Metals, Metal Fabrication, Non-destructive Testing, Wood Production and specializations by departmental advisement.

Students pursuing this degree should work closely with their department advisor to assure that they have met the prerequisites for the upper division electives.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EIT 160, Computer Aided Design</td>
<td>4</td>
</tr>
<tr>
<td>IET 301, Engineering Project Cost Analysis</td>
<td>4</td>
</tr>
<tr>
<td>IET 380, Quality Control</td>
<td>5</td>
</tr>
<tr>
<td>IET 385, Industrial Design</td>
<td>3</td>
</tr>
<tr>
<td>IET 389, Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>EET 221, 221LAB, Basic Electricity (with laboratory)</td>
<td>3.1</td>
</tr>
<tr>
<td>EET 312, Basic Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MET 310, Hydraulics/Pneumatics</td>
<td>4</td>
</tr>
<tr>
<td>MET 345, Production Technology</td>
<td>4</td>
</tr>
<tr>
<td>MET 351, Metallurgy/Materials &amp; Processes</td>
<td>4</td>
</tr>
<tr>
<td>SHM 386, Occupational Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>MATH 154, Pre-Calculus Mathematics II</td>
<td>.5</td>
</tr>
<tr>
<td>PHYS 111, 111LAB, Introductory Physics/Lab</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 111, 111LAB, Introduction to Chemistry/Lab OR CHEM 181, 181LAB, General Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>IT 101, Computer Applications</td>
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</tr>
<tr>
<td>ADMG 385, Business Communications and Report Writing (5) OR ENG 310, Technical Writing</td>
<td>4-5</td>
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<tr>
<td>Computer Elective (IET Department approved)</td>
<td>4</td>
</tr>
</tbody>
</table>

Sub Total 68-69

Technical Specialization
By advisement

Sub Total 41-42
Total 110

Transfer students MUST complete a minimum of 25 credits from the IET Department.

Industrial Technology Minor

Advisors: T. Yoxtheimer

Courses to be selected from Industrial Technology Department courses under Department advisement.

Total 25

Bachelor of Applied Science
Industrial Technology Major

The Bachelor of Applied Science in Industrial Technology allows persons who have worked in industry for a period of time
to enhance their career potential by utilizing their community college education and on the job experience to earn a baccalaureate degree after taking upper division course work. The goal of the program is to provide students with technical skills and knowledge to function as professionals within the industrial environment.

Admission Requirements: Prior to being admitted the student entering the Bachelor of Applied Science Industrial Technology program will have:
- an appropriate and approved associate degree as issued by a Washington State Community College;
- taken at least 20 credits of general education basic skills courses
- completed prerequisites for the program;
- taken course equivalencies to IET 160, BUS 221, and EET 221/EET 221LAB;
- completed 2000 hours of recent, documented work experience in an industrial technology related job and approved by the department chair.

Prerequisites
IT 101, Computer Applications (3)
MATH 153, Pre-Calculus Mathematics I (5)
PHY 111/111LAB, Introductory Physics and Lab (5)
CHEM 111/111LAB, Intro to Chemistry and Lab (5)

Required Courses  Credits
EET 221/221LAB, Basic Electricity and Lab 4
IET 160, Computer Aided Design and Drafting 4
BUS 221, Introduction to Business Statistics 5
IET 301, Engineering Project Cost Analysis 4
IET 380, Quality Control 5
IET 385, Industrial Design 3
IET 411, Mechanical Power Transmission 4
MET 345, Production Technology 4
MET 351, Metallurgy/Materials and Processes 4
MET 388, Tool Design 4
SHM 386, Occupational Safety and Health 3
ADMT 385, Business Communications and Report Writing 5
Departmental approved electives 12
EET 312, Basic Electronics (4)
EET 332, Electrical Power and Machinary (4)
MET 310, Hydraulics and Pneumatics (4)
MET 386, Materials Characterization (4)
MET 382, Plastics and Composites (4)
MET 483, Ceramics and Composites (4)
SHM 444, Fundamentals of Hazardous Materials (4)

Total 61

Industrial and Engineering Technology Courses

IET 101. Modern Technology (5). A study of how basic scientific principles are applied daily in industrial societies through a survey of transportation, electrical power, construction, and consumer product technologies.

IET 145. Machine Woodworking (4). Machine and tool operations, wood technology, designing and construction principles, finishing methods and materials. Two hours lecture and four hours laboratory per week.

IET 160. Computer Aided Design and Drafting (4). Hands-on training in the operation of AutoCAD’s design and drafting software system with emphasis on features, limitations and dimensioning strategy.


IET 165. Engineering Drawing I (4). Fundamentals of orthographic projection, isometric drawings, applied geometry, sections, auxiliary view, developments, lettering and drawing reproductions. Two hours lecture and three hours laboratory per week.

IET 201. Energy Sources and Power (3). A study of the various forms of power, its generation, application and implications for technology and a technological society.

IET 215. Small Engines (4). Prerequisite, IET 210 or permission of instructor. Maintenance and repair of one and two cylinder internal combustion engines. Two hours lecture and four hours laboratory per week.

IET 219. Engine Performance Measurement (4). Prerequisite, IET 210 or permission of instructor. Vehicle fuel and ignition systems and their import on heat. Two hours lecture and four hours laboratory per week.

IET 265. Three-Dimensional Modeling (4). Prerequisites, IET 160 and IET 165 or permission of instructor. Design of parts, assemblies and working drawings using 3-D solid modeling software, basic theory of threaded fasteners and gears, welding representation and geometric dimensioning and tolerancing. Two hours lecture and four hours laboratory per week.

IET 290. Cooperative Education (1-15). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

IET 296. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

IET 298. Special Topics (1-6).

IET 299. Seminar (1-5). May be repeated.


IET 311. Statics (4). Prerequisites, PHYS 111, 211 and MATH 173 or permission of instructor. Introductory statics including forces and equilibrium. Principles of structures including trusses, beams, frames, machines and friction. Formerly CMGT 314/MET 214. Students may not receive credit for both.


IET 315. Vehicle Electric Systems (4). Prerequisite, IET 210. Starting, charging, regulation, ignition, and onboard microprocessor systems as used in automobiles, industrial materials handling vehicles, and recreational vehicles. Two hours lecture and four hours laboratory per week.

IET 341. Furniture Construction (4). Prerequisite, IET 145 or permission of instructor. Design and construction of contemporary furniture. Individual problems. Two hours lecture and four hours laboratory per week.

IET 353. Pattern Making (4). Prerequisite, MET 257 or permission of instructor. Two hours lecture and four hours laboratory per week.

IET 373. Programmable Logic Controller Applications (4). Prerequisite, permission of instructor. A study of programmable logic controller concepts, components, systems, programming and applications. Three hours lecture and two hours laboratory per week.

IET 380. Quality Control (5). Prerequisite, BUS 221 or permission of instructor. Provides the foundation necessary to understand and apply statistical quality control techniques, product reliability procedures and the management aspects of quality assurance.

IET 384. Industrial Processes and Materials (3). A technical study of modern industrial materials and processes used in manufacturing. Metallic and nonmetallic materials are treated along with industrial aspects of each.
IET 385. Industrial Design (3). Principles of design as related to materials and construction methods, and their application to industrial problems. Three hours lecture per week.

IET 386. Materials Characterization (4). Prerequisites, intermediate algebra or equivalent or permission of instructor. Studies of material properties with emphasis on concepts, specifications, procedures, measurement, quantification and reporting. Laboratory activities include strength, hardness, impact and non-destructive testing.

IET 389. Technical Presentations (3). Prerequisite, permission of instructor. Written and oral presentations based on technical reference material utilizing the library, technical society publications, and the Internet.

IET 398. Special Topics (1-6).

IET 411. Mechanical Power Transmission (4). Prerequisite, permission of instructor. Design, analysis and construction of mechanical power transmission systems. Emphasis on design principles and calculations, product knowledge, use of catalogues and references, and troubleshooting techniques. Laboratory experiences include work on gear drives, chain, belt and couplings. Two hours lecture and four hours laboratory per week.

IET 415. Air Logic (4). Prerequisites, EET 221, 221L, and MET 310. Techniques of pneumatic logic control, design, analysis, proof, circuit layout, building and troubleshooting. Two hours lecture and four hours laboratory per week.

IET 430. Methods of Teaching Industrial Education (3).

IET 433. Industrial Education Laboratory Planning (3). Planning of school shop and labs, new construction and remodeling of facilities. Management of industrial education facilities, inventories: records of tools, equipment, materials; safety and student personnel.

IET 446. Shop and Tool Maintenance (3). Prerequisites, IET 145 and 255, or permission of instructor. Adjustment, maintenance, and repair of industrial machines. Demonstrations and lectures by factory representatives. Two lectures and two hours laboratory per week.

IET 448. Cabinetmaking (3). Prerequisites, IET 145 and 345 or permission of instructor. Design, construction and finishing of kitchen, bath and utility cabinets.

IET 457. Advanced Foundry (4). Prerequisite, MET 257, IET 353, or permission of instructor. Two hours lecture and four hours laboratory per week.

IET 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

IET 491. Workshop (1-6).

IET 495. A,B,C Senior Project I,II,III (2,2,2) Prerequisites, senior standing and permission of Department Chair. Must be taken in sequence. Application and integration of previous course material in the solution of industrial problems. Results of the project to be presented to the Department in writing and orally before the technology faculty, students and selected industrial representatives. Part I of the project includes design, materials selection, engineering and preliminary costs. Part II includes manufacturing concepts, physical facilities, production equipment, personnel requirements, and PERT or CPM. Part III includes finance, quality control and distribution.

IET 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

IET 498. Special Topics (1-6). IET 499. Seminar (1-5). May be repeated.

Bachelor of Science Mechanical Engineering Technology Major with Specialization

Advisor: C. Johnson, (Coordinator), C. Oncina.

The Mechanical Engineering Technology degree is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering Technology (TAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone (410) 347-7700.

The Industrial and Engineering Technology Department offers a Bachelor of Science degree in Mechanical Engineering Technology (MET) with specializations in Mechanical or Manufacturing Technology. The major provides a broad foundation in the practical application of mechanical engineering principles. Graduates concentrating in Mechanical Technology may pursue one of the following career paths: product development, system evaluation, plant operation and management, technical sales, field service, environmental quality control and energy production. Graduates specializing in Manufacturing Technology are prepared to enter career paths as tool designers, tool and production planners, numerical control programmers, machine planners, computer assisted machine planners, manufacturing process analysts, quality assurance, and technical field representatives.

In the absence of an appropriate background, the student may find it necessary to take IET 165, Engineering Drawing I. Those students who are interested in engineering courses after graduation should complete the engineering physics sequence (PHYS 181, 182, 183) and mathematics through differential equations. Due to the number of hours in this program, some students may find that this program requires additional time to complete. Students pursuing this degree should work with the department advisor to assure that the prerequisites for the upper division electives have been met.

Mechanical Engineering Technology Core Requirements

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 154, Pre-Calculus Mathematics II</td>
<td>5</td>
</tr>
<tr>
<td>MATH 172, Calculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH 173, Calculus</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 181, 181LAB or PHYS 111, 111LAB, General or Introductory Physics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 182, 182LAB or PHYS 112, 112LAB, General or Introductory Physics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 183, 183LAB or PHYS 113, 113LAB, General or Introductory Physics</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 181, General Chemistry</td>
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<tr>
<td>CHEM 181LAB General Chemistry Laboratory</td>
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</tr>
<tr>
<td>ENG 310, Technical Writing</td>
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</tr>
<tr>
<td>COM 345, Business and Professional Speaking</td>
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<tr>
<td>Computer Science Elective</td>
<td>4</td>
</tr>
<tr>
<td>IET 160, Computer Aided Design and Drafting</td>
<td>4</td>
</tr>
<tr>
<td>IET 265, Three-Dimensional Modeling</td>
<td>4</td>
</tr>
<tr>
<td>IET 311, Statics</td>
<td>4</td>
</tr>
<tr>
<td>IET 312, Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>EET 221, Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>EET 221LAB, Basic Electricity Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MET 255, Machining</td>
<td>4</td>
</tr>
<tr>
<td>MET 314, Applied Thermodynamics</td>
<td>4</td>
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<tr>
<td>MET 314LAB, Applied Thermodynamics Laboratory</td>
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<tr>
<td>MET 315, Fluid Dynamics</td>
<td>5</td>
</tr>
<tr>
<td>MET 426, Applications in Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>MET 327, Technical Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>MET 327LAB, Technical Dynamics Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>
### Mechanical Engineering Technology Courses

**MET 255. Machining** (4). Basic operations and technical information concerning common metal working machines and metal machining processes. Two hours lecture and four hours laboratory per week.

**MET 257. Casting Processes** (4). Theory and practice in green sand, shell core, permanent mold, no bake and evaporation casting processes. Two hours lecture and four hours laboratory per week. Formerly IET 257. Students may not receive credit for both.

**MET 310. Hydraulics/Pneumatics** (4). Prerequisite, IET 210 or permission of instructor. A study of the application, controls and uses of air and liquid for the transmission of power. Two hours lecture and four hours laboratory per week. Formerly IET 310. Students may not receive credit for both.

**MET 314. Applied Thermodynamics** (4). Prerequisite PHYS 182 or PHYS 112 and MATH 173; corequisite MET 314LAB. Properties of pure substances, first and second laws of thermodynamics, enthalpy and entropy, perfect gases, Carnot cycle, steam cycles, refrigeration cycles, mixtures of perfect gases, chemical reactions and combustion. Four hours lecture per week.

**MET 314LAB. Applied Thermodynamics Laboratory** (1). Prerequisite, IET 311; corequisite MET 314LAB. Theoretical principles, experimental techniques and data systems. Formerly IET 320. Students may not receive credit for both.

**MET 315. Fluid Dynamics** (5). Prerequisite MET 314 and IET 311. Fluid statics, continuity, Bernoulli and the general energy equation, laminar and turbulent flow, friction losses in pipes and ducts, pump performance and selection, compressible flow, and fluid measurements. Four hours lecture and two hours laboratory per week.

**MET 316. Applied Heat Transfer** (5). Prerequisite, MET 314. Steady and unsteady state heat conduction, free convection, forced convection in tubes, forced convection over exterior surfaces, radiation heat transfer, change in phase heat transfer, heat exchangers and heat pipes. Four hours lecture and two hours laboratory per week.

**MET 320. Fundamentals of Laser Technology** (4). Prerequisite PHYS 113 or permission of instructor. Overview of laser technology with emphasis on laser characteristics, safety and applications. Four hours lecture per week. Formerly IET 320. Students may not receive credit for both.

**MET 327. Technical Dynamics** (4). Prerequisite, IET 311; corequisite, MET 327 or permission of instructor. Practical application of dynamical systems including usage of state-of-the-art instrumentation and data recording systems.

**MET 345. Production Technology** (4). Prerequisite, permission of instructor. Mass production principles, organization for production, product engineering, production system design, jigs and fixture development, special problems in production. Formerly IET 345. Students may not receive credit for both.

**MET 351. Metallurgy/Materials and Manufacturing Technology Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 316</td>
<td>Applied Heat Transfer</td>
<td>5</td>
</tr>
<tr>
<td>MET 411</td>
<td>Energy Systems</td>
<td>5</td>
</tr>
<tr>
<td>EET 332</td>
<td>Electrical Power and Machinery</td>
<td>4</td>
</tr>
<tr>
<td>IET 257</td>
<td>Technical Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>MET 314</td>
<td>Applied Thermodynamics</td>
<td>4</td>
</tr>
<tr>
<td>MET 315</td>
<td>Fluid Dynamics</td>
<td>5</td>
</tr>
<tr>
<td>MET 316</td>
<td>Applied Heat Transfer</td>
<td>5</td>
</tr>
<tr>
<td>MET 320</td>
<td>Fundamentals of Laser Technology</td>
<td>4</td>
</tr>
<tr>
<td>MET 327</td>
<td>Technical Dynamics</td>
<td>4</td>
</tr>
<tr>
<td>IET 301</td>
<td>Engineering Project Cost Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MET 320</td>
<td>Fundamentals of Laser Technology</td>
<td>4</td>
</tr>
<tr>
<td>MET 327</td>
<td>Technical Dynamics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>MET 320</td>
<td>Fundamentals of Laser Technology</td>
<td>4</td>
</tr>
<tr>
<td>MET 327</td>
<td>Technical Dynamics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total** 135-136 hours
processes with emphasis on inventive ability and problem solving. Formerly IET 386. Students may not receive credit for both.

MET 411. Energy Systems I (5). Prerequisite MET 316. Power generation, energy reserves, fuels, reciprocating machines, internal combustion engines, rotating compressors, axial flow turbines and gas turbine power. Four hours lecture and two hours laboratory per week.

MET 412. Alternative Energy Systems (5). Prerequisite permission of instructor. Comprehensive overview of alternative energy technology including societal issues, energy reserves, fossil, nuclear, solar, wind, geothermal, hydrogen and biomass energy sources, and advanced energy conversion systems.

MET 418. Mechanical Design I (5). Prerequisite permission of instructor. Comprehensive overview of alternative energy technology including societal issues, energy reserves, fossil, nuclear, solar, wind, geothermal, hydrogen and biomass energy sources, and advanced energy conversion systems.

MET 419. Mechanical Design II (5). Prerequisite, MET 418. Fasteners, welds, machine frames, pressure vessels, hydraulic cylinders, electrical motors and actuators. Four hours lecture and two hours laboratory per week.

MET 420. Finite Element Analysis (4). Prerequisites, IET 160, MET 326, or permission of instructor. Computerized modeling of structural, vibrational and thermal design problems. Two hours lecture and two hours laboratory per week.

MET 423. Computer Aided Design and Manufacturing (4). Prerequisites MET 418, IET 160 and MET 255 or permission of instructor. Integrates Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM). Three hours lecture and two hours laboratory per week.

MET 426. Applications in Strength of Materials (4). Prerequisite, IET 312 and MET 351. Topics support stress analysis and design. Laboratory activities include material strength, hardness, impact testing, strain gage technology, photelasticity, ultrasonics and eddy current. Formerly MET 326. Students may not receive credit for both.

MET 483. Ceramics and Composites (4). Prerequisite, CHEM 111LAB or CHEM 181LAB. Composition, characterization and classification of ceramics and related composite materials incorporating industrial applications, processing and fabrication.

MET 495A, B, C. Senior Project I, II, III (3, 3, 3). Prerequisite for MET 495A is MET 315. Prerequisite for MET 495B is MET 495A. Prerequisite for MET 495C is MET 495B. Courses must be taken in sequence. The senior project is a capstone course that integrates all the major elements of the MET curriculum in a project related activity. The topic is chosen by the student in concurrence with the instructor and must include elements of planning, design and analysis (Phase I), construction (Phase II) and test and evaluation (Phase III). Collaboration with representatives of industry, government agencies or community institutions is encouraged. As an alternative, it will be possible to select a design study for the senior project for all three quarters, providing it is sufficiently comprehensive and approved by the MET advisor.

Industrial Education
Broad Area Major
Advisor: Scott Calahan

This major satisfies the endorsement for Technology Education. Qualifies for teaching secondary industrial arts and technology education. Students selecting this major must have a basic background in industrial arts - woods, metals, and drafting; mathematics through trigonometry. One year high school proficiency in these subjects will normally suffice. Admission to this program requires that students must have completed CHEM 111, MATH 153 and PHY 111. (Equivalent courses will be allowed.) In absence of this background, courses may be taken at this University. IET 430 is a prerequisite for student teaching. Students taking this major are required to complete the professional education program requirements offered through the Department of Education.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET 145, Machine Woodworking</td>
<td>4</td>
</tr>
<tr>
<td>IET 160, Computer Aided Design</td>
<td>4</td>
</tr>
<tr>
<td>IET 210, Energy Sources and Power</td>
<td>3</td>
</tr>
<tr>
<td>MET 255, Metal Machining</td>
<td>4</td>
</tr>
<tr>
<td>IET 265, Three-Dimensional Modeling</td>
<td>4</td>
</tr>
<tr>
<td>EET 221, Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>EET 221LAB, Basic Electricity Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>EET 312, Basic Electronics</td>
<td>4</td>
</tr>
<tr>
<td>EET 371, Digital Circuits</td>
<td>4</td>
</tr>
<tr>
<td>MET 345, Production Technology</td>
<td>4</td>
</tr>
<tr>
<td>MET 357, Welding/Fabrication</td>
<td>4</td>
</tr>
<tr>
<td>IET 385, Industrial Design</td>
<td>3</td>
</tr>
<tr>
<td>SHM 386, Occupational Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>MET 382, Plastics and Composites</td>
<td>4</td>
</tr>
<tr>
<td>IET 430, Methods in Teaching Industrial Education</td>
<td>4</td>
</tr>
<tr>
<td>IET 433, Industrial Education Laboratory Planning</td>
<td>3</td>
</tr>
<tr>
<td>OCED 410, Principles of School to Work Programs</td>
<td>4</td>
</tr>
</tbody>
</table>

Group I, General

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET 341, Furniture Construction</td>
<td>4</td>
</tr>
<tr>
<td>MET 355, Advanced Machining and CNC Programming</td>
<td>4</td>
</tr>
<tr>
<td>EET 322, Intermediate Electronics</td>
<td>4</td>
</tr>
</tbody>
</table>

Group II, Wood

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET 341, Furniture Construction</td>
<td>4</td>
</tr>
<tr>
<td>IET 353, Pattern Making</td>
<td>4</td>
</tr>
<tr>
<td>CMGT 245, Light Commercial Construction</td>
<td>5</td>
</tr>
<tr>
<td>IET 447, Wood and Metal Finishing</td>
<td>3</td>
</tr>
</tbody>
</table>

Group III, Drafting

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 388, Tool Design</td>
<td>4</td>
</tr>
<tr>
<td>Department approved electives</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Group IV, Metals

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 257, Casting Processes</td>
<td>4</td>
</tr>
<tr>
<td>MET 351, Metallurgy/Materials and Processes</td>
<td>4</td>
</tr>
<tr>
<td>MET 355, Advanced Machining and CNC Programming</td>
<td>4</td>
</tr>
<tr>
<td>IET 457, Advanced Foundry</td>
<td>4</td>
</tr>
</tbody>
</table>

Group V, Electronics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 322, Intermediate Electronics</td>
<td>4</td>
</tr>
<tr>
<td>EET 342, Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>EET 372, Advanced Digital</td>
<td>4</td>
</tr>
<tr>
<td>EET 455, Electronics Communication</td>
<td>4</td>
</tr>
</tbody>
</table>

Group VI, Power

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>IET 215, Small Engines</td>
<td>4</td>
</tr>
<tr>
<td>IET 219, Engine Performance Measurement</td>
<td>4</td>
</tr>
<tr>
<td>IET 315, Vehicle Electric Systems</td>
<td>4</td>
</tr>
<tr>
<td>IET 411, Mechanical Power Transmission</td>
<td>4</td>
</tr>
</tbody>
</table>

Group VII, Occupational Cluster

1-15 credit hours. This cluster would allow transfer students from a community college to obtain credit for technical work taken at that institution in which we do not have similar programs here on campus.

Total: 66-69

Industrial Education Major
Advisor: Scott Calahan

This major satisfies the endorsement for Technology Education. Qualifies for teaching industrial technology education at the junior or senior high level. Students selecting this major must have a basic background equivalent to one year of high school wood, metals, and drafting and high school mathematics through trigonometry. Admission to this program requires that students must have completed
SAFETY AND HEALTH MANAGEMENT PROGRAMS

Faculty
Dave Borkowski, Safety and Health Management Program
Jeanette Jacobson, Program Coordinator, CWU-Lynnwood
Scott Calahan, Traffic Safety Education (Summer Only)

Program Description:
Students desiring to major in the Safety and Health Management program will be ultimately prepared to obtain employment in a diverse range of occupations such as Occupational Safety Management, Industrial Hygiene, Environmental Management, Emergency Response and preparation, governmental agencies, private industry, and other aligned specializations. The curriculum incorporates a wide range of subjects important to the successful performance of duties typically expected of professionals employed in this field, and will provide the student with an array of skills and knowledge to offer future employers. The program has a history of high employment rates, competitive starting salaries and presents significant opportunity for career advancement.

The Traffic Safety Education Minor is attached to the Safety and Health Management program and is geared at students seeking endorsement for teaching traffic safety education in public schools.

Bachelor of Science
Safety and Health Management Program (SHM)
Advisors: Dave Bokowski
Jeanette Jacobson, CWU-Lynnwood

SHM Required Core Courses Credits
PSY 456, Industrial and Organizational Psychology 4
SHM 386, Occupational Safety and Health 3
SHM 387, Accident Investigation 3
SHM 388, System Safety 3
SHM 389, Industrial Fire Protection and Prevention 3
SHM 444, Fundamentals of Hazardous Materials 4
SHM 483, Ergonomics 4
SHM 484, Environmental Management 4
SHM 485, Safety Management 4
SHM 486, Industrial Operations Safety 3
SHM 487, Fundamentals of

Industrial Hygiene I 4
SHM 488, Fundamentals of Industrial Hygiene II 4
SHM 499, Seminar 1

Total Core 44

Construction Safety Specialization
Advisor: Dave Borkowski

Required Courses Credits
Core Courses 44
IT 101, Computer Applications 3
ADMG 201, Introduction to Business 3
ADMG 385, Business Communications and Report Writing 5
BUS 241, Legal Environment of Business 5
CHEM 112, Introduction to Organic Chemistry 4
CHEM 112LAB, Introduction to Organic Chemistry Lab 1
COM 345, Business and Professional Speaking 4
CMGT 265, Blueprint Reading and Construction Graphics 4
CMGT 343, 343L Construction Estimating I/Lab 3.1
CMGT 346, Construction Methods and Materials 4
CMGT 444, Codes, Contracts and Specifications 4
EET 221, Basic Electricity (3) and EET 221LAB, Basic Electricity Lab (1) OR PHYS 111, Introductory Physics (4) AND PHYS 111LAB, Intro Physics Lab (1) 4.5
IET 380, Quality Control (5) OR IET 301, Engineering Project Cost Analysis (4) 4.5
IET 430, Methods of Teaching Industrial Education 3
MATH 153, Pre-Calculus Mathematics I 5
Electives 3-5

Total Credits 104-105

Risk Management Specialization

Required Courses
Core Courses 44
IT 101, Computer Applications 3
ADMG 201, Introduction to Business 3
ADMG 385, Business Communications and Report Writing 5
BUS 241, Legal Environment of Business 5
CHEM 112, Introduction to Organic Chemistry 4
CHEM 112LAB, Introduction to Organic Chemistry Lab 1
COM 345, Business and Professional Speaking 4
IET 430, Methods of Teaching Industrial Education 3
SAFETY AND HEALTH MANAGEMENT PROGRAMS

Admission Requirements: Prior to be admitted the student entering the Bachelor of Applied Science Safety and Health Management program will have:
- an appropriate and approved associate degree as issued by a Washington State Community College;
- taken at least 20 credits of general education basic skills courses
- completed prerequisites for the program;
- taken course equivalencies to IT 101 and BUS 221;
- completed 2000 hours of recent, documented work experience in an industrial technology related job and approved by the department chair.

Prerequisite Courses
CHEM 111, Introduction to Chemistry (4)
CHEM 111LAB, Introduction to Chemistry Lab (1)

Required Courses Credits
IT 101, Computer Applications ............... 3
BUS 221, Introduction to Business Statistics ........................................ 5
ADMG 385, Business Communications and Report Writing ............. 5
IET 430, Methods of Teaching Industrial Education .......................... 3
MGT 480, Organizational Behavior ............ 5
SHM 383, Transportation Safety ............. 3
COM 345, Business and Professional Speaking ......................... 4
IET 380, Quality Control .......................... 5
IET 389, Technical Presentations (3) OR SHM 490, Cooperative Education (3) ......... 3
IET 430, Methods of Teaching Industrial Education .......................... 3
MGT 481, Organizational Behavior ............ 5
SHM 383, Transportation Safety ............. 3

Total 89-91

Bachelor of Applied Science
Safety and Health Management Major
Advisor: Jeannette Jacobson, CWU-Lynnwood

The Bachelor of Applies Science in Safety and Health Management allows persons who have worked in industry for a period of time to enhance their career potential by utilizing their community college educational and on the job experience to earn a baccalaureate degree after taking upper division course work. The goal of the program is to prepare and enable students to fill professional level positions as leaders and managers within the broad area of Industrial Safety and Health.

Collaborative Certificate Program Industrial Safety and Health
In cooperation with the Central Washington University Industrial and Engineering Technology department and the Office of Continuing Education the following series of courses are offered leading to a certificate in Industrial Safety and Health.

The certificate in Industrial Safety and Health is designed primarily for nonmatriculating students who are currently working in safety and health in business or industry and who may or may not have a four-year degree.

Required Courses Credits
SHM 386, Occupational Safety and Health. 3
SHM 387, Accident Investigation ............... 3
SHM 388, System Safety .......................... 3
SHM 389, Industrial Fire Protection and Prevention ......................... 3
SHM 444, Fundamentals of Hazardous Materials ........................... 4
SHM 485, Safety Management ..................... 4
SHM 486, Industrial Operations Safety (3) OR SHM 487, Fundamentals of Industrial Hygiene I (4) OR SHM 484, Environmental Management (4) ......................... 3-4

Total Credits 23-24

Safety and Health Management Minor

Required Courses Credits
PSY 456, Industrial and Organizational Psychology .......................... 4
SHM 386, Occupational Safety and Health 3
SHM 387, Accident Investigation ............... 3
SHM 388, System Safety ......................... 3
SHM 444, Fundamentals of Hazardous Materials ........................... 4
SHM 485, Safety Management ..................... 4
SHM 483, Ergonomics (4) OR SHM 486, Industrial Operations Safety (3) OR SHM 487, Fundamentals of Industrial Hygiene I (4) ......................... 3-4
SHM 499, Seminar ................................. 1

Total 25-26

Office of Continuing Education the following series of courses are offered leading to a certificate in Industrial Safety and Health.

Certificate in Industrial Safety and

The program is to prepare and enable students who are currently working in safety and health in business or industry and who may or may not have a four-year degree.

Required Courses Credits
SHM 386, Occupational Safety and Health. 3
SHM 387, Accident Investigation ............... 3
SHM 388, System Safety .......................... 3
SHM 389, Industrial Fire Protection and Prevention ......................... 3
SHM 444, Fundamentals of Hazardous Materials ........................... 4
SHM 485, Safety Management ..................... 4
SHM 486, Industrial Operations Safety (3) OR SHM 487, Fundamentals of Industrial Hygiene I (4) ......................... 3-4
SHM 499, Seminar ................................. 1

Total 25-26

Safety and Health Management Courses

SHM 383. Transportation Safety (3). SED 180 recommended prior to enrollment. Transportation systems loss control management. Formerly LCM 383; students may not receive credit for both.

SHM 386. Occupational Safety and Health (3). Occupational safety and health legislation, hazard control management for school and industry personnel. Formerly LCM 386; students may not receive credit for both.

SHM 387. Accident Investigation (3). Prerequisite, SHM 386. Application of the accident investigation process to safety and health management. Formerly LCM 387; students may not receive credit for both.

Program Industrial Safety and Health
In cooperation with the Central Washington University Industrial and Engineering Technology department and the Office of Continuing Education the following series of courses are offered leading to a certificate in Industrial Safety and Health.

The certificate in Industrial Safety and

The certificate in Industrial Safety and Health is designed primarily for nonmatriculating students who are currently working in safety and health in business or industry and who may or may not have a four-year degree.

Required Courses Credits
SHM 386, Occupational Safety and Health. 3
SHM 387, Accident Investigation ............... 3
SHM 388, System Safety .......................... 3
SHM 389, Industrial Fire Protection and Prevention ......................... 3
SHM 444, Fundamentals of Hazardous Materials ........................... 4
SHM 485, Safety Management ..................... 4
SHM 486, Industrial Operations Safety (3) OR SHM 487, Fundamentals of Industrial Hygiene I (4) ......................... 3-4
SHM 499, Seminar ................................. 1

Total 25-26

Safety and Health Management Courses

SHM 383. Transportation Safety (3). SED 180 recommended prior to enrollment. Transportation systems loss control management. Formerly LCM 383; students may not receive credit for both.

SHM 386. Occupational Safety and Health (3). Occupational safety and health legislation, hazard control management for school and industry personnel. Formerly LCM 386; students may not receive credit for both.

SHM 387. Accident Investigation (3). Prerequisite, SHM 386. Application of the accident investigation process to safety and health management. Formerly LCM 387; students may not receive credit for both.
SHM 388. System Safety (3). SHM 386 recommended prior to enrollment. Systems concepts applied to the management of safety and health programs. Formerly LCM 388; students may not receive credit for both.


SHM 444. Fundamentals of Hazardous Materials (4). Prerequisite, CHEM 111 or CHEM 112 or by instructor permission. An examination into issues concerning the use of hazardous materials in industry. Chemical and physical properties, including issues related to its transportation.

SHM 483. Ergonomics (4). Prerequisite, SHM 386. Study of human characteristics for the appropriate design of the work environment to promote safety, well being and work efficiency.

SHM 484. Environmental Management (4). Prerequisite, SHM 386. Overview of present and future environmental safety and health issues that impact business and industry.

SHM 485. Safety Management (4). Prerequisite, SHM 386 or permission of instructor. The role of the safety and health professional in the management process. Formerly LCM 485; students may not receive credit for both.

SHM 486. Industrial Operations Safety (3). Prerequisite, SHM 386. Concepts of industrial loss control and an overview of industrial processes. Formerly LCM 486; students may not receive credit for both.

SHM 487. Fundamentals of Industrial Hygiene I (4). Prerequisite, SHM 386. An overview of the reasons for, benefits of, and activities related to occupational environment control programming and industrial hygiene practice. Formerly LCM 487; students may not receive credit for both.

SHM 488. Fundamentals of Industrial Hygiene II (4). Prerequisite, SHM 487. Measurement procedures to monitor and audit organizational safety and health programs. Procedures to determine incident rates and trends as a basis to determine risks and implementing loss control measures. Inspection and instrumentation practice. Formerly LCM 488; students may not receive credit for both.

SHM 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

SHM 491. Workshop (1-6).

SHM 496. Individual Study (1-6). Prerequisite, permission of instructor.

SHM 498. Special Topics (1-6).

SHM 499. Seminar (1-5). May be repeated.

Traffic Safety Education Minor
Advisor: Scott Calahan (Summer Only)

Students desiring endorsement for teaching traffic safety education in the public schools are required to take SED 382, 481, 482 and one other course listed in the minor as approved by the Safety Education Advisor. For the most comprehensive background with the best opportunity for employment students should plan to take all courses listed in the safety education teaching minor.

Required Courses Credits
SED 180, Principles of Accident Prevention 3
SED 382, Driver Task Analysis ............. 3
SHM 383, Transportation Safety ............ 3
SED 480, Teaching Safety Education: K-12 3
SED 481, Teaching Traffic Safety Education: Classroom and Simulation ............ 3
SED 482, Teaching Traffic Safety Education: In Car ....................... 3
SED 484, Safety Program Supervision ....... 3

Total 21

*Required for state endorsement, plus one additional course approved by the Safety Education advisor for a total of 12 credits (SED 180 or SED 484).

Safety Education Courses

SED 180. Principles of Accident Prevention (3). The underlying principles and theories of accident causation and prevention. Impact of accident on society today, psychological factors related to accidents, legal requirements, accident prevention in business and industry, the schools and community.

SED 298. Special Topics (1-6).

SED 382. Driver Task Analysis (3). Prerequisite, SED 180. Introduction to traffic safety education, the highway transportation system, driver task analysis, classroom instruction techniques.

SED 398. Special Topics (1-6).

SED 480. Teaching Safety Education: K-12 (3). Concepts, methods, techniques and instructional materials of safety education integrated into the school curriculum, kindergarten through high school, including student and teacher rights and responsibilities.

SED 481. Teaching Traffic Safety Education: Classroom and Simulation Instruction (3). Prerequisite, SED 382 or permission of instructor. Methods, materials and techniques for teaching classroom and simulation. Experience in teaching beginning drivers.

SED 482. Teaching Traffic Safety Education: In Car (3). Prerequisite, SED 382 or permission of instructor. Methods, materials and techniques for teaching in dual-control vehicles. Experience teaching beginning drivers.

SED 484. Safety Program Supervision (3). Prerequisite, SED 382 or permission of instructor. Development and management of a total school safety program.

SED 491. Workshop (1-6).

SED 496. Individual Study (1-6). Prerequisite, permission of instructor.

SED 498. Special Topics (1-6).

SED 499. Seminar (1-5). May be repeated.

INFORMATION TECHNOLOGY AND ADMINISTRATIVE MANAGEMENT

Faculty
Chair: Lori Braunstein
Shaw-Smyser 238
www.cwu.edu/~ITAM

Professors
Catherine Bertelson, Information Technology, Administrative Management
V. Wayne Klemm, Information Technology, Administrative Management, Business Education
Robert Perkins, Information Technology, Administrative Management
Connie M. Roberts, Information Technology, Administrative Management

Associate Professors:
Kimberlee Bartel, Information Technology, Administrative Management
Lori Braunstein, Information Technology, Administrative Management
Mary Lochrie, Administrative Management
Robert Lupton, Retail Management and Technology
Assistant Professor:
William Chandler, Administrative Management, Retail Management and Technology, Fashion Merchandising
David Rawlinson, Information Technology

Lecturers:
Yvonne Alder, Information Technology, Administrative Management
Irène Cheyne, Administrative Management
Mary Minor, Information Technology
Angela Unruh, Information Technology

General Information
The Information Technology and Administrative Management program leads to a Bachelor of Science degree with specializations in Information Technology, Administrative Management, Retail Management and Technology, Network Administration, Web Administration, or Database Administration. The Fashion Merchandising program leads to a Bachelor of Science degree.

Admission Policy for Information Technology and Administrative Management
1. Students must have a cumulative GPA of at least 2.30 for admission to a major.
2. Students must complete the Application for Major form and submit it to the department secretary.
3. Students will be evaluated for their major requirements under the Official Electronic Catalog (OEC) at the time they declare. Requirements for the Basic and Breadth courses are evaluated using OEC at the time of acceptance to CWU.

Students enrolled in any department major must consult with a faculty advisor each quarter. Students desiring vocational (teaching) certification should see their major advisor about additional requirements.

Bachelor of Science
Information Technology and Administrative Management

Major
The program is designed to prepare students for information technology, administrative management, or retail management careers. Students completing this major will take the core courses (50-53 credits) and select one of the three areas of specialization: Information Technology, Administrative Management, and Retail Management and Technology. Several of the elective courses have prerequisites noted in the course description. IT 101, Computer Applications or equivalent, or demonstration of computer competence is a prerequisite to this major. Students must complete at least 60 credits of upper division courses.

Information Technology and Administrative Management

Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 301, Financial Accounting Analysis</td>
<td>5</td>
</tr>
<tr>
<td>ADMG 201, Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 271, Business Math Applications</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 310, Business Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 371, Administrative Management</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 385, Business Communications and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>ECON 101, Economic Issues or ECON 201/202, Principles of Economics Micro/Macro</td>
<td>5</td>
</tr>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 258, Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 288, Business Presentation Applications</td>
<td>2</td>
</tr>
<tr>
<td>ADMG/IT/ME 490, Internship</td>
<td>9-12</td>
</tr>
</tbody>
</table>

Core Total 51-54

Administrative Management Specialization

Administrative Management students become qualified administrative professionals prepared to pursue careers that apply a blend of management, administrative, and information technology skills in contemporary administrative environments. These qualifications are complemented by job-ready business communications and human relations skills. Graduates in the Administrative Management specialization secure careers as entry- and mid-level administrative managers, computer specialists, account specialists, legal assistants, administrative assistants, account specialists, and customer service consultants.

Information Technology and Administrative Management Core | 51-54

Administrative Management Specialization

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 355, Workplace Administration</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 372, Leadership and Supervision</td>
<td>4</td>
</tr>
<tr>
<td>IT/ADMG 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 485, Managerial Communications</td>
<td>3</td>
</tr>
<tr>
<td>HRM 381, Management of Human Resources</td>
<td>5</td>
</tr>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>12-15</td>
</tr>
</tbody>
</table>

Total 90

Information Technology Specialization

Information Technology students become qualified information technology professionals prepared to pursue careers that apply information systems, web design and publishing, network administration, spreadsheet, and database management, multimedia presentations, and desktop publishing. These qualifications are complemented by job-ready business communications and human relations skills. Graduates in the Information Technology specialization secure careers in information technology such as Web page design and administration, computer sales and support, network administration, and computer training and consulting.

Information Technology and Administrative Management Core | 51-44

IT Specialization

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>IT 361, Hardware Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 452, Telecommunications and Micro-Computer Networks</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>24-27</td>
</tr>
</tbody>
</table>

Select a minimum of one course from this category: 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 462, Administrative Systems Analysis and Design</td>
<td>4</td>
</tr>
</tbody>
</table>

Select a minimum of one course from this category: 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 422, Web Site Construction</td>
<td>4</td>
</tr>
<tr>
<td>IT 426, Application of Web Languages</td>
<td>4</td>
</tr>
<tr>
<td>IT 458, Management of Computer Networks</td>
<td>4</td>
</tr>
</tbody>
</table>

Select a minimum of one course from this category: 3-5

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 455, Accounting Information Systems</td>
<td>5</td>
</tr>
<tr>
<td>CS 167, Visual Basic Beginning</td>
<td>4</td>
</tr>
<tr>
<td>CS 367, Visual Basic Advanced</td>
<td>4</td>
</tr>
<tr>
<td>CS 420, Database Systems</td>
<td>5</td>
</tr>
<tr>
<td>IT 359, Advanced Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 468, Projects in Database</td>
<td>4</td>
</tr>
<tr>
<td>IT 470, Database and the Web</td>
<td>4</td>
</tr>
<tr>
<td>MIS 386, Management Information Systems</td>
<td>5</td>
</tr>
<tr>
<td>MIS 420, Database Systems in Business</td>
<td>4</td>
</tr>
<tr>
<td>SOC 464, Applied Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 90

Retail Management and Technology Specialization

Retail Management and Technology students become qualified business professionals prepared to pursue careers in retail environments that apply e-commerce,
management, selling, advertising, purchasing, and information technology. These qualifications are complemented by job-ready business communications and human relations skills. Graduates in the Retail Management and Technology specialization secure careers such as store managers, e-retailing, sales associates, and buyers.

Information Technology and Administrative Management Core: 51-54
Retail Management and Technology
Specialization Requirements: 28
ME 330, Principles of Retailing: 4
ME 340, Principles of Selling: 4
ME 350, Principles of Advertising: 4
ME 467, Retail Management: 4
ME 470, Critical Issues in Retailing: 4
ME 486, Retailing and E-commerce: 4
ME/FCSA 489, Retail Buying: 4
Department Approved Electives: 8-11

BUS 241, Legal Environment of Business (5)
HRM 381, Management of Human Resources (5)
IT 422, Web Site Construction (4)
IT 470, Database and the Web (4)
ME 410, Retail Information Technology (4)
ME 455, Research in Advertising and Retailing (4)
ME 461, Advertising & Sales Promotion (5)
ME/FCSA 485, International Merchandising (4)
ME 498, International Comparative Retail Management Study Abroad (10)
MGT 380, Organizational Management (5)
MKT 361, Channels of Distribution Management (5)
MKT 367, Consumer Behavior (5)
MKT 467, International Marketing (5)

Total: 90

Networking Administration Specialization

Network Administration students become qualified business professionals prepared to pursue careers that apply a wide variety of network administration skills. These qualifications are complemented by job-ready business communications and human relations skills. Graduates in the Network Administration specialization secure positions as network administrators, network analysts, network managers, data communications analysts, network operations analysts, network specialists, network technicians, PC support specialists, network engineers, and user support specialists.

Information Technology and Administrative Management Core: 51-54
Network Administrative Courses: 36-39
ADMG/IT 374, Project Management: 4
IT 228, Introduction to Information Technology: 4
IT 361, Hardware Management: 4
IT 452, Telecom and Microcomputer Networks: 4
IT 457, Network Security: 4
IT 458, Management of Computer Networks: 4
IT 459, Workstation Administration: 4
IT 462, Administrative Systems Analysis and Design: 4
Department Approved Electives: 4-7

Total: 90

Web Administration Specialization

Web administration students become qualified business professionals prepared to pursue careers that apply a wide variety of web administration skills. These qualifications are complemented by job-ready business communications and human relations skills. Graduates in the Web Administration specialization secure positions as Web administrators, Web designers, Web page developers, Web producers, Web site developers, and Web masters. A minor and certification in this area is available.

Information Technology and Administrative Management Core: 51-54
Web Administration Courses: 36
IT 228, Introduction to Information Technology: 4
IT 361, Hardware Management: 4
ADMG/IT 374, Project Management: 4
IT 422, Web Site Construction: 4
IT 424, Managing a Web Site Team: 4
IT 426, Web Languages: 4
IT 428, Web Applications: 4
IT 452, Telecom & Microcomputer Networks: 4
IT 470, Database and the Web: 4
Department Approved Electives: 0-3

Total: 90

Database Administration Specialization

Database Administration students become qualified business professionals prepared to pursue careers that apply to a wide variety of database administration skills. These qualifications are complemented by job-ready business communications and human relation skills. Graduates in the Database Administration specialization secure positions as data administrators, data analysts, data modelers, database developers, and database managers.

Information Technology and Administrative Management Core: 51-54
Database Specialization: 27
IT 228, Introduction to Information Technology: 4
ADMG/IT 374, Project Management: 4
IT 452, Telecom and Microcomputer Networks: 4
IT 462, Administrative Systems Analysis and Design: 4
IT 468, Projects in Database: 4
IT 470, Database and the Web: 4
ADMG 485, Managerial Communications: 3
Department Approved Electives: 1-12

Total: 90

Administrative Management Minor

The minor in Administrative Management provides recognition for students who complete the specified minor courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position. Several of the electives have prerequisites noted in the course description. Administrative Management minors are recommended to take ECON 101, 201 or 202. IT 101, Computer Applications (or equivalent) is a prerequisite to this minor. A student fulfilling the requirements for an ITAM program degree specialization cannot earn a minor within the same program. However, a student may earn a minor in any other area or departmental certificate.

Required Courses: Credits
ACCT 301, Financial Accounting Analysis: 5
ADMG 201, Introduction to Business: 3
ADMG 355, Workplace Administration: 4
ADMG 371, Administrative Management: 4
ADMG 385, Business Communications and Report Writing: 5
IT 204, Word Processing Applications: 3
IT 258, Spreadsheet Applications: 3
IT 268, Database Applications: 3
Department Approved Electives: 3

Total: 33

Personal Computer Applications Minor

The Personal Computer Applications minor provides recognition for students who complete the specified minor courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the minor...
may have prerequisites. IT 101, Computer
Applications (or equivalent) is a prerequisite
to this minor. A student fulfilling the
requirements for an ITAM program degree
specialization cannot earn a minor within the
same program. However, a student may
earn a minor in any other area or depart-
mental certificate.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 258, Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 288, Business Presentation Applications 2</td>
<td>2</td>
</tr>
<tr>
<td>IT 359, Advanced Spreadsheet Applications3</td>
<td></td>
</tr>
<tr>
<td>IT 389, Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total** 35

**Retail Management and Technology Minor**

The minor in Retail Management and Technology
provides recognition for students who complete the specified minor
courses. Such recognition will benefit students in gaining professional
employment or advancing in their current professional position.

The Retail Management and Technology Minor develops competence in retail
planning, implementation, and management. IT 101, Computer
Applications, (or equivalent) is a prerequisite
to the minor. Required and elective courses in the minor may have prerequisites.
A student fulfilling the requirements for an ITAM program degree
specialization cannot earn a minor within the
same program. However, a student may earn a minor in any other area or departmental certificate.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 201, Introduction to Business IT</td>
<td>3</td>
</tr>
<tr>
<td>ME 330, Principles of Retailing</td>
<td>4</td>
</tr>
<tr>
<td>ME 340, Principles of Selling</td>
<td>4</td>
</tr>
<tr>
<td>ME 467, Retailing Management</td>
<td>4</td>
</tr>
<tr>
<td>ME 468, Retailing and E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>11-13</td>
</tr>
</tbody>
</table>

**Total** 30-32

**Network Administration Minor**

The minor in Network Administration provides recognition for students who complete the specified minor courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 385, Business Communications and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>IT 204, Work Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 422, Web Site Construction</td>
<td>4</td>
</tr>
<tr>
<td>IT 424, Managing a Web Site Team</td>
<td>4</td>
</tr>
<tr>
<td>IT 426, Application of Web Languages</td>
<td>4</td>
</tr>
<tr>
<td>IT 428, Web Applications</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total** 36

**Database Administration Minor**

The minor in Database Administration provides recognition for students who complete the specified minor courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>ADMG/IT 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 468, Projects in Database</td>
<td>4</td>
</tr>
<tr>
<td>IT 470, Database and the Web</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>10</td>
</tr>
</tbody>
</table>

**Total** 34

**Advertising Minor**

The minor in Advertising provides recognition for students who complete the specified minor courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

The advertising minor develops competence in advertising planning, production, and distribution. It complements a range of majors and is jointly offered by the Departments of Communication and Information Technology and Administrative Management. IT 101, Computer Applications, CS 101, or demonstration of computer competence is a prerequisite to the minor.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 270, Introduction to Public Relations</td>
<td>4</td>
</tr>
<tr>
<td>COM 300, Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>COM 305, Advertising Copywriting and Placement</td>
<td>4</td>
</tr>
<tr>
<td>ME 340, Principles of Selling</td>
<td>4</td>
</tr>
<tr>
<td>ME 350, Principles of Advertising</td>
<td>4</td>
</tr>
<tr>
<td>ME 461, Advertising and Sales Promotion</td>
<td>5</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>COM 306, Introduction to Online Media</td>
<td></td>
</tr>
<tr>
<td>COM 309, Broadcast Advertising and Scriptwriting</td>
<td></td>
</tr>
<tr>
<td>COM 341, Television Field Production</td>
<td></td>
</tr>
<tr>
<td>COM 348, Publication Design</td>
<td></td>
</tr>
<tr>
<td>IT 389, Desktop Publishing</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>ME 455, Consumer Research</td>
<td>5</td>
</tr>
<tr>
<td>COM 440, Corporate Television</td>
<td></td>
</tr>
<tr>
<td>COM 475, P.R. &amp; Advertising Agency Management</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 32-34
Certificate in Administrative Management – Type B (ADMG)  
By Permission Only  
The Certificate in Administrative Management provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the certificate may have prerequisites. It is recommended that students take ECON 101, ECON 201, ECON 202, IT 101, Computer Applications (or equivalent) is a prerequisite to this certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 301, Financial Accounting</td>
<td>5</td>
</tr>
<tr>
<td>ADMG 201, Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ADMG 355, Workplace Administration</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 371, Administrative Management</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 385, Business Communication and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 258, Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 33

Certificate in Personal Computer Applications– Type B (PCA)  
By Permission Only  
The Certificate in Personal Computer Applications provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the certificate may have prerequisites. IT 101, Computer Applications (or equivalent) is a prerequisite to this certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td></td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 258, Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 288, Business Presentation Applications</td>
<td>2</td>
</tr>
<tr>
<td>IT 359, Advanced Spreadsheet Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 389, Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

Total 35

Certificate in Retail Management and Technology–Type B (RMT)  
By Permission Only  
The Certificate in Retail Management and Technology provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

The Retail Management and Technology Certificate develops competence in retail planning, implementation, and management. Required and elective courses in the certificate may have prerequisites. IT 101, Computer Applications (or equivalent) is a prerequisite to the certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 201, Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ME 330, Principles of Retailing</td>
<td>4</td>
</tr>
<tr>
<td>ME 340, Principles of Selling</td>
<td>4</td>
</tr>
<tr>
<td>ME 467, Retail Management</td>
<td>4</td>
</tr>
<tr>
<td>ME 486, Retailing and E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>11-13</td>
</tr>
</tbody>
</table>

Total 30-32

Certificate in Networking Administration – Type B (NET)  
By Permission Only  
The Certificate in Network Administration provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the certificate may have prerequisites. IT 101, Computer Applications (or equivalent) is a prerequisite to this certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 371, Administrative Management</td>
<td>4</td>
</tr>
<tr>
<td>ADMG 385, Business Communications and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>IT 361, Hardware Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 452, Telecom. and Microcomputer Networks</td>
<td>4</td>
</tr>
<tr>
<td>IT 457, Network Security</td>
<td>4</td>
</tr>
<tr>
<td>IT 458, Management of Computer Networks OR IT 459, Workstation Administration</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 32

Certificate in Web Administration – Type B (WEB)  
By Permission Only  
The Certificate in Web Administration provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the certificate may have prerequisites. IT 101, Computer Applications (or equivalent) is a prerequisite to this certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 385, Business Communications and Report Writing</td>
<td>5</td>
</tr>
<tr>
<td>IT 204, Word Processing Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 422, Web Site Construction</td>
<td>4</td>
</tr>
<tr>
<td>IT 424, Managing a Web Site Team</td>
<td>4</td>
</tr>
<tr>
<td>IT 426, Application of Web languages</td>
<td>4</td>
</tr>
<tr>
<td>IT 428, Web Applications</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Total 36

Certificate in Database Administration – Type B (DATA)  
By Permission Only  
The Certificate in Database Administration provides recognition for students who complete the specified certificate courses. Such recognition will benefit students in gaining professional employment or advancing in their current professional position.

Required and elective courses in the certificate may have prerequisites. IT 101, Computer Applications (or equivalent) is a prerequisite to this certificate.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMG 374, Project Management</td>
<td>4</td>
</tr>
<tr>
<td>IT 228, Introduction to Information Technology</td>
<td>4</td>
</tr>
<tr>
<td>IT 248, Web Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>IT 268, Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>IT 468, Projects in Database</td>
<td>4</td>
</tr>
<tr>
<td>IT 470, Database and the Web</td>
<td>4</td>
</tr>
<tr>
<td>Department Approved Electives</td>
<td>10</td>
</tr>
</tbody>
</table>

Total 34
Administrative Management

ADMG 146. Basic Accounting (5). For office workers who are required to keep a simple set of books and complete various government reports. May not be taken for college credit if any other college accounting course or courses have been completed. May be audited.

ADMG 201. Introduction to Business (3). Functions, practices, and organization of the business enterprise.


ADMG 296. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

ADMG 298. Special Topics (1-6).

ADMG 299. Seminar (1-5). May be repeated.

ADMG 301. Business Professional Development (3). Prerequisite, junior standing. Develops strategies to enhance career success through professional image, attitudes, and ethics.

ADMG 355. Workplace Administration (4). Knowledge and skills necessary for working efficiently and effectively in today’s workplace. Course topics include basic business communications, meeting and conference management, office equipment, office health and safety, records management, and scheduling. Formerly ADMG 255. Students may not receive credit for both.


ADMG 372. Leadership and Supervision (4). Supervision and leadership techniques to improve productivity in administrative settings.

ADMG 374. Project Management (4). Development of project management skills and their application in workplace environments. ADMG 374 and IT 374 are equivalent courses. Students may not receive credit for both.

ADMG 375. Personal Finance via the Internet (4). Prerequisite, access to course Web site, and e-mail. Buymanship, choice making, money management, insurance, investments, shelter, personal legal aspects, and taxes.

ADMG 385. Business Communications and Report Writing (5). Prerequisite, ENG 102 or equivalent and junior standing. Planning and writing skills for business letters, memoranda, employment, and reports.

ADMG 398. Special Topics (1-6).

ADMG 485. Managerial Communications (3). Prerequisite, ADMG 385. Advanced written oral, and non-verbal business communications including proposals, crisis management, international communication, international/domestic etiquette, meeting management, conflict resolution, negotiation, and collaboration.

ADMG 490. Cooperative Education (5-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U. Summers only.

ADMG 491. Workshop (1-6).

ADMG 493A. Undergraduate Research Practicum (1-3). Conduct research under direct supervision of a professor with specific learning agreement required. Department requirements must be met. Grade will be S/U. ADMG/ME/IT/BSED 493A are equivalent courses. May be repeated for a total of 3 credits.

ADMG 493B. Undergraduate Assistant Practicum (1-3). Assist in monitoring, supervising, supporting, and tutoring instruction under direct supervision of a professor with specific learning agreements required. Department requirements must be met. Grade will be S/U. ADMG/ME/IT/BSED 493B are equivalent courses. May be repeated for a total of 3 credits.

ADMG 496. Individual Study (1-6). Prerequisite, permission of instructor. May be repeated.

ADMG 498. Special Topics (1-6).

ADMG 499. Seminar (1-5).

Business Education Courses

BSED 101. Computer Keyboarding (2). Introduction to touch keyboarding and word processing for beginners. May not be taken for credit by students with one semester or more of high school keyboarding (typing), but can be audited. Formerly BSED 151. Students may not receive credit for both.

BSED 102. Computer Keyboarding Skill Building (2). Prerequisite, BSED 101 or equivalent touch keyboarding skill. Development of touch keyboarding stroking speed and accuracy skill. May be repeated for a total of four credits. Grade will be S or U. Formerly BSED 152. Students may not receive credit for both.

BSED 296. Individual Study (1-6). May be repeated. Prerequisite, permission of instructor.

BSED 298. Special Topics (1-6).

BSED 299. Seminar (1-5). May be repeated.

BSED 316. Education Technology (3). Prerequisites, EDF 303, or EDF 303A, PSY 314, and full admission to the Teacher Preparation Program. CS 101 or IT 101 recommended prior to endorsement. Students will explore a variety of concepts and resources related to the appropriate and effective integration of technology/media in school settings. BSED 316 and EDCS 316 are equivalent courses. Students may not receive credit for both.

BSED 392. Microcomputer Lab Practicum (2). Prerequisite, IT 101 or equivalent or demonstration of computer competence and permission of Department Chair. Assist students during microcomputer classes and open labs. Troubleshooting software and equipment problems. Develop basic Windows competencies. May be repeated for a total of four credits. Grade will be S or U.

BSED 398. Special Topics (1-6).

BSED 429. Teaching Keyboarding in the Elementary Classroom (1). Prerequisite, basic competency in keyboarding or typewriting. Methods and materials for teaching keyboarding on microcomputers.

BSED 432. Methods of Teaching Business and Marketing Education (5). Prerequisite, a majority of the business or marketing major completed and EDCS 311. BSED 432 and ME 432 are equivalent courses. Students may not receive credit for both.

BSED 445. Techniques of Cooperative Education (3). Philosophy, place, methods and techniques of coordinating work experience. BSED 445 and ME 445 are equivalent courses. Students may not receive credit for both.

BSED 458. Management of Computer Networks (4). Prerequisite: basic level of understanding of computer networks. Develop and improve network administration and management skills within the Server environment. BSED 458 and IT 458 are equivalent courses. Students may not receive credit for both.

BSED 488. Multimedia Presentations (3). Prerequisite, IT 101 or equivalent or demonstration of computer competence. Plan, design, and produce clear, complete, accurate, and attractive linear and non-linear multimedia presentations using common multimedia hardware and software. BSED 488 and IT 488 are equivalent courses. Students may not receive credit for both.

BSED 490. Cooperative Education (5-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating
Information Technology and Administrative Management

Employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U. Summers only.

BSED 491. Workshop (1-6).

BSED 492. Practicum (5-15). Prerequisite, permission of Department Chair. Grading will be S or U. BSED 492 and ME 492 are equivalent courses. Students may not receive credit for both.

BSED 493A. Undergraduate Research Practicum (1-3). Conduct research under direct supervision of a professor with specific learning agreement required. Department requirements must be met. Grade will be S/U. BSED/ME/IT/ADMG 493A are equivalent courses. May be repeated for a total of 3 credits.

BSED 493B. Undergraduate Assistant Practicum (1-3). Assist in monitoring, supervising, supporting, and tutoring instruction under direct supervision of a professor with specific learning agreements required. Department requirements must be met. Grade will be S/U. BSED/ME/IT/ADMG 493B are equivalent courses. May be repeated for a total of 3 credits.

BSED 496. Individual Study (1-6). May be repeated. Prerequisite, permission of instructor.

BSED 498. Special Topics (1-6).

BSED 499. Seminar (1-5). May be repeated.

Information Technology Courses

Formerly ADMG. Students may not receive credit for both.

IT 100. Basic Computer (4). An introductory course for students with limited computer skills that will cover basic topics in word processing, using e-mail and spreadsheet. IT 100 and CS 100 are equivalent courses. Students may not receive credit for both.

IT 101. Computer Applications (3). Basic skills in Windows, word processing, spreadsheets, databases, and presentations. Formerly ADMG 101.

IT 204. Word Processing Applications (3). Prerequisite, touch keyboarding competency of at least 25 words per minute. Developing microcomputer word processing skills for producing business-related letters, tables, and reports. Formerly ADMG 204.

IT 228. Introduction to Information Technology (4). Exploring information technology principles, practices, and applications in contemporary society.

IT 248. Web Fundamentals (2). Prerequisite, IT 101 or equivalent. Development of web pages, electronic mail skills, and Internet skills for business, education and training environments.

IT 258. Spreadsheet Applications (3). Prerequisite, IT 101, CS 101, or demonstration of computer competence. Basic spreadsheets for business applications; design of spreadsheets; formulas and functions; formatting, and presentation. Formerly IT and ADMG 358. Students may not receive credit for both.

IT 268. Database Applications (3). Prerequisite, IT 101, CS 101, or demonstration of computer competence. Develop basic database skills in a personal database application for workplace environments. Formerly IT and ADMG 368. Students may not receive credit for both.

IT 288. Business Presentation Applications (2). Prerequisite, IT 101 or equivalent. Develop multimedia graphic presentations for business and workplace environments. Formerly IT and ADMG 388. Students may not receive credit for both.

IT 301. Information Technology Security, Privacy and Ethics (3). Prerequisite, junior standing. Examination of information technology security and privacy issues in the context of law and ethics.

IT 306. Advanced Word Processing Applications (3). Prerequisite, IT 204 or equivalent and touch keyboarding competence of at least 50 words per minute. Microcomputer advanced word processing skills for producing business related documents. Formerly ADMG 306.

IT 359. Advanced Spreadsheet Applications (3). Prerequisite: IT 258. Advanced spreadsheets for business applications; design of multiple sheet workbooks and templates; advanced functions and formulas; enhanced formats; lists and pivot tables; and using “what-if” analysis tools such as Goal Seek and Solver. Formerly ADMG 359.

IT 361. Hardware Management (4). Prerequisite, IT 228. Theory and skill development related to hardware configuration, components, and maintenance.

IT 362. Wireless Communications (4). Prerequisites, IT 101 or CS 101. Identify, describe, install, set up, use, secure, and troubleshoot wireless communications systems.

IT 374. Project Management (4). Development of project management skills and their application in workplace environments. IT 374 and ADMG 374 are equivalent courses. Students may not receive credit for both.

IT 389. Desktop Publishing (3). Prerequisite, IT 101 or equivalent or demonstration of computer competence. Analyzing and designing layout, typography, and graphics to produce newsletters, advertisements, brochures, and flyers. Formerly ADMG 389.

IT 422. Web Site Construction (4). Prerequisite, IT 248. Design and implementation of the information technology infrastructure needed to operate a business Web site.

IT 424. Managing a Web Site Team (4). Prerequisite, IT 422. Web site team management including planning, implementation, operation, quality assurance, and legal issue.

IT 426. Application of Web Languages (4). Prerequisite, IT 422. Web languages for the non-computer science student.

IT 428. Web Applications (4). Prerequisite, IT 422. Web design using Web applications software such as Dreamweaver, Fireworks, and Flash or equivalent; digital hardware, graphic design, and page layout.

IT 452. Telecommunications and Microcomputer Network Applications (4). Prerequisite, IT 228 or permission of instructor. Personal Computer networks communications including Networking Basics; LAN Topologies, LAN Protocols; and Network Operating Systems; and telecommunications, including voice, data, message, and image communications. Formerly ADMG 452.

IT 455. Planning and Implementing Directory Services (4). Prerequisite, IT 458. Students will plan, implement and maintain directory service features in including forests, sites, domains, and organizational units to meet network accessibility, performance and security goals.

IT 456. Managing and Maintaining a Network Environment (4). Prerequisite, IT 458. Course provides students with advanced knowledge and advanced skills that are required to manage accounts and resources, maintain server resources, monitor server performance, and safeguard data in a computer network environment.


IT 458. Management of Computer Networks (4). Prerequisite, basic level of understanding of computer networks. Develop and improve network administration and management skills within the Server environment. IT 458 and BSED 458 are equivalent courses. Students may not receive credit for both.

IT 458. Management of Computer Networks (4). Prerequisite: basic level of understanding of computer networks. Develop and improve network administration and management skills within the Server environment. IT 458 and BSED 458 are equivalent courses. Students may not receive credit for both.

IT 459. Workstation Administration (4).
Prerequisite, IT 228. Implementation, administration, and troubleshooting workstations as a desktop operating system in any network environment.

IT 462. Administrative Systems Analysis and Design (4). Prerequisite IT 361. Analyze office information systems through selected analysis tools and procedures. Students will apply this knowledge by designing improved systems.

IT 468. Projects in Database (4). Prerequisites, IT 268 and IT 462. Advanced techniques in database design, event-driven and object-driven programming, VBA statements and modules, debugging, creating Index files, and security issues.

IT 469. Enterprise Database Systems: SQL (3). Prerequisites, IT 268 and IT 468. Using Oracle Database (an interprise database system), students will learn to write SQL statements and basic database administration and report writing skills.

IT 470. Database and the Web (4). Prerequisites, IT 228 and IT 268. Creating dynamic web pages that interact with a database.

IT 488. Multimedia Presentations (3). Prerequisite, IT 101 or equivalent or demonstration of computer competence. Plan, design, and produce clear, complete, accurate, and attractive linear and non-linear multimedia presentations using common multimedia hardware and software. IT 488 and BSED 488 are equivalent courses. Students may not receive credit for both. Formerly ADMG 488.

IT 489. Web Page Construction (3). Design, development, and publishing Internet Web pages including web page evaluation.

IT 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

IT 491. Workshop (1-6). May be repeated.

IT 493A. Undergraduate Research Practicum (1-3). Conduct research under direct supervision of a professor with specific learning agreement required. Department requirements must be met. Grade will be S/U. IT/ME/ADMG/BSED 493A are equivalent courses. May be repeated for a total of 3 credits.

IT 495B Undergraduate Assistant Practicum (1-3). Assist in monitoring, supervising, supporting, and tutoring instruction under direct supervision of a professor with specific learning agreements required. Department requirements must be met. Grade will be S/U. IT/ME/ADMG/BSED 495B are equivalent courses. May be repeated for a total of 3 credits.

Grade will be S/U. IT/ME/ADMG/BSED 495B are equivalent courses. May be repeated for a total of 3 credits.

IT 496. Individual Study (1-6). Prerequisite, permission of the instructor. May be repeated.

Marketing Education Courses

ME 251. Visual Merchandising (3). Prerequisite FCSH 166, ADMG 201. Organization, planning, preparation, and arrangement of effective visual merchandise sales presentation. One hour lecture and four hours lab per week. ME 251 and FCSA 251 are equivalent courses. Students may not receive credit for both.

ME 296. Individual Study (1-6). May be repeated. Prerequisite, permission of instructor.

ME 301. Principles of Fashion Merchandising (4). The development of the fashion industry; historical, economic and technological influences; apparel manufacturing, product development, fashion styles and markets. Formerly ME/FCSA 180. ME 301 and FCSA 301 are equivalent courses. Students may not receive credit for both.

ME 330. Principles of Retailing (4). An introduction to the field of retailing including retail stores, merchandising, operations, store location and layout, internal organization, buying, personnel management, inventory control, and sales promotion.

ME 340. Principles of Selling (4). The field of selling, its role in the economy, the sales process, types of selling, planning the sale and the sales organization.

ME 350. Principles of Advertising (4). An introduction to the field of advertising and its fit into society including integrated marketing communication, consumer behavior, segmentation and target marketing, application of advertising research, creative and media strategy, copy, layout, production, advertising, agency organization, and international and local advertising.

ME 355. Advertising Media Planning (4). A study of the role of media in marketing related advertising decisions with emphasis on media research, technology, market analysis, market strategy, psychodynamics of media, reach and frequency, budgeting, and buying.

ME 379. Internship Planning (1-5). ME 379 and FCSA 379 are equivalent courses. Formerly ME 399.1. Students may not receive credit for both.

ME 394. Student Leadership Development (1). Students will gain skills in teamwork, promotion, leadership, service, public speaking and compete in marketing related competitive events at the state and international level.

ME 410. Retail Information Technology (4). Prerequisites, ME 330 and senior standing. Use of contemporary technology in collecting, analyzing, and interpreting retail management data and writing and presenting retail management reports.

ME 432. Methods of Teaching Business and Marketing Education (5). Prerequisite, a majority of the business or marketing major completed and EDCS 311. ME 432 and BSED 432 are equivalent courses. Students may not receive credit for both.

ME 445. Techniques of Cooperative Education (3). Philosophy, place, methods, and techniques of coordinating work experience. ME 445 and BSED 445 are equivalent courses. Students may not receive credit for both.

ME 455. Research in Advertising and Retailing (4). Prerequisites, ME 330 or ME 350. Primary and secondary data collection, compilation, analysis, interpretation, and reporting in advertising and retailing.

ME 461. Advertising and Sales Promotion (5). Prerequisite, senior standing, IT 389 and ME 350. This capstone course provides the student with the opportunity to apply all that they have learned in their major and in other fields by the development of a comprehensive advertising campaign. The focus of the course is to apply learned theory-base to practice application.

ME 467. Retail Management (4). Prerequisites, ME 330, Senior standing. Retail store ownership and management, including startup, location, market analysis, customer service, organization, merchandise management, human resource management, sales promotion, and financial planning. Formerly ME 367. Student may not receive credit for both.

ME 479. Fashion Merchandising Seminar (3). Prerequisites, ME 467 and ME 461. Same as FCSA 479. Students may not receive credit for both.

ME 485. International Merchandising (4). Prerequisite, ME 330. Emphasis on international retailing and global trade. Focus on cross-cultural differences, work environments, policies and regulations. ME 485 and FCSA 485 are equivalent courses. Students may not receive credit for both.

ME 486. Retailing and Electronic Commerce (4). Prerequisite/corequisite, ME 330 and access to the Internet. Examines the progress and potential of the
WWF for the marketing, selling, promoting, and distributing of retail goods and services.

**ME 489. Retail Buying (4).** Prerequisites ME 330. Principles of buying and selling merchandise; analysis of consumer demand, stock inventories and open-to-buy. ME 489 and FCSCA 489 are equivalent courses. Students may not receive credit for both.

**ME 490. Cooperative Education (1-12).** An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U. FCSA/ME 379. Available summer only - 10 credit minimum. Same as FCSG 490. Students may not receive credit for both.

**ME 492. Practicum (5-15).** Prerequisite, permission of Department Chair. Grading will be S or U. ME 492 and BSED 492 are equivalent courses. Students may not receive credit for both.

**ME 493A. Undergraduate Research Practicum (1-3).** Conduct research under direct supervision of a professor with specific learning agreement required. Department requirements must be met. Grade will be S/U. ME/IT/ADMG/BSED 493A are equivalent courses. May be repeated for a total of 3 credits.

**ME 493B. Undergraduate Assistant Practicum (1-3).** Assist in monitoring, supervising, supporting, and tutoring instruction under direct supervision of a professor with specific learning agreements required. Department requirements must be met. Grade will be S/U. ME/IT/ADMG/BSED 493B are equivalent courses. May be repeated for a total of 3 credits.

**ME 496. Individual Study (1-6).** May be repeated. Prerequisite, permission of instructor.

**ME 498. Special Topics (1-6).**

**ME 499. Seminar (1-5).** May be repeated.

**ITAM Programs and Courses on Reserve**

Programs: Bachelor of Science Business Education Major; Bachelor of Science Business Education Minor; Bachelor of Science Marketing Education Major; Bachelor of Science Marketing Education Minor.

Courses: BSED 420. Teaching Accounting (3); BSED 425. Teaching Keyboarding and Computer Applications (3); BSED 426. Teaching Basic Business Subjects (3); IT 352. Windows and File Management (2); IT 369. Advanced Database Applications (2); ADMG/IT 386. Records Management (3); IT 461. Administrative Systems Analysis (5); ME 331. Teaching Marketing Education (3).

**INTERNATIONAL STUDIES AND PROGRAMS**

**Interim Executive Director: Michael Launius**

**International Center**

**International Studies and Programs**

**General Program Information**

The Office of International Studies and Programs (OISP) coordinates all internationally related activities on campus. This includes maintaining institutional linkages, facilitating faculty exchanges, providing study abroad/exchange and academic advising for both international students and American students, promoting English language acquisition through the Asia University America Program and the University English as a Second Language Program, and collaborating with the academic Deans and departments in support of the overall internationalization of the University curriculum.

OISP provides a variety of services to all segments of Central Washington University in order to meet the diverse needs of CWU’s students, faculty, international students, research scholars and professors. The following services are offered through the OISP: study abroad/exchange advising (SA/EA), advising to international students (ABS), English language training through the University English as a Second Language (UESL) program, and a unique English language and cultural learning experience for Japanese students from Asia University in Japan through the Asia University America Program (AUAP).

**Institutional Linkages**

Central Washington University and the Office of International Studies and Programs (OISP) maintain active inter-institutional and organizational relationships with the following universities: Anhui University, China; Gunma Prefectural Women’s University, Japan; Herzen State Pedagogical University, Russia; University of Pecs, Hungary; International Student Exchange Program, various countries; Mexico; Kyoto University of Foreign Studies, Japan; Northern Jiaotong University, China; Queensland University of Technology, Australia; Charles Darwin University, Australia; Griffith University, Australia; Macquarie University, Australia; University of Shimane, Japan; Shimane Women’s Junior College, Japan; Shimane International College, Japan; Takushoku University, Japan; University of Hull, United Kingdom; Universidad Austral de Chile, Chile; Pukyong National University, Korea; AHA International, various countries; Beijing University, China; Universidad Anahua del Sur, Mexico; Université de Pau et des Pays de l’Adour, France; College Consortium for International Studies, various countries; American Institute for Foreign Studies, various countries; Centro de Investigaciones en Medio Ambiente y Salud (CIMAS), Ecuador; University of Washington Cadiz Program, Spain; Universidad Autonoma de Guadalajara, Mexico; Asia University, Japan; and Napier University, Scotland. Active student and faculty exchange opportunities exist between CWU and these institutions.

**INTERNATIONAL AND AREA STUDIES**

CWU offers Chinese, French, German, Japanese, Russian and Spanish language courses. Students studying a language are encouraged to have international experience in order to learn more about the cultural context of the language. Regular degree programs are offered in Foreign Languages with specializations in Chinese, French, German, Japanese, Russian and Spanish. The Foreign Language Broad Area major may include study abroad in a country where the target language is taken.

Students can internationalize their undergraduate education by completing a major or minor in Asia/Pacific Studies and/or Latin American Studies. These programs of study are interdisciplinary and incorporate courses in anthropology, art, economics, geography, history, languages, philosophy, and political science. Other area-focused courses are also available throughout the academic year.

**STUDY ABROAD AND EXCHANGE PROGRAMS**

**Program Director: Heather Barclay Hamir**

**International Center**

Study abroad and exchange program advising is available to all students who are interested in studying on a national or international program during their studies at CWU. There are more than two hundred international programs that offer study in over 50 countries including Japan, England, Australia, Ireland, Spain, France, Germany, Mexico, Hungary, Russia and China. Students can study abroad for as briefly as one month or as long as one year. Programs are available all quarters, including summer, and program fees are similar to, and, in
some cases, lower than fees for studying at CWU. The International Center has a library of resources that includes international opportunities for study, scholarships, travel, volunteer work, internships and careers.

Through the National Student Exchange (NSE) program, students can study for a quarter, semester or a year at one of CWU’s partner institutions within the United States. CWU has national exchange with more than 170 universities in 48 states and U.S. territories and Canada. NSE also provides students with the opportunity to study at many predominantly minority institutions within the United States. Exchange participants have the option of paying the in-state tuition of either the host institution or CWU. Students interested in any study abroad, exchange, or international internship opportunity should visit the International Center.

ADVISING TO INTERNATIONAL STUDENTS AND SCHOLARS

International students and scholars receive academic advising, advocacy, and immigration regulations and procedures assistance through the Office of International Studies and Programs. Support services are available to all international students including those here for language training in the UESL Department, to take part in an academic year exchange, or to obtain a Bachelor’s or Master’s degree.

UNIVERSITY ENGLISH AS A SECOND LANGUAGE PROGRAM

Program Director: Steve Horowitz
International Center

Lecturers
Matt Britschgi
Randi Freeman
Meiqi He
Beiyin Hu
Carl Rosser

The University English as a Second Language Program consists of a year-round intensive English program and short-term special programs. The year-round intensive program provides English language instruction (20 hours a week), orientation to American culture, and academic preparation for international students from around the world. Students can enter the program four times a year and progress through the 5-level program at their own rate. Content courses and elective courses, including TOEFL Preparation, are offered in addition to work in the core skill areas (reading, writing, integrated grammar, listening comprehension, and speaking). Educational field trips, social activities, and outside-of-class communication opportunities with native speakers of English serve to enhance the learning experience. In addition, conditional admission to undergraduate study at CWU is an option through the UESL Program.

Short-term special programs are arranged for specific groups from schools, companies and organizations. Students from many of CWU’s sister institutions come to campus each year for such programs.

The Program provides practical training in Teaching English as a Second Language for English Department graduate students in TESL. American students can volunteer to be a Conversation Partner with a UESL student.

ASIA UNIVERSITY AMERICA PROGRAM

Program Director: Nicki Kirkar
International Center

Lecturers
Pedro Bicchieri
Kent DaVault
Stephanie Johnson

The Asia University America Program (AUAP) is a study abroad program for freshman and sophomore students from Asia University in Tokyo, Japan. Two groups of students come to CWU each year and stay for five months. A group of approximately 85 students arrives at the beginning of March and stays until the end of July, and a group of approximately 90 students arrives at the beginning of fall quarter and stays through mid-February. The program is presently ongoing at two other universities in the northwest: Western Washington University and Eastern Washington University.

The purpose of the AUAP is to provide students from Asia University the opportunity to improve their English skills, learn about American culture and experience university life in the US. Students attend 18 hours of AUAP classes per week following the required curriculum from Asia University which includes; Functions of English, Integrated English Skills, and American Studies. The classes are taught by AUAP instructors following a curriculum set up by Asia University. The students earn one semester of Asia University credit during their studies at CWU.

CWU students are employed in the AUAP as International Peer Advisors and also as teaching assistants in the classes. Many CWU students volunteer to participate in the Campus Friends program in which AUAP students are matched with CWU students for conversation and activities.
LATIN AMERICAN STUDIES PROGRAM

Interim Program Directors:
Michael Ervin, History
Anthony Abbott, Geography and Land Studies

General Program Information

The Latin American Studies minor is designed to provide students with interdisciplinary training in Latin America’s diverse regions and peoples. Coursework will address important elements of Latin America’s economy, society, politics, and culture. The minor will be useful to those with career interests in business, government, social work, and teaching, and those who wish to travel in Latin America. Moreover, the Latin American Studies minor may also serve as preparation for graduate study in multiple academic or professional fields.

Requirements for Minors in Latin American Studies

(a) Prerequisite, Spanish, Portuguese or French language equivalent to the end of the first year (153).
(b) Required Course (5 credits)
   LAS 102, An Introduction to Latin American Studies
(c) Required Elective Credits (20 credits)
   A total of 20 approved electives in at least three different disciplines at the 300 level or above is required (see “List of Approved CWU Courses” below).
   Courses taken through CWU exchange or study abroad programs in a Latin American university may be applied for minor program credit. Latin American content may be used for minor program credit, upon approval of the LAS director(s).
(d) Average GPA
   A 2.0 average GPA in all program courses is required.

List of Approved CWU Courses (By Department/Program)

(a) Anthropology
   ANTH 342, Hispanic Cultures of Western United States (4)
   ANTH 346, Cultures of Latin America and the Caribbean (4)
(b) English
   ENG 331, Chicano Literature (4)
(c) Ethnic Studies
   ETS 350, Survey of Chicano Studies (4)
   ETS 351, Contemporary Chicano Issues (5)
   ETS 352, Chicano Social and Psychological Perspectives (4)
(d) Foreign Languages
   SPAN 301, Introduction to Hispanic Literature (3)
   SPAN 310, Hispanic Civilization and Culture (3)
   SPAN 444, Chicano Literature (3)
   SPAN 446, Hispanic Cinema (3)
   SPAN 456, The Hispanic Short Story (3)
   SPAN 457, Spanish-American Theater (3)
   SPAN 458, Spanish-American Narrative (3)
   SPAN 459, Spanish-American Poetry (3)
   SPAN 467, Hispanic Literature and Film (3)
   SPAN 471, Hispanic/Latino Cultures of the U.S. (3)
(e) Geography and Land Studies
   GEOG 470, Geography of Latin America (4)
   GEOG 471, Geography of Middle America (3)
(f) History
   HIST 328, Modern Latin America (5)
   HIST 386, The Latin American Colonies (5)
   HIST 464, Latin American Revolutions (5)
   HIST 488, Mexico in the Modern Era (5)
(g) Latin American Studies
   LAS 398, Special Topics (1-6)
   LAS 399, Multi Disciplinary Seminar on Latin America (5)
   LAS 496, Individual Study
   POSC 361, Latin American Politics (5)

Latin American Studies Courses


LAS 398. Special Topics (1-6).
LAS 399. Multi-disciplinary Seminar on Latin America (5).
LAS 496. Individual Study (1-6).

Undergraduate Courses/Programs on Reserve

The following courses are on reserve and may be offered subject to program needs:
LAS 360 Survey of Modern Mexico (taught in Mexico only) (5), and LAS 460 Comparative Cultures-Mexico (taught in Mexico only) (5).

LAW AND JUSTICE

Web Site
http://www.cwu.edu/~lajhome/

Faculty
Chair: Philip Tolin
Psychology Building 463

Professors:
J. Michael Olivero, Ph.D., M.S.W., Corrections, Criminology, Research Methods, Criminal Justice
Charles Reasons, LL.B., Ph.D., Criminology, Criminal Justice, and Pre-Law

Associate Professor:
James B. Roberts, J.D., M.S.W., Legal Research, Correctional Law, Correctional Counseling, Paralegal Studies and Criminal Justice

Associate Professor:
Key Sun, LL.B., M.A., M.S.W., Ph.D., Methodology, Correctional Counseling, Criminal Justice, Psychology (Director, CWU - Pierce)

Assistant Professor:
Sarah Britto, Ph.D., Criminal Justice, Research Methods, Crime and The Media
Rodrigo Murata, M.P.A., Police Personnel Administration, Administration of Justice, Criminal Investigation, Intro to Criminal Law, Police Community Relations, Research Methods (Director, CWU - Yakima)

Mary Ellen Reimund, M.A., J.D., LL.M., Criminal Law, Criminal Justice, Alternative Dispute Resolution (Director, CWU - SeaTac)

Lecturer
Yvonne Chapman, M.A., J.D., Pre Law (Director, CWU - Lynnwood)
Robert Moore, M.A., Corrections, Correctional Counseling, Criminology

General Departmental Information

The Law and Justice curriculum is designed to give students a foundation in law and justice, and a broadly based education in the liberal arts tradition, not a police or corrections training experience. This major primarily focuses on the disciplines of criminal justice and legal studies, as well as political science, psychology, and sociology. The core courses are designed to provide an infrastructure in law and justice. Approved elective courses provide opportunity for the students to develop a broad perspective on social and legal issues.
Standards for Admission to the Law and Justice Major

1. Admission into the LAJ major will be based upon overall grade point average (GPA) of 2.25. Students should also submit a one-page statement explaining their reasons for applying for a LAJ degree.

2. The Department Chair may admit a limited number of students with GPAs under 2.25.

3. Students applying to the LAJ major must submit a major application form.

4. The Department of Law and Justice reserves the right to modify these requirements in special cases or as the needs of the Department change.

Department Standing: A minimum grade of C= (1.7) must be earned in each course used to fulfill major requirements.

Bachelor of Arts
Law and Justice Major

Law and Justice Core Requirements

Credits
LAJ 300, Administration in Criminal Justice .................. 4
LAJ 302, Evidence and Arrest .................. 4
LAJ 303, Legal Research .................. 4
LAJ 400, Research Methods in Criminal Justice .............. 4
LAJ 401, Ethics, Diversity and Conflict in Criminal Justice . 4
LAJ 459, Current Issues .................. 4

Law and Justice Core Total 24

Students may obtain a degree without a specialization or select a specialization based upon interest and future plans. Each specialization — Legal Studies, Corrections and Law Enforcement — has a core group of courses which must be taken.

LAJ Degree, Generalist

LAJ Core Requirements .................. 24
Classes selected from requirements of any of the specializations. ................. 28
Select 8 credits from the list of approved electives .................. 8

Total 60

Legal Studies Specialization

Required Courses Credits
LAJ Core Requirements .................. 24
LAJ 311, Family Law .................. 4
LAJ 313, Introduction to Criminal Law .................. 4
LAJ 316, Introduction to Paralegal Studies .................. 4
LAJ 317, Introduction to Civil Practice .................. 4
LAJ 410, Legal Writing .................. 4
Select 16 credits from the list of approved electives* .................. 16

Total 60

Corrections Specialization (4651)

Required Courses Credits
LAJ Core Requirements .................. 24
LAJ 324, Correctional Law .................. 4
LAJ 326, Correctional Counseling .................. 4
LAJ 327, Community Corrections .................. 4
LAJ 450, Report Writing .................. 4
LAJ 451, Crime in America .................. 4
Select 16 credits from the list of approved electives* .................. 16

Total 60

Law and Justice Courses

LAJ 101. Introduction to Law and Justice (4). A basic overview of the nature and sources of law and the application of law to our everyday life.

LAJ 300. Administration of Criminal Justice (4). The sources of police power and authority in a democratic society, the internal organization and administration of federal, state and local agencies, their interaction with each other and with the communities they serve. Formerly LAJ 347. Students may not receive credit for both.

LAJ 302. Evidence and Arrest (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. A review of guidelines for police arrest, search, interrogation and identification procedures based upon rules of criminal procedure derived from the U.S. Constitution. Formerly LAJ 245 and LAJ 320. Students may not receive credit for both.

LAJ 303. Legal Research (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Techniques of legal research; the case system, statutes, court decisions, Shepardizing. Formerly LAJ 348. Students may not receive credit for both.

LAJ 311. Family Law (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Marriage, divorce, state regulation, custody, and care and supervision of children. Formerly LAJ 348. Students may not receive credit for both.

LAJ 313. Introduction to Criminal Law (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Scope and nature of law; classification of offenses; act and intent; capacity to commit crime and defenses. Elements of major criminal statutes. Formerly LAJ 255. Students may not receive credit for both.

LAJ 316. Introduction to Paralegal Studies (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course provides an introduction to paralegal studies. It provides analysis of the role of paralegal and the tasks involved in being a paralegal including interviewing clients and witnesses, legal research, writing and legal writing and attending trials.

LAJ 317. Introduction to Civil Practice (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course is designed to provide students...
with a comprehensive overview of civil litigation from investigation through discovery, trial and appeal.

LAJ 324. Correctional Law (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course examines transitions in prisoner civil rights since the U.S. Supreme Court ruled that inmates hold all rights as other citizens with the exception of those necessarily taken by fact of incarceration. Constitutional issues will be analyzed, including standards for shelter and medical care, discipline, religion and access to the courts. Formerly LAJ 312. Students may not receive credit for both.

LAJ 326. Correctional Counseling (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course provides an analysis of the role of correctional counselor in rehabilitative efforts with offenders. Course focuses include criminal offender treatment methods and correctional or rehabilitative policy. Formerly LAJ 315. Students may not receive credit for both.

LAJ 327. Community Corrections (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Maintaining, supervising and counseling offenders in the community based setting. Formerly LAJ 330. Students may not receive credit for both.

LAJ 331. Investigation (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Function and propriety of investigations; methods of gathering evidence. Formerly LAJ 247 and LAJ 321. Students may not receive credit for both.

LAJ 332. Police Community Relations (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course examines the relationship between the police and community, and how to make this relationship a positive one. Analysis will be made of the history of police and friction with various groups in society. Attempts at positive police communication and community participation will also be examined. Formerly LAJ 322. Students may not receive credit for both.

LAJ 333. Police Personnel Administration (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. History and philosophy of federal, state and local police personnel programs; overview of personnel functions.

LAJ 334. Issues in Policing (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course provides a comprehensive examination of the current critical issues and policy dilemmas within the American criminal justice system. Formerly LAJ 323. Students may not receive credit for both.

LAJ 340. Research Methods in Criminal Justice (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Includes historical, ideological development of juvenile justice process; analyses policies, mechanisms; examines integrated network of agencies; examines juvenile law, rights, treatment; examines current research.

LAJ 342. Juvenile Justice Process (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Includes historical, ideological development of juvenile justice process; analyses policies, mechanisms; examines integrated network of agencies; examines juvenile law, rights, treatment; examines current research.

LAJ 343. Criminal Justice and the Media (4). Prerequisite, admission to the Law and Justice major or by permission. An exploration of media messages concerning crime and criminal justice, how these portrayals compare with the operation of the criminal justice system, and how media images influence both individual attitudes and public policy.

LAJ 350. Criminal Justice and the Media (4). Prerequisite, admission to the Law and Justice major or by permission. An exploration of media messages concerning crime and criminal justice, how these portrayals compare with the operation of the criminal justice system, and how media images influence both individual attitudes and public policy.

LAJ 351. Preparing for a Law Enforcement Career (2). This course provides crucial information to help students understand, prepare, compete, and promote themselves during the competitive testing and hiring process for law enforcement positions.

LAJ 358. Special Topics (1-6).

LAJ 400. Research Methods in Criminal Justice (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course examines current research in criminal justice and research methods and statistics. Students will critique current methods. Formerly LAJ 341. Students may not receive credit for both.

LAJ 401. Ethics, Diversity, and Conflict in Criminal Justice (4). Junior or Senior status, or by permission of instructor. Introduce students to a multi-cultural approach to practical legal ethics within the criminal justice system. The course covers law enforcement, corrections, and Alternative Dispute Resolution.

LAJ 410. Legal Writing (4). Prerequisite, Junior or Senior status or by permission of instructor. The pre-law or paralegal student will learn fundamental legal writing tools, in conjunction with basic rules on correspondence, retainer agreements and other commonly used documents.

LAJ 426. Advanced Correctional Counseling (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course will provide students with specialized training in theory, and techniques required in the rapidly evolving practice of correctional counseling. Formerly LAJ 318. Students may not receive credit for both.

LAJ 440. Basic Mediation (4). Course provides an introduction to the philosophy, practice and skills required for basic mediation, which are explored through readings, lectures, demonstrations
and skill building role plays.

LAJ 450. Report Writing (4). Prerequisite, Junior or Senior standing or by permission of instructor. Law enforcement and corrections students will learn basic writing in the context of specialized reports utilized in their fields.

LAJ 451. Crime in America (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. American crime problems in historical perspectives. Social and policy factors affecting crime. Crime impact and trends, offender and victim profiles. Formerly LAJ 325. Students may not receive credit for both.

LAJ 453. Domestic Violence Issues (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. This course provides an overview of domestic violence in our society and examines critical issues, including perspectives from the legislature, courts, police, prosecutors, and victims. Significant emphasis on these perspectives in Washington State.

LAJ 459. Current Issues (4). Prerequisites: Junior or Senior standing or by permission of instructor and senior standing. Current legal, correctional and enforcement issues will be explored. Course restricted to seniors only.

LAJ 460. Terrorism (4). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. Survey of domestic terrorism and United States interests in international terrorism, including concepts and theories of terrorism, history of terrorism, terrorist organizations, specific terrorist incidents, investigative techniques, and developing legal issues.

LAJ 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

LAJ 491. Workshop (1-6). Specialists will lead discussion of a variety of problems concerning the law and justice system. With the approval of the director of the program the course may be designated for S or U grades.

LAJ 492. Teaching Experience in Law and Justice (1-4). Prerequisite, completion of course in which teaching or assisting is to be done and approval of the instructor and department chair. May be repeated up to a total of 8 credits. Grade will be S or U.

LAJ 495. Directed Research (1-5). Prerequisite, permission of instructor and department chair. Individual research project. May be repeated up to a total of 10 credits.

LAJ 496. Individual Study (1-6). Prerequisite, permission of instructor.

LAJ 498. Special Topics (1-6). Prerequisite, admission to the major or minor or permission of the Chair or Center Director. LAJ 300 is recommended. These courses will offer in-depth information on various special topics relating to current issues.

LAJ 499. Seminar (1-5). Prerequisite, permission of the instructor. With approval of the program director the course may be designated for regular letter grade or S or U depending upon course and method of instruction.

Undergraduate Courses/Programs on Reserve

The following courses are on reserve and may be offered subject to program needs:

LAJ 340.
Faculty
Chair: Stuart Boersma
Bouillon 108D

Professors
Stuart F. Boersma, Differential Geometry, General Relativity
Alla Ditta Raza Choudary, Algebraic Topology
Stephen P. Glasby, Computational Algebra, Representation Theory
James D. Harper, Harmonic Analysis
Scott M. Lewis, Mathematics Education, History of Mathematics
Cen Tsong Lin, Probability and Mathematical Statistics, Actuarial Science

Associate Professors
Tim Englund, Group Theory, Representation Theory, Statistics
Mark Oursland, Mathematics Education

Assistant Professors
Yvonne Chueh, Actuarial Science, Statistics
Jonathan Fassett, Topology, Dynamical Systems
Michael Lundin, Mathematics Education
Aaron Montgomery, Topology, Algebra
W. Dan Curtis, Applied Mathematics

General Departmental Information

Mathematics is an expanding and evolving body of knowledge as well as a way of perceiving, formulating and solving problems in many disciplines. The subject is a constant interplay between the worlds of thought and application. The student of mathematics will find worthy challenges and the subsequent rewards in meeting them.

The general student will find preparatory courses in precalculus mathematics and traditional mathematics courses such as calculus, linear algebra, geometry, abstract algebra, and analysis. Also, more specialized courses in discrete mathematics, number theory, and the history of mathematics are offered. Special needs of Computer Science majors, Elementary Education majors and general education requirements are also met by courses in the Mathematics Department.

For those desiring concentrated work in mathematics, the Mathematics Department offers four programs leading to Bachelor degrees. A Bachelor of Arts or Bachelor of Science in Mathematics prepares the student as a mathematician for industry or graduate work. A Bachelor of Arts in Secondary Teaching prepares the student to teach at the junior, middle or high school levels. A Bachelor of Science in Mathematics with an Actuarial Science specialization prepares the student to work as an actuary or in applied statistics. A Bachelor of Arts minor and a Secondary Teaching minor are also available.

One graduate degree is offered: the Master of Arts for Teachers. This is described in the graduate section of the catalog. All programs (major, minor, including electives) must be on file and approved by the Department at least one academic year preceding graduation.

Admission and Placement Notes

1. Enrollment in MATH 100C, MATH 101, MATH 130, MATH 164 requires a satisfactory score on one of the following tests: SAT, ACT, COMPASS Test or the Intermediate Assessment Test. The scores on the SAT or ACT tests must have been achieved within the last three years before math placement. The student with insufficient test scores is encouraged to enroll in developmental classes. For more information contact the Math Center in Hertz 101 or 963-1834.

2. Students who wish to enroll in Precalculus (MATH 153 or MATH 154) or Calculus (MATH 170 or MATH 172) and who have not had the necessary prerequisite course at a college or university must take the mathematics placement test. Student will be placed in accord with their results on this test as determined by the Mathematics Department. See the Mathematics Department for more details.

3. Admission to any mathematics course having prerequisites requires either a suitable math placement test score or a grade of 2.0 or better in each listed prerequisite to that course.

4. Admission to any major in the Mathematics Department will be considered after the first two quarters of calculus are taken (MATH 172, MATH 173). Transfer students with the calculus background will generally take and successfully complete (2.0 or better) ten hours of math beyond calculus to be admitted to a major. Application forms are available from the Mathematics Department office. Students must meet with an advisor in the Mathematics Department before being considered for major or minor. In addition, students must earn a minimum grade of C in any course which fulfills a major or minor requirement.

Bachelor of Arts
Mathematics Major
Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 172</td>
<td>Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 173</td>
<td>Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 260</td>
<td>Sets and Logic</td>
<td>5</td>
</tr>
<tr>
<td>MATH 265</td>
<td>Linear Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272</td>
<td>Multivariable Calculus</td>
<td>10</td>
</tr>
</tbody>
</table>

Mathematics Minor

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 172</td>
<td>Calculus</td>
<td>10</td>
</tr>
</tbody>
</table>

Total 22

Mathematics Teaching Secondary Major and Minor

Admission to the Mathematics Teaching Secondary Major or Minor is selective. A cumulative grade point average of 2.50 is required in the Pre-Admission courses listed below. Further, students must successfully complete MATH 260, Set and Logic, by spring quarter of the academic year of their acceptance into the program. The Mathematics Department will process applications once a year and notify students of their status by February 15. The deadline for submission of applications to the Department is January 15. A completed application must include the standard major application form and a mathematics advisor approved graduation plan.

Students must be accepted as a Mathematics Education major or minor prior to enrolling in mathematics classes beyond MATH 265, with the exception of MATH 311. Students applying for admission to the major may register for courses for the following quarter but will be dropped if not admitted. Upon admission to the major, all students will enroll in MATH 299E, Orientation seminar: Secondary Mathematics, in the subsequent spring quarter.

Students need to meet with a mathematics education advisor well in advance of requesting admission to the Secondary Mathematics Teaching Program.

Application Deadline: January 15
Notification of Acceptance into the program: February 15

Pre-Admission Requirements: Applicants for admission into the Secondary Mathematics Teaching program.
<table>
<thead>
<tr>
<th>Mathematics: Teaching Secondary Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is an endorsable minor for student teaching.</td>
</tr>
</tbody>
</table>

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 172, 173, Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 260, Sets and Logic</td>
<td>5</td>
</tr>
<tr>
<td>MATH 265, Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 299E, Orientation Seminar</td>
<td></td>
</tr>
<tr>
<td>Secondary Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>MATH 311, Statistical Concepts and Methods</td>
<td>5</td>
</tr>
<tr>
<td>MATH 320, History of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 324, Methods and Materials in</td>
<td></td>
</tr>
<tr>
<td>Mathematics-Secondary</td>
<td>4</td>
</tr>
<tr>
<td>MATH 360, Algebraic Structures I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 355, College Geometry I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 455, College Geometry II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 499E, Senior Seminar</td>
<td>3</td>
</tr>
</tbody>
</table>

### Middle Level Math/Science Teaching Minor

This minor is designed for students who wish to teach science and/or math at the middle level (grades 5-8). Completion of this minor results in a Middle Level Math/Science endorsement. The coursework provides experiences in math and science content and pedagogy including field experience. Students will learn about math, science, and the psychology of adolescents in addition to the more generalized coursework in their major. This minor is open only to students working on or currently holding teaching endorsements in Elementary Education, Biology, Chemistry, Earth Science, Mathematics, or Physics. Students interested in this minor should see an advisor as soon as possible to discuss overlapping requirements with the General Education Program (potentially 25 credits of this minor could satisfy General Education requirements).

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCED 322/MATH 323, Teaching Experience</td>
<td>3</td>
</tr>
<tr>
<td>in Math and Science</td>
<td></td>
</tr>
<tr>
<td>EDEL 477, Middle School Students and Their Environment</td>
<td>4</td>
</tr>
<tr>
<td>EDCS 482, Instruction and Assessment for</td>
<td>3</td>
</tr>
<tr>
<td>the Middle Level</td>
<td></td>
</tr>
</tbody>
</table>

## In Addition:

- **Elementary Education Majors** must take: 3
- **EDCS 424, Reading in the Content Fields** (3)
- **Secondary Science Majors** must take:  
  - EDEL 323, Teaching Elementary School Mathematics (323)
- **Secondary Math Majors** must take:  
  - SCED 322, Science in the Elementary Schools (3)

### Total 50 Credits

## Bachelor of Science Mathematics Major

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 172, 173, Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 260, Sets Logic</td>
<td>5</td>
</tr>
<tr>
<td>MATH 265, Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272, 273, Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 311, Statistical Concepts and Methods</td>
<td>5</td>
</tr>
<tr>
<td>MATH 360, Algebraic Structures I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 365, Linear Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 376, 377, Elementary Differential</td>
<td>6</td>
</tr>
<tr>
<td>Equations</td>
<td></td>
</tr>
<tr>
<td>Select one:</td>
<td></td>
</tr>
<tr>
<td>CS 110, Programming Fundamentals I</td>
<td>4</td>
</tr>
<tr>
<td>Programming</td>
<td></td>
</tr>
<tr>
<td>CS 157, Introduction to COBOL Programming</td>
<td>4</td>
</tr>
<tr>
<td>CS 177, Introduction to FORTRAN Programming</td>
<td>4 OR</td>
</tr>
<tr>
<td>CS 187, Introduction to C Programming</td>
<td></td>
</tr>
<tr>
<td>PHYS 181, 181LAB,182,182LAB,183,183LAB</td>
<td>15</td>
</tr>
<tr>
<td>General Physics</td>
<td></td>
</tr>
<tr>
<td>MATH 413, Introduction to Stochastic</td>
<td></td>
</tr>
<tr>
<td>Processes (5)</td>
<td></td>
</tr>
<tr>
<td>MATH 464, Optimization Theory (5)</td>
<td>5</td>
</tr>
<tr>
<td>Select two of the following sequences:</td>
<td>18-19</td>
</tr>
<tr>
<td>MATH 411A, Introduction to Probability</td>
<td></td>
</tr>
<tr>
<td>Theory and</td>
<td></td>
</tr>
<tr>
<td>MATH 411B, 411C, Introduction to</td>
<td></td>
</tr>
<tr>
<td>Mathematical Statistics (10)</td>
<td></td>
</tr>
<tr>
<td>MATH 461, 462, 463, Abstract</td>
<td></td>
</tr>
<tr>
<td>Algebra (9)</td>
<td></td>
</tr>
<tr>
<td>MATH 471, 472, 473, Advanced Analysis (9)</td>
<td></td>
</tr>
<tr>
<td>MATH 475, 476, 477, Applied Analysis (9)</td>
<td></td>
</tr>
</tbody>
</table>

### Total 88-89 Credits
Actuarial Science Specialization

An actuary is a business professional who uses specialized mathematical skills from probability and statistics to define, analyze and solve financial and social problems. Actuaries create and manage insurance programs which reduce the adverse financial impact of both expected and unexpected things that happen to people, such as illnesses, accidents and death. In addition, actuaries design pension programs, making sure there are sufficient resources to pay retirement and death benefits while also charging participants in the insurance or retirement plan a fair price.

The Bachelor of Science in Mathematics - Actuarial Science specialization is listed below and is designed to prepare a student in both the mathematics and business areas necessary for success in the rigorous but rewarding actuarial profession.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 172, 173, Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 265, Linear Algebra I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 272, 273, Multivariable Calculus</td>
<td>10</td>
</tr>
<tr>
<td>MATH 311, Statistical Concepts and Methods</td>
<td>5</td>
</tr>
<tr>
<td>MATH 410A, 410B, Advanced Statistical Methods</td>
<td>6</td>
</tr>
<tr>
<td>MATH 411A, Introduction to Probability Theory</td>
<td>4</td>
</tr>
<tr>
<td>MATH 411B, 411C, Mathematical Statistics 6</td>
<td></td>
</tr>
<tr>
<td>MATH 413, Introduction to Stochastic Processes</td>
<td>5</td>
</tr>
<tr>
<td>MATH 418A, 418B, Theory of Interest I, II, III</td>
<td>3,3,3</td>
</tr>
<tr>
<td>MATH 419A, 419B, 419C, Actuarial Mathematics I, II, III</td>
<td>3,3,3</td>
</tr>
<tr>
<td>ACCT 251, Accounting I</td>
<td>5</td>
</tr>
<tr>
<td>ECON 201, Principles of Economics, Micro</td>
<td>5</td>
</tr>
<tr>
<td>ECON 202, Principles of Economics, Macro</td>
<td>5</td>
</tr>
<tr>
<td>ECON 301, Intermediate Microeconomic Analysis</td>
<td>5</td>
</tr>
<tr>
<td>ECON 302, Intermediate Macroeconomic Analysis</td>
<td>5</td>
</tr>
<tr>
<td>FIN 370, Introductory Financial Management</td>
<td>5</td>
</tr>
<tr>
<td>FIN 475, Investments</td>
<td>4</td>
</tr>
<tr>
<td>CS 110, Programming Fundamentals I</td>
<td>4</td>
</tr>
<tr>
<td>CS 167, Visual Basic Programming</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total 108**

### Mathematics Courses

**MATH 100A. PreAlgebra (5)**. This course is designed to prepare students for college mathematics. Symbolic, graphical, and numeric representations will be studied to understand and apply the concepts underlying algebra. Credits will not be allowed toward meeting Bachelor's degree requirements.

**MATH 100B. Introductory Algebra (5)**. This course is designed to prepare students for college mathematics. Symbolic, graphical, and numeric representations will be studied to understand and apply the concepts of algebra. Credits will not be allowed toward meeting Bachelor's degree requirements.

**MATH 100C. Intermediate Algebra (5)**. This course is designed to prepare students for college level precalculus mathematics. Symbolic, graphical, and numeric representations will be studied to understand and apply the concepts needed to be successful in precalculus.Credits will not be allowed toward meeting Bachelor's degree requirements.

**MATH 101. Mathematics in the Modern World (5)**. Prerequisite, MATH 100B. Selected topics from the historical development and applications of mathematics together with their relationship to the development of our present society.

**MATH 130. Finite Mathematics (5)**. The language of sets, counting procedures, introductory probability and decision-making, introductory descriptive statistics. Meets General Education “reasoning” requirement and prepares student for introductory statistics courses in various departments. Formerly MATH 130.1. Students may not receive credit for both.

(See note on math placement test at beginning of section for information regarding placement into 153, 154, 170, or 172.)

**MATH 153. Pre-Calculus Mathematics I (5)**. Prerequisite, MATH 100C or equivalent, or permission of Department Chair. A foundation course which stresses those algebraic and elementary function concepts together with the manipulative skills essential to the study of calculus. Formerly MATH 153.1. Student may not receive credit for both.

**MATH 154. Pre-Calculus Mathematics II (5)**. Prerequisite, MATH 153 or equivalent, or permission of Department Chair. A continuation of MATH 153 with emphasis on trigonometric functions, vectors, systems of equations, the complex numbers, and an introduction to analytic geometry. Formerly MATH 163.2. Students may not receive credit for both.

**MATH 164. Foundations of Arithmetic I (5)**. Structure of the real number system. Properties of and operations on integers, rationals, decimal representation, percentages, proportion, graphing and elementary problem solving. Recommended for the prospective elementary school teacher. Formerly MATH 164.1. Students may not receive credit for both.

**MATH 170. Intuitive Calculus (5)**. Prerequisite, MATH 153 or permission. An intuitive approach to the differential and integral calculus specifically designed for students in the behavioral, managerial, and social sciences. Not open to students with credit for MATH 172 or higher.

**MATH 172, Calculus (5)**. Prerequisite, MATH 154. Theory, techniques and applications of differentiation and integration of the elementary functions. Formerly MATH 172.1. Students may not receive credit for both.

**MATH 173, Calculus (5)**. Prerequisites, MATH 172. Theory, techniques and applications of differentiation and integration of the elementary functions. Formerly MATH 172.2. Students may not receive credit for both.

**MATH 250. Intuitive Geometry for Elementary Teachers (4)**. Prerequisite, MATH 164. An intuitive approach to the geometry topics relative to the elementary school curriculum.

**MATH 260. Sets and Logic (5)**. Prerequisite, MATH 173 or CS 301 and MATH 172 or equivalents. Essentials of mathematical proofs, including use of quantifiers and principles of valid inference. Set theory as a mathematical system.

**MATH 265. Linear Algebra I (4)**. Prerequisite, MATH 173 or permission of instructor. Vector spaces, linear systems, matrices and determinants.

**MATH 272. Multivariable Calculus (5)**. Prerequisite, MATH 173. Differential and integral calculus of multivariable functions and related topics. Formerly MATH 272.1. Students may not receive credit for both.

**MATH 273. Multivariable Calculus (5)**. Prerequisite, MATH 272. Differential and integral calculus of multivariable functions and related topics. Formerly MATH 272.2. Students may not receive credit for both.

**MATH 298. Special Topics (1-6)**.

**MATH 299. Seminar (1-5)**.

**MATH 299A. Seminar: Actuarial Science Problems I (2)**. Prerequisite, MATH 273 or permission of instructor. Students discuss and present problems using techniques from calculus and linear algebra important for actuaries. Formerly MATH 299.1. Students may not receive credit for both.


**MATH 311. Statistical Concepts and Methods (5)**. Prerequisite, MATH 130 or permission of instructor. Hands-on...
activities for exploring data. Surveys, planned experiments and observational studies. Modeling, sampling distributions and statistical inference. MINITAB statistical computing language introduced and used extensively.

MATH 320. History of Mathematics (3).
Prerequisite, MATH 260. A study of the development of mathematics and the personalities involved.

MATH 323. Teaching Middle School Mathematics and Science (3). Prerequisites, MATH 324 or EDEL 323 and SCED 324 or SCED 322. Prospective teachers will learn and use the methods and materials needed to teach middle school students mathematics and science with emphasis on the use of experiments, manipulatives, problems solving, cooperative learning, and communication of understanding. MATH 323 and SCED 323 are equivalent courses. Students may not receive credit for both.

MATH 324. Methods and Materials in Mathematics-Secondary (4). Prerequisites, MATH 355, MATH 265, EDCS 311 and permission of instructor.

MATH 330. Discrete Mathematics (5).
Prerequisites, MATH 260 and Permission. Topics from logic, combinatorics, counting techniques, graph theory and theory of finite-state machines. Formerly MATH 230. Students may not receive credit for both.

MATH 332. Discrete Models (4). Prerequisites, permission and Tier II Secondary Mathematics Education. Discrete models including graph theory, difference equations, and the models of social choice, and the inherent logic combinatorics, and algebra.

MATH 355. College Geometry I (4). Prerequisites: permission and Tier II Secondary Mathematics Education. An inductive and deductive approach to intuitive geometry, modern Euclidean geometry, history of geometry, and axiomatic systems in geometry.

MATH 360. Algebraic Structures I (3).
Prerequisites, permission and Tier II Secondary Mathematics Education. First course in the structure of algebraic systems includes the study of real number systems and other algebraic systems in the development of group theory.

MATH 361. Algebraic Structures II (3).
Prerequisites: permission, Tier II Secondary Mathematics Education, and MATH 360. The second course in the structure of algebraic systems, including rings, modules, and fields, and their associated morphisms.

MATH 365. Linear Algebra II (3). Prerequisite, MATH 265 or permission. Vector spaces, linear transformations, bilinear and quadratic forms, eigenvalues, eigenvectors, similarity, inner products and norms.


MATH 401A. Advanced Statistical Methods (3). Prerequisite, MATH 311. A thorough treatment of regression and correlation.

MATH 401B. Advanced Statistical Methods (3). Prerequisite, MATH 401A. A thorough treatment of regression and correlation.

MATH 410A. Introduction to Probability Theory (4).
Prerequisite, MATH 273 or permission. Principal topics include: combinatorial theory, conditional probability, random variables, expectation and moments, generating functions, various discrete and continuous distributions, law of large numbers, central limit theorem. Formerly MATH 411.1. Students may not receive credit for both.

MATH 411B. Introduction to Mathematical Statistics (3). Prerequisite, MATH 411A. Derived distributions, point and interval estimation, hypothesis testing. Correlation and regression theory. Distribution free methods. Bayesian inference. Formerly MATH 412. Students may not receive credit for both.

MATH 411C. Introduction to Mathematical Statistics (3). Prerequisite, MATH 411B. Derived distributions, point and interval estimation, hypothesis testing. Correlation and regression theory. Distribution free methods. Bayesian inference. Formerly MATH 411.3. Students may not receive credit for both.

MATH 412. Applied Numerical Methods (5). Prerequisites, MATH 272 and MATH 265 or permission. Linear systems and their solutions; error analysis; iteration; interpolation; numerical integrations; splines.


MATH 414. Time Series Analysis (3).
Prerequisites, MATH 410B. Model building, parameter estimation, diagnostic checking of time series data; ARIMA models and forecasting. Analysis of seasonal models.

MATH 415. Advanced Topics in Actuarial Sciences (3). Prerequisites, MATH 411A. Topics chosen from credibility and loss distributions, risk theory, and the mathematical theory of interest.

MATH 416A. Actuarial Science Problems II (1-2).
Prerequisite, MATH 411A or concurrent registration. Students discuss and present problems in probability and mathematical statistics important for actuaries. Formerly MATH 499.1 and MATH 416.1. May be repeated for a total of 3 credits.

MATH 416B. Actuarial Science Problems III (1-2).
Prerequisite, MATH 410B or concurrent registration. Students discuss and present problems in probability and mathematical statistics important for actuaries. Formerly taught as MATH 499.2 and MATH 416.2. May be repeated for a total of 3 credits.

MATH 417A. Loss Models I (3). Prerequisites, MATH 411A. Modeling process, calibration and evaluation. Analyzing data, determining a suitable model including parameter values, and providing measures. Formerly MATH 417.1. Students may not receive credit for both.

MATH 417B. Loss Models II (3). Prerequisite, MATH 417A. Modeling process, calibration and evaluation. Analyzing data, determining a suitable model including parameter values, and providing measures of confidence for decisions based upon the model. Formerly MATH 417.2. Students may not receive credit for both.

MATH 418A. Theory of Interest I (3).
Prerequisites, MATH 173 and permission. Applications of discrete and calculu-
based methods to simple and compound interest, force of interest, bonds, annuities, amortization and sinking funds. Formerly MATH 418.1. Students may not receive credit for both.

MATH 418B. Theory of Interest II (3). Prerequisites, MATH 418A and permission. Applications of discrete and calculus-based methods to simple and compound interest, force of interest, bonds, annuities, amortization and sinking funds. Formerly MATH 418.2. Students may not receive credit for both.

MATH 419A. Actuarial Mathematics I (3). Prerequisites, MATH 411A and permission. Mathematics of analyzing and pricing insurance, annuities and pension products. Life contingencies, risk theory, and techniques in reserving and valuation. Formerly MATH 419.1. Students may not receive credit for both.

MATH 419B. Actuarial Mathematics II (3). Prerequisites, MATH 419A and permission. Mathematics of analyzing and pricing insurance, annuities and pension products. Life contingencies, risk theory, and techniques in reserving and valuation. Formerly MATH 419.2. Students may not receive credit for both.

MATH 419C. Actuarial Mathematics III (3). Prerequisites, MATH 419B and permission. Mathematics of analyzing and pricing insurance, annuities and pension products. Life contingencies, risk theory, and techniques in reserving and valuation. Formerly MATH 419.3. Students may not receive credit for both.

MATH 425. Problem-Solving Techniques in Mathematics for Elementary School Teachers (3). Prerequisite, MATH 164. Patterns and techniques of problem-solving; formulating hypotheses; programming solutions; generalizing; investigating and creating problems.

MATH 430. Introduction to Theory of Numbers (3). Prerequisite, MATH 260. Euclidean algorithm, fundamental theorem of arithmetic, diophantine equations, primitive roots and indices and other number theory topics.

MATH 451. Introduction to Topology I (3). Prerequisites, MATH 260 and MATH 265. An introduction to point-set and algebraic topology. Topics may include metric spaces, topological spaces, homotopy theory and the fundamental group. Formerly MATH 451.1. Students may not receive credit for both.

MATH 452. Introduction to Topology II (3). Prerequisite, MATH 451. An introduction to point-set and algebraic topology. Topics may include metric spaces, topological spaces, homotopy theory and the fundamental group. Formerly MATH 451.2. Students may not receive credit for both.

MATH 453. Introduction to Topology III (3). Prerequisite, MATH 452. An introduction to point-set and algebraic topology. Topics may include metric spaces, topological spaces, homotopy theory and the fundamental group.

MATH 455. College Geometry II (3). Prerequisites, permission, MATH 355, and Tier II Secondary Mathematics Education. Introduction to non-Euclidean geometry including history, deductive reasoning, and topics in hyperbolic and elliptical geometry.

MATH 461. Abstract Algebra (3). Prerequisites, MATH 260 and MATH 265. Algebraic structures such as groupoids, groups, rings and fields. Formerly MATH 461.1. Students may not receive credit for both.

MATH 462. Abstract Algebra (3). Prerequisite, MATH 461. Algebraic structures such as groupoids, groups, rings and fields. Formerly MATH 461.2. Students may not receive credit for both.

MATH 463. Abstract Algebra (3). Prerequisite, MATH 462. Algebraic structures such as groupoids, groups, rings and fields. Formerly MATH 461.3. Students may not receive credit for both.

MATH 464. Optimization Theory (5). Prerequisite, MATH 265 and MATH 311, or permission. Decision analysis, simulation theory, queuing theory; linear and dynamic programming.

MATH 471. Advanced Analysis (3). Prerequisites, MATH 260, and MATH 273. Further development of properties of calculus. Formerly MATH 471.1. Students may not receive credit for both.

MATH 472. Advanced Analysis (3). Prerequisite, MATH 471. Further development of properties of calculus. Formerly MATH 471.2. Students may not receive credit for both.

MATH 473. Advanced Analysis (3). Prerequisite, MATH 472. Further development of properties of calculus. Formerly MATH 471.3. Students may not receive credit for both.

MATH 474. Applied Analysis (3). Prerequisite, MATH 376 or permission. Selected topics from advanced analysis especially useful to the engineer, chemist, physicist and applied mathematician. Formerly MATH 472.1. Students may not receive credit for both.

MATH 475. Applied Analysis (3). Prerequisite, MATH 474. Selected topics from advanced analysis especially useful to the engineer, chemist, physicist and applied mathematician. Formerly MATH 472.2. Students may not receive credit for both.

MATH 476. Applied Analysis (3). Prerequisite, MATH 475. Selected topics from advanced analysis especially useful to the engineer, chemist, physicist and applied mathematician. Formerly MATH 472.3. Students may not receive credit for both.

MATH 477. Applied Analysis (3). Prerequisite, MATH 476. Selected topics from advanced analysis especially useful to the engineer, chemist, physicist and applied mathematician. Formerly MATH 472.4. Students may not receive credit for both.

MATH 490. Cooperative Education (1-12). An individualized contracted field experience with business, industry, government, or social service agencies. This contractual arrangement involves a student learning plan, cooperating employer supervision, and faculty coordination. Prior approval required. May be repeated. Grade will be S or U.

MATH 491. Workshop (1-6). The title of the workshop and the credit to be earned shall be determined at the time the workshop is approved. Designed to give an opportunity for individual and group study of problems in mathematics.

MATH 492A. Laboratory Experience in Teaching Mathematics (2). Prerequisite, 30 credits in mathematics. Serves the purpose of providing the opportunity for competent senior or graduate students to receive credit and experience in developing procedures and techniques in teaching college level mathematics. Formerly MATH 492. Students may not receive credit for both.

MATH 492B. Laboratory Experience in Teaching Mathematics (2). Prerequisite, 30 credits in mathematics. Serves the purpose of providing the opportunity for competent senior or graduate students to receive credit and experience in developing procedures and techniques in teaching college level mathematics. Formerly MATH 492. Students may not receive credit for both.

MATH 496. Individual Study (1-6). Prerequisite, permission of instructor.

MATH 498. Special Topics (1-6).

MATH 499. Seminar (1-5).

MATH 499E Senior Seminar: Secondary Mathematics Education (3). Prerequisites: permission, MATH 324, and Tier II Secondary Mathematics Education. Individualized projects using oral presentations and written electronic portfolio to show mastery in all program outcomes for teaching secondary mathematics.

Undergraduate Courses/Programs on Reserve

The following courses are on reserve and may be offered subject to program needs: MATH 162. Technical Mathematics (5); MATH 165. Plane Trigonometry (3); MATH 197. Honors Individual Study (1-12); MATH 397. Honors Individual Study (1-12); MATH 456 Differential Geometry (3); and MATH 481, 482, 483. Numerical Analysis (3,3,3).