General Curriculum Report #241

UNIVERSITY OF IDAHO - REGISTRAR'S OFFICE
November 03, 2006

TO: MEMBERS OF THE UNIVERSITY OF IDAHO FACULTY

The items listed below, approved by the University Curriculum Committee, will be considered to have the necessary faculty approvals unless a petition requesting further consideration of specific items is signed by five faculty members and submitted to the chair of the Faculty Council within 14 calendar days after the date of circulation. If no petition is received within 14 days, the entire report will be submitted to the president for approval and transmittal to the regents, if regents' action is required. If a petition is received, the items in the report for which further consideration is requested will be referred to the Faculty Council and the remainder of the report will move forward. On items referred to it, the council may: (1) affirm the action and report it to a meeting of the university faculty, (2) amend the action and report it to a meeting of the university faculty, or (3) rescind the action. *Note:* If a petition concerns courses or curricula in the College of Letters Arts and Social Sciences or in the College of Agricultural and Life Sciences, and is signed by five faculty members of the respective college, those items will be returned to the college concerned for further consideration.

****

American Studies

1. Change the curricular requirements of **American Studies** (B.A. or B.S.) [**Effective**: Summer 2007]

Required course work includes the university requirements (see regulation J-3), general CLASS requirements for the B.A. or B.S. degree, and:

1. AmSt 201, 301, and a three credit designated upper-division American Studies course or a three credit capstone course in a major area of emphasis; and

2. Completion of one of the following major areas of emphasis:

A. Literature Emphasis

Engl 343-344 Survey of American Literature (6 cr)
Courses selected from the following list (12 cr):
AIST 320 The Celluloid Indian: American Indians in Popular Film (3 cr)
Engl 380 Introduction to U.S. Ethnic Literatures (3 cr)
Engl 427 American Fiction, 1914-1945 (3 cr)
Engl 429 Contemporary Fiction (3 cr)
Engl 441 Introduction to the Study of Language (3 cr)
Engl 470 American Literature to 1830 (3 cr)
Engl 471 American Literature, 1830-1865 (3 cr)
Engl 473 Literature of the American West (3 cr)
Engl 474 American Literature, 1865-1914 (3 cr)
Engl 480 Ethnic and Minority Literature (3 cr)
Engl 483 African American Literature (3 cr)
Engl 484 American Indian Literature (3 cr)
TheF 386 Documentary Film (3 cr)
Courses in history and social science, which include at least 6 cr in each (selected from courses listed under the social science emphasis and from upper-div courses listed under the history emphasis) (18 cr)

B. History Emphasis

Hist 111-112 Introduction to U.S. History (6 cr)
Four courses selected from the following list (12 cr):
Art 302 Modern Art and Theory (3 cr)
Hist 313 Red, White and Black: The Peopling of Early North America (3 cr)
Hist 315 Comparative African-American Cultures (3 cr)
Hist 411 Colonial North America, 1492-1763 (3 cr)
Hist 412 Revolutionary North America and Early National Period, 1763-1828 (3 cr)
Hist 415 Civil War and Reconstruction, 1828-1877 (3 cr)
Hist 416 Rise of Modern America, 1877-1900 (3 cr)
Hist 417 United States, 1900-1945 (3 cr)
Hist 418 Recent America, 1945-Present (3 cr)
Hist 419 Twentieth-Century American West (3 cr)
Hist 420 History of Women in American Society (3 cr)
Hist 422 The American Landscape (3 cr)
Hist 423 Idaho and the Pacific Northwest (3 cr)
Hist 424 American Environmental History (3 cr)
Hist 425 Immigration and Ethnicity in the United States (3 cr)
Hist 428 History of the American West (3 cr)
Hist 430 U.S. Diplomatic History (3 cr)
Hist 431 History of Indian-White Relations (3 cr)
Hist 435 Latin America: The Colonial Era (3 cr)
Hist 438 Modern Mexico and the Americas (3 cr)

Hist 439 Modern Latin America (3 cr)
Hist 440 Social Revolution in Latin America (3 cr)
Hist 441 Comparative Slavery and Emancipation in the Atlantic World (3 cr)
MusH 440 Studies in American Music (3 cr)
~~TheF 419 U.S. Independent Film (3 cr)~~

Courses in literature and social science, which include at least 6 cr in each (selected from courses listed under the social science emphasis and literature emphasis) (18 cr)

C. Social Science Emphasis

Three of the following courses (9 cr):
Anth 329 North American Indians or Hist 431 Hist of Indian-White Relations (3 cr)
~~Geog 240 Economic Geography (3 cr)~~
Geog 330 Urban Geography (3-4 cr)
PolS 235 Political Research Methods and Approaches (3 cr)
Soc 230 Social Problems (3 cr)

Courses from at least two different academic disciplines (at least 12 cr must be upper division) (18 cr):
AIST 401 Contemporary American Indian Issues (3 cr)
Anth 100 Introduction to Anthropology (3 cr)
Anth 422 Plateau Indians (3 cr)
Anth 431 Historical Archaeology (3 cr)
Anth 436 North American Prehistory (3 cr)
Anth 443 Plateau Prehistory (3 cr)
Arch 483 Urban Theory and Issues (3 cr)
Arch 486 American Architecture (2 cr)
Dan 421 Dance History (3 cr)
Econ 201, 202 Principles of Economics or Econ 272 Foundations of Economic Analysis (4-6 cr)
Econ 385 Environmental Economics (3 cr)
Econ 407 Public Finance (3 cr)
Econ 441 Labor Economics (3 cr)
Geog 165 Human Geography (3 cr)
~~Geog 330 Urban Geography (3-4 cr)~~
Geog 360 Population Dynamics and Distribution (3-4 cr)
Jamm 100 Media and Society (3 cr)
Jamm 340 Cultural Diversity and the Media (3 cr)
Jamm 440 Culture and Mass Media (3 cr)
Jamm 445 History of Mass Media (3 cr)
MusH 440 Studies in American Music (3 cr)
Phil 472 Social and Political Philosophy (3 cr)
PolS 275 American State and Local Government (3 cr)
PolS 331 American Political Parties and Elections (3 cr)
PolS 332 American Congress (3 cr)
PolS 333 American Political Culture (3 cr)
PolS 360 Law and Society (3 cr)
PolS 437 American Presidency (3 cr)
PolS 438 Conduct of American Foreign Policy (3 cr)
PolS 467 Constitutional Law (3 cr)
PolS 468 Civil Liberties (3 cr)
Soc 101 Introduction to Sociology (3 cr)
Soc 313 Collective Behavior (3 cr)
Soc 322 Racial and Ethnic Relations (3 cr)
Soc 325 Sociology of the Family (3 cr)
Soc 414 Development of Social Theory (3 cr)
Soc 423 Social Stratification (3 cr)
Soc 424 Sociology of Gender (3 cr)
TheF 386 Documentary Film/Television (3 cr)

Three courses in literature and history, including at least 3 cr in each (selected from the literature and history emphases list) (9 cr)

Art and Design

1. Change the description and title of the following course [**Effective**: Summer 2007]

Art 508 (s) ~~Readings in Art:~~ Critical Theory and Continental Aesthetics (3 cr)
Same as Phil 508. Introduction, examination, and analysis of principal texts and strategies of continental critical theory from Kant to Zizek. Topics to be studied include German aesthetics, phenomenology and hermeneutics, psychoanalysis and feminism, the Frankfurt School, structuralism, poststructuralism, deconstruction, postcolonialism, science studies, and media aesthetics, among others. Open to all graduate students, and to undergraduates with instructor's approval.~~Introduction and examination of principal texts on art and aesthetics from the major figures in Critical Theory and Continental philosophy. Students will be encouraged to address the possible relevancy and application of the various theoretical frameworks within the purview of their own aesthetic and critical disciplines. Open to all graduate students, and to undergraduates with instructor's approval.~~

Biological and Agricultural Engineering

1. Add the following course [**Effective**: Summer 2007]

BAE WS-J465/WS-J565 Surface Hydrologic Processes and Modeling (3 cr) WSU BSysE 456/556

2. Change the co-requisites and prerequisites of the following course [**Effective**: Summer 2007]

BAE 242 Engineering Analysis and Design (2 cr)
Methods of analyzing and solving engineering problems and introduction to elements of design; use of computers in engineering problem solving. Recommended Preparation: BAE 143 or computer science elective in a programming language.
Prereq: Math 170
Coreq: Math 175

3. Change the credits of the following courses [**Effective**: Summer 2007]

BAE 478 Engineering Design I (~~2~~ 3 cr)
May be used as core credit in J-3-d. Intro to design process, CAD/CAM facility, product liability, and project scheduling; formulation of a design problem.
Prereq: Senior standing or Permission

BAE 479 Engineering Design II (~~2~~ 3 cr)
May be used as core credit in J-3-d. Individual or team design of an agricultural related problem; incl synthesis, analysis, construction, and testing; final report reqd. Two 3-hr labs a wk. Recommended Preparation: BAE 478.

4. Change the description of the following courses [**Effective**: Summer 2007]

BAE ID451 Engineering Hydrology (3 cr) WSU BSysE 451
~~Same as~~See CE 421. ~~Hydrologic cycle as applied to engineering projects; hydrograph routing; design hydrographs; intro to hydrologic simulation. Recommended Preparation: BAE 355.~~
Prereq: Engr 335

5. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

BAE ID551 Advanced Hydrology (3 cr) WSU BSysE 550
Principles of the hydrologic cycle ~~in mountainous areas,~~ including precipitation, lower atmosphere, evaporation, fluid mechanics of free surface flow, overland flow, stream flow routing, water transport in porous media, infiltration, groundwater outflow and base flow, stream flow generation, and elements of frequency analysis in hydrology.~~snowmelt, and systems simulation.~~
Prereq: BAE 335; or BAE 450 and Math 310; or Permission

6. Change the number of the following course [**Effective**: Summer 2007]

BAE ~~555~~ 550 Natural Channel Flow (3 cr)
Same as CE 529. Hydraulics of nonuniform flow in irregular channels, unsteady flow, and flow routing.

7. Change the curricular requirements of **Biological and Agricultural Engineering** (B.S.B.A.E.) [**Effective**: Summer 2007]

C. Environmental Engineering Option

~~BAE 432 Bioreactor Theory and Design for Waste Treatment (3 cr)~~
~~BAE 433 Bioremediation (3 cr)~~
~~BAE 452 Environmental Water Quality (3 cr)~~
BAE 461 Bioprocess Engineering (3 cr)
Biol 115 Cells and the Evolution of Life (4 cr)
~~ChE 223 Material and Energy Balances (3 cr)~~
Chem 277 Organic Chemistry I (3 cr)
Chem 278 Organic Chemistry I: Lab (1 cr)
CE 330 Fundamentals of Environmental Engineering (3 cr)
MMBB 250, 255 General Microbiology and Lab (5 cr)
MMBB 380 Introductory Biochemistry (4 cr)
Two electives chosen from the following: (6 cr)
- BAE 432 Bioreactor Theory and Design for Waste Treatment (3 cr)
- BAE 433 Bioremediation (3 cr)
- BAE 452 Environmental Water Quality (3 cr)

Electives to total 128 cr for the degree

Chemistry

1. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

Chem 111 Principles of Chemistry I (4 cr)

May be used as core credit in J-3-b. Full credit may be earned in only one of the following: Chem 100, 101, or 111. Intensive treatment of principles and applications of chemistry. Three lec and~~,~~ one 3-hr lab a week.~~, and one optional recitation a wk.~~ Recommended Preparation: A grade of 'B' or better in a high school chemistry course.
Prereq: Chem 050 or min 560 SAT math or min 25 ACT math or min 49 COMPASS College Algebra, or a grade of 'C' or better in Math 143, 160, or 170; or Permission~~ or adequate score on the chemistry fundamentals exam or satisfy departmental requirement~~

Chem 409 Proseminar (1 cr)
Current publications in chemistry and chemical engineering with reports on typical scientific papers. Preparation of application materials for graduate work and/or careers in chemistry.
Prereq: Chem 372 and junior standing~~Chem 372 and Senior standing~~

Civil Engineering

1. Add the following courses [**Effective**: Summer 2007]

CE 535 Fluvial Geomorphology and River Mechanics (3 cr)
Hydraulic and morphologic processes of rivers. Drainage network development, channel hydraulics and shear stress partitioning via boundary layer theory, hydraulic geometry and cross-sectional form, sediment transport and bed material sampling, reach-scale morphologies and processes from headwater streams to lowland rivers, physical processes of forest rivers, sediment budgets, and river valley evolution. Field exercises emphasize quantitative analysis of fluvial processes and channel form, acquisition of field skills (measuring hydraulic and geomorphic variables, topographic surveying), and scientific writing. (Alt/yrs)
Prereq: CE 428 or Permission

CE 536 Hydropower Systems (3 cr)
Design, construction and operation of low-head, medium and high-head hydropower plants, including run-of-river, storage and pumped storage plants. Design and analysis of hydraulic components, economic analysis, environmental aspects and low impact hydro schemes. (Alt/yrs, Fall only)
Prereq: CE 322, CE 325 or Permission

2. Drop the following courses [**Effective**: Summer 2007]

CE 218 Elementary Surveying (2 cr)
Primarily for nonengineering students. Theory of measurements and manipulation of surveying instruments; application of surveying methods to construction; topographic and land surveys. One lec and one 3-hr lab a wk.
Prereq: Math 143

CE 311 Computer Aided Site Engineering Design (3 cr)
Design of site engineering projects using land development software to analyze engineering problems and create design drawings. Demonstration of computer aided drafting and design (CADD) methods. Three hours lecture per week.
Prereq: CE 211

CE 323 Hydraulics Laboratory (1 cr)
Laboratory exercises on closed conduit flow, hydraulic machinery, open channel flow and mixing process. Ten 1-hr lec, 7 unsupervised lab sessions with hours varying from 2 to 4 hrs each.
Prereq or **Coreq:** CE 322
Coreq: CE 215

GeoE 462 Geotechnical Engineering Design (3 cr)
See CE 460.

GeoE ID536 Slope Stability Analysis (3 cr)
Theory of stability analysis of slopes, landslides, and embankments for soil and rock masses; problem solutions using hand calculations and the latest computer codes; problems explore practical applications in the geotechnical engineering field.

3. Change the description of the following courses [**Effective**: Summer 2007]

CE 115 Introduction to Civil Engineering (2 cr)
Introduction to engineering design process and analysis techniques including problem solving skills, development of software use skills, graphical analysis, data analysis, oral and written communication skills,~~economic decision making, documentation skills,~~ and use of structured programming concepts in designing personal applications.
Prereq: Major in civil engineering

CE 322 Hydraulics (3 cr)
Applied principles of fluid mechanics; closed conduit flow, hydraulic machinery, open channel flow; design of hydraulic systems. Laboratory exercises on closed conduit flow, hydraulic machinery, open channel flow and mixing process. Three lec a week and 4-6 labs a semester.
Prereq: CE 215, Math 310, Phys 211, Engr 220 and 335

CE 325 Fundamentals of Hydrologic Engineering (3 cr)

Same as BAE 355. Principles of hydrologic science and their application to the solution of hydraulic, hydrologic, environmental, and water resources engineering problems.~~; application of principles and measurements of precipitation, evaporation, infiltration, and snowmelt in development of rainfall-runoff models appropriate to various catchment scales for engineering purposes; some emphasis on urban hydrology problems, stormwater management, and mathematical modeling. Some field exercises.~~
Prereq: Math 310, Stat 301, and Engr 335

CE 360 Fundamentals of Geotechnical Engineering (4 cr)
Soil composition, descriptions, and classification systems; permeability and seepage; capillarity and suction; total, effective, and neutral stresses, compression and volume changes; shear strength; compaction. Three lectures, and 2 hours of lab a week.~~Two lec, 2 hrs of lab, and 1 hr of recitation a wk.~~
Prereq: CE 215, Engr 335, Engr 350, and Math 310

CE 421 Engineering Hydrology (3 cr)
~~See~~ Same as BAE ID451. Hydrologic design including: statistical methods, rainfall analysis and design storm development, frequency analysis, peak discharge estimation, hydrograph analysis and synthesis, flow routing, and risk analysis.
Prereq: Engr 335

CE J433/J533 Water Quality Management (3 cr)
Physical, chemical, and biological techniques for analysis of water quality management problems; development of design criteria for corrective systems. Additional projects/assignments reqd for grad cr. ~~Two lec and one 3-hr lab a wk.~~
Prereq: Permission

CE ID&WS-J445/ID&WS-J545 Matrix Structural Analysis (3 cr) WSU C E 531
Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials reqd for grad cr.~~Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, modification procedures. Special project demonstrating mature understanding of materials reqd for grad cr.~~
Prereq: CE 342 or Permission

CE 460 Geotechnical Engineering Design (3 cr)
~~Same as GeoE 462.~~ Applications of soil mechanics in design of earth retaining structures, shallow and deep foundations, embankments, slopes, ~~and~~ excavations, and soil exploration programs.
Prereq: CE 360.

CE 529 Natural Channel Flow (3 cr)
See BAE ~~555~~550.

CE ID561 Engineering Properties of Soils (3 cr) WSU C E 527
Physical properties, compressibility and consolidation, shear strength, compaction, saturated and unsaturated soils, laboratory and field methods of measurement, relations of physical and engineering properties, introduction to critical-state soil mechanics.~~Strength, compressibility, volume stability, and permeability of saturated and unsaturated soils, laboratory and field methods of measurement, relations of physical and engineering properties.~~
Prereq: CE 360

CE ID562 Advanced Foundation Engineering (3 cr) WSU C E 528
Interpretation of in-situ tests for foundation design parameters, bearing capacity and settlement of axially loaded piles, pile groups, and drilled shafts, pile dynamics, laterally loaded deep foundations, downdrag and uplift of deep foundations, foundation load and integrity testing methods and data interpretation, mat foundations.~~Consolidation theories, stress and strain distribution, bearing capacity and settlements of shallow and deep foundations, pile group behavior, theory of subgrade reaction, mat foundations, laterally loaded piles.~~
Prereq: CE 360 or Permission

4. Change the cooperative status and description of the following course [**Effective**: Summer 2007]

CE ~~ID&WS-~~J445/ ~~ID&WS-~~J545 Matrix Structural Analysis (3 cr)~~ WSU C E 531~~
Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials reqd for grad cr.~~Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, modification procedures. Special project demonstrating mature understanding of materials reqd for grad cr.~~
Prereq: CE 342 or Permission

5. Change the credits and description of the following courses [**Effective**: Summer 2007]

CE 330 Fundamentals of Environmental Engineering (~~3~~ 4 cr)
Principles of engineered environmental systems, including physical, chemical, and microbiological processes; types and effects of pollutants; regulations; treatment of water, wastewater, sludges, and solid waste; control of air and agricultural pollution. Three lec and one 3-hr lab a wk.~~Introduction to key concepts of environmental engineering, including ecological, chemical, and microbiological processes; types and effects of pollutants; treatment of water, wastewater, sludges, and solid waste; control of air, noise, and agricultural pollution. Two lec and one 2-hr lab a wk.~~
Prereq: Engr 335, Chem 111, CE 215 and Math 310

CE 357 Properties of Construction Materials (~~3~~ 4 cr)
Principles of construction materials, composition, physical and mechanical properties, ~~and behavior,~~ test methods, data analysis and interpretations, and report writing; materials covered are aggregates, cements, concretes, metals, wood, and ~~polymers~~composites. ~~Two~~ Three lec, and two hrs of lab~~, and 1 hr of recitation a wk~~.
Prereq: CE 215, Engr 350, Math 310
Coreq: Stat 301

6. Change the description and title of the following course [**Effective**: Summer 2007]

CE ID&WS-J422/ID-J522 Hydraulic Structures Analysis and Design~~Hydraulic Design~~ (3 cr) WSU C E 450
Hydraulic design and stability analysis of hydraulic structures, such as dams, weirs, spillways, stilling basins, culverts, levees, fish ladders etc. Project oriented problems.~~Hydraulic design of open channel and closed conduit conveyance structures, control structures, protective structures and systems; project oriented problems.~~ Extra design projects or different design projects for grad cr. One field trip.
Prereq: CE 322 or Equivalent, Engr 360, or Permission

7. Change the title of the following course [**Effective**: Summer 2007]

CE ID522 Hydraulic Structures Analysis and Design~~Hydraulic Design~~ (3 cr)
See CE J422/J522.

8. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

CE 431 Design of Water and Wastewater Systems I (3 cr)
Application of fundamental engineering science to the design of systems for the treatment of domestic and industrial water supplies; treatment and re-use of domestic sewage and industrial wastes. Three lec a wk.~~Application of basic engineering science to treatment of domestic and industrial water supplies; treatment and disposal of domestic sewage and industrial wastes. Two lec and one 3-hr lab a wk.~~
Prereq: CE 322, 330, ~~Engr 335,~~ or Permission

9. Change the prerequisites of the following course [**Effective**: Summer 2007]

CE 526 Aquatic Habitat Modeling (3 cr)
The course objective is to learn the underlying principles of all components required for aquatic habitat modeling, to be able to perform such projects in riverine ecosystems including project design, data collection, data analysis and interpretation of the results and to learn the use of computational aquatic habitat models. Students will be working on their own modeling projects using the simulation model CASiMiR.
Prereq: CE 322 and CE 325 or BAE 355; or Permission

10. Change the cooperative status, description, prerequisites and title of the following courses [**Effective**: Summer 2007]

CE ~~ID~~563 Seepage and Slope Stability~~Earth Dams~~ (3 cr) WSU C E 507
~~See~~ Same as GeoE 535. Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. (Alt/even yrs, Spring only)
Prereq: CE 360 or GeoE 436; or Permission

GeoE ~~ID~~535 Seepage and Slope Stability~~Earth Dams~~ (3 cr) ~~WSU C E 507~~
~~Same as~~See CE 563. (Alt/even yrs, Spring only)~~Principles of earth-dam design, failures, practical considerations in construction; principles governing the flow of water through soils.~~
~~**Prereq:** Permission~~

11. Change the curricular requirements of **Civil Engineering** (B.S.C.E.) [**Effective**: Summer 2007]

To graduate in this program, a minimum grade of C must be earned in all engineering, mathematics, and science courses used to satisfy the curriculum.

Any student majoring in civil engineering may accumulate no more than 14 credits of D or F in mathematics, science, technical elective, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other institutions. A warning will be issued in writing to students who have accumulated 7 credits of D or F in mathematics, science, technical elective, or engineering classes used to satisfy curricular requirements.

Required course work includes the university requirements (see regulation J-3) and:

AmSt 301 Studies in American Culture or Phil 103 Ethics (3 cr)
CE 115 Introduction to Civil Engineering (2 cr)
CE 211 Engineering Measurements (3 cr)
CE 215 Civil Engineering Analysis and Design (2 cr)
CE 322 Hydraulics (3 cr)
~~CE 323 Hydraulics Laboratory (1 cr)~~
CE 325 Fundamentals of Hydrologic Engineering (3 cr)
CE 330 Fundamentals of Environmental Engineering (~~3~~ 4 cr)
CE 342 Theory of Structures (3 cr)

CE 357 Properties of Construction Materials (~~3~~ 4 cr)
CE 360 Fundamentals of Geotechnical Engineering (4 cr)
CE 372 Fundamentals of Transportation Engineering (4 cr)
~~CE 431 Design of Water and Wastewater Systems I (3 cr)~~
~~CE 441 Reinforced Concrete Design or CE 444 Steel Design (3 cr)~~
CE 491 Civil Engineering Professional Seminar (1 cr)
CE 493-494 Senior Design Project (4 cr)
Chem 111 Principles of Chemistry I (4 cr)
Econ 201 Principles of Economics or Econ 202 Principles of Economics, or Econ 272 Foundations of Economic Analysis (3-4 cr)
Engl 317 Technical Writing (3 cr)
Engr 105 Engineering Graphics (2 cr)
Engr 210 Engineering Statics (3 cr)
Engr 220 Engineering Dynamics (3 cr)
Engr 240 Introduction to Electrical Circuits (3 cr)
Engr 320 Engineering Thermodynamics and Heat Transfer (3 cr)
Engr 335 Engineering Fluid Mechanics (3 cr)
Engr 350 Engineering Mechanics of Materials (3 cr)
Engr 360 Engineering Economy (2 cr)
Math 170 Analytic Geometry and Calculus (4 cr)
Math 175 Analytic Geometry and Calculus II (4 cr)
Math 275 Analytic Geometry and Calculus III (3 cr)
Math 310 Ordinary Differential Equations (3 cr)
Phys 211 Engineering Physics I (3 cr)
Stat 301 Probability and Statistics (3 cr)
Two of the following (8-~~10~~ 9 cr):
- Biol 115 Cells and the Evolution of Life (4 cr)
- Chem 112 Principles of Chemistry II or Phys 212 Engineering Physics II (4-5 cr)
- ~~Chem 302/303 Principles of Physical Chemistry & Lab (4 cr)~~
- Geol 111 Physical Geology for Science Majors (4 cr)
- MMBB 154, 155 Introductory Biology of Bacteria and Viruses and Lab (4 cr)

~~Technical electives. To ensure sufficient breadth, technical electives must include at least 9 cr from CE 421, 422, 432, 441 or 444, 460, 473, 474, 475. Technical electives taken for breadth must be in at least two disciplines (i.e. 42x, 43x, 44x, 46x, or 47x). (12 cr)~~

Technical electives. To ensure sufficient breadth, technical electives must include at least 15 credits from at least three of the following five groups (18 cr):

Environmental:
- CE 431 Design of Water and Wastewater Systems I (3 cr)
- CE 432 Design of Water and Wastewater Systems II (3 cr)
- CE 433 Water Quality Management (3 cr)

Geotechnical:
- CE 460 Geotechnical Engineering Design (3 cr)
- GeoE 436 Geological Engineering Analysis and Design (3 cr)

Hyd/Water Resources:
- CE 421 Engineering Hydrology (3 cr)
- CE 422 Hydraulic Design (3 cr)
- CE 428 Open Channel Hydraulics (3 cr)

Structures:
- CE 441 Reinforced Concrete Design (3 cr)
- CE 444 Steel Design (3 cr)
- CE 445 Matrix Structural Analysis (3 cr)

Transportation:
- CE 473 Highway Design (3 cr)
- CE 474 Traffic Systems Design (3 cr)
- CE 475 Pavement Design and Evaluation (3 cr)

Other CE 400 level classes, or approved alternatives, may be used to complete the required 18 cr of tech electives.

Humanities and social sciences electives to satisfy UI core requirements listed in J-3.

The minimum number of credits for the degree is 128, excluding math below 170, English below 102, and any classes needed to remove deficiencies.

Computer Science

1. Add the following courses [**Effective**: Summer 2007]

CS 105 Computer Science as a Profession (2 cr)

Introduction to the computer science profession and curriculum; fields of study available; current topics in departmental research; curriculum planning; legal, ethical, and social issues in computing; academic ethics and responsibilities.

CS J411/J511 Parallel Programming (3 cr)

Analysis, mapping, and the application of parallel programming software to high-performance systems; the principles of spatial- and temporal-locality of data memory hierarchies in performance tuning; architectural considerations in the design and implementation of a parallel program; the tradeoff between threaded (shared memory) and message-passing (distributed memory) programming styles and

performance. Additional projects/assignments required for graduate credit. Recommended Preparation: Proficiency in programming using a modern language such as C or C++.
Prereq: CS 395

CS J412/J512 Parallel Algorithms (3 cr)
Parallel algorithm design; formal analysis of parallel algorithmic complexity; measures of parallel efficiency; relationship between algorithmic structure and parallel mapping strategies; the consequences of spatial- and temporal-locality. Additional projects/assignments required for graduate credit.
Prereq: CS 395

CS 578 Neural Network Design (3 cr)
See ECE 578.

2. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

CS 112 Introduction to Problem Solving and Programming (3 cr)
May be used as core credit in J-3-c. May not be taken for credit after CS 120.~~Carries 2 credits after CS 120.~~ Intro to fundamental problem solving techniques using the computer; use of a programming language, structured programming concepts; use of fundamental data types, including arrays and structures; basic concepts of computer organization, editing, and program execution; programming lab in which the student solves problems using C++.
Prereq: Math 108 or sufficiently high ACT, SAT, or Math Placement Test score to qualify for Math 143

CS 383 Software Engineering I (3 cr)
Current topics in development of software systems; software life cycle model, requirements definition, requirements analysis, software specification, software architectural design, engineering discipline in software development, software measurement, user interface design, legal and ethical issues in software product development. Projects are developed to demonstrate application of concepts.~~design, verification and validation, and project management techniques.~~
Prereq: CS 210, 240 and 270 or Permission

3. Change the description of the following courses [**Effective**: Summer 2007]

CS 384 Software Engineering II (3 cr)
Continuation of CS 383, Current topics in development of software systems; software detailed design, coding and implementation, unit and integration testing, documentation, software release and support, software engineering measurement, software project management, legal and ethical issues in software product development. Projects are developed to demonstrate application of concepts.~~Individual projects are developed.~~
Prereq: CS 383

CS J451/J551 Advanced Computer Architecture (3 cr)
~~CS 551 s~~Same as ECE J441/J541. Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.
Prereq: CS 150, Stat 301 or Permission

4. Change the curricular requirements of **Computer Science** (B.S.C.S.) [**Effective**: Summer 2007]

Required course work includes the university requirements (see regulation J-3) and:

Comm 101 Fundamentals of Public Speaking (2 cr)
CS 105 Computer Science as a Profession (2 cr)
CS 120 Computer Science I (4 cr)
CS 121 Computer Science II (4 cr)
CS 150 Computer Organization and Architecture (3 cr)
CS 210 Computing Languages (3 cr)
CS 240 Computer Operating Systems (3 cr)
CS 270 System Software (3 cr)
CS 383 Software Engineering I (3 cr)
CS 384 Software Engineering II (3 cr)
CS 401 Contemporary Issues in Computer Science (1 cr)
CS 385 Theory of Computation (3 cr)
CS 395 Analysis of Algorithms (3 cr)
CS 445 Compiler and Translator Design (4 cr)
CS 481 Senior Capstone Design (4 cr)
Engl 317 Technical Writing (3 cr)
Math 170 Analytic Geometry and Calculus I (4 cr)
Math 175 Analytic Geometry and Calculus II (4 cr)
Math 176 Discrete Mathematics (3 cr)
Math 330 Linear Algebra (3 cr)
Stat 301 Probability and Statistics (3 cr)
One of the following laboratory science sequences (8-9 cr):
- Biol 115 Cells and the Evolution of Life and Biol 116 Organisms and Environments (8 cr)
- Chem 111 Principles of Chemistry I and Chem 112 Principles of Chemistry II (9 cr)
- Phys 211 Engineering Physics I and Phys 212 Engineering Physics II (8 cr)

Phys 211 Engineering Physics I and Phys 213 Engineering Physics III (8 cr)
Upper-division technical electives selected to satisfy the credit distribution in these categories (15 cr):
Computer Science (12 cr) – any upper-division CS course except 499. .
Mathematics (3 cr) – Math 275 or any upper-division Math or Stat course except Math 400, 404, 499, and 513-519.
Science electives (4 cr)
The minimum number of credits for the degree is 128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

Students majoring in computer science must earn a grade of C or better, with a 2.50 GPA or higher, in CS 120, 121, and 150 and a C or better in Math 176 before registration is permitted in 200 level CS courses. Students majoring in computer science must earn a grade of C or better in CS 210, 240, 270, and Math 170 and 175 before registration is permitted in upper-division CS courses.

Students must consult with their advisors when selecting electives within the curriculum to insure that their career objectives are met.

Conservation Social Sciences

1. Add the following course [**Effective**: Summer 2007]

CSS 582 Natural Resource Policy (3 cr)
See Pols 562.

2. Change the curricular requirements of **Resource Recreation & Tourism** (B.S.Res.Rc.) [**Effective**: Summer 2007]

A total of 128 credits is required for the degree. This includes the university requirements (see regulation J-3), and the course work listed below. Students must select any academic minor (including those in the Department of Conservation Social Sciences). Students are also required to do an advisor-approved internship and attend one, two-week long field studies course during summer session. Special fees are required for this and a few other courses. To graduate a student must earn an average GPA of 2.30 or higher in all CSS courses.

Required Course work includes the university requirements (see regulation j-3) and:

Biol 115 Cells and the Evolution of Life (4 cr)
Chem 101 Introduction to Chem I or Chem 111 Principles of Chem I or Geol 101 Physical Geology (4 cr)
Comm 101 Fundamentals of Public Speaking or one semester of a foreign language (2-4 cr)
Econ 202 or 201 Principles of Economics (3 cr)
For/Rnge/WLF 221 Ecology (3 cr)
~~For 320 Dendrology or LArc 288 Plant Materials I or Rnge 353 Rangeland Plant Ident and Ecology or PlSc 205 General Botany (3-4 cr)~~
For 375 ~~Airphoto Interpretation and Mapping~~Introduction to Spatial Analysis for Natural Resource Management or LArc 395 GIS in Land Planning or Geog 385 GIS Primer (3 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry or 160 Survey of Calculus or 170 Survey of Calculus II (3-4 cr)
NR 101 Exploring Natural Resources (taken simultaneously with CSS 287) (1 cr)
PolS 101 Intro to Political Science and American Government (3 cr)
PolS 462 Natural Resource Policy or PolS 364 Politics of the Environment or For 484 Forest Policy and Administration (2-3 cr)
CSS/For 235 Society and Natural Resources (3 cr)
CSS 287 Foundations of Conservation Leadership and Management (taken simultaneously with NR 101) (2 cr)
CSS 304 Conservation Social Sciences Field Studies (3 cr)
CSS 310 Social Research Methods in Conservation (4 cr)
CSS 383 Resource Economics for Environmental Policymaking or Econ 385 Environmental Economics (3 cr)
CSS 385 Conservation Management and Planning I (3 cr)
CSS 386 Conservation Management and Planning II (3 cr)
CSS 387 Environmental Communication Skills (3 cr)
CSS/For/Rnge/WLF/Fish/ForP 470 Interdisciplinary Natural Resource Planning (3 cr)
CSS 489 Personalities and Philosophies in Conservation (2 cr)
CSS 481 Conservation Leadership (3 cr)
~~CSS 498 Internship (6-9 cr)~~
Stat 251 Statistical Methods (3 cr)
One of the following (2-4cr):
For 320 Dendrology (3 cr)
LArc 288 Plant Materials I (3 cr)
PlSc 205 General Botany (4 cr)
Rnge 353 Rangeland Plant Ident and Ecology (3 cr)
Rnge 452 Western Wildland Landscapes (2 cr)
Two of the following (6 cr):
Anth 100 Introduction to Anthropology (3 cr)
Psyc 101 Introduction to Psychology (3 cr)
Soc 101 Introduction to Sociology (3 cr)
One writing course, such as Engl 207, 208, 209, 313, 316, 317 (3 cr)
14-15 credits~~Three of the following social science elective courses~~ (if not chosen above) from the following, in at least 2 disciplines with at least 2 courses in one~~, from a total of two~~ discipline:~~s~~ ~~(9 cr)~~
Anth 329 North American Indians (3 cr)
Anth 410 Research Methods in Anthropology (3 cr)
Anth 428 Social and Political Organization (3 cr)
Anth 462 Human Issues in International Development (3 cr)
Arch 483 Urban Theory and Issues (3 cr)

Arch 486 American Architecture (2 cr)
Comm 433 Organizational Comm. Theory and Research (3 cr)
CSS 486 Public Involvement in Natural Resource Management (3 cr)
CSS 487 Environmental Education (3 cr)
CSS 490 Wilderness and Protected Area Management (3 cr)
CSS 493 International Land Preservation and Conservation Systems (3 cr)
CSS 494 Public Relations for Natural Resources Professionals (3 cr)
CSS 498 Internship (3-6 cr)
Econ 385 Environmental Economics (3 cr)
Econ 407 Public Finance (3 cr)
Econ 441 Labor Economics (3 cr)
Econ 447 Economics of Developing Countries (3 cr)
EnvS 479 Introduction to Environmental Regulations (3 cr)
EnvS 482 Natural Resource Policy and Law (3 cr)
For 408 Community/Urban Forestry (2 cr)
For 484 Forest Policy and Administration (2 cr)
Geog 330 Urban Geography (3-4 cr)
Geog 350 Geography of Development (3-4 cr)
Geog 360 Population Dynamics and Distribution (3-4 cr)
Hist 422 The American Landscape (3 cr)
Hist 424 American Environmental History (3 cr)
Jamm 350 Public Relations Writing and Production (3 cr)
Jamm 444 Communication and Public Opinion (3 cr)
Jamm 452 Public Relations Campaign Design (3 cr)
Jamm 458 Public Relations Case Studies and Issues Mgmt (3 cr)
Phil 452 Environmental Philosophy (3 cr)
Phil 472 Social and Political Philosophy (3 cr)
PolS 275 American State and Local Government (3 cr)
PolS 333 American Political Culture (3 cr)
PolS 364 Politics of the Environment (3 cr)
PolS 428 American Political Thought (3 cr)
PolS 439 Public Policy (3 cr)
PolS 440 International Organizations and Law (3 cr)
PolS 451 Public Administration (3 cr)
PolS 454 Public Organization Theory (3 cr)
PolS 461 Western Environmental Legal History (3 cr)
PolS 462 Natural Resource Policy (3 cr)
PolS 480 Politics of Development (3 cr)
Psyc 305 Developmental Psychology (3 cr)
Psyc 320 Introduction to Social Psychology (3 cr)
Psyc 325 Cognitive Psychology (3 cr)
Soc 313 Collective Behavior (3 cr)
Soc 414 Development of Social Theory (3 cr)
Soc 423 Social Stratification (3 cr)
Soc 424 Sociology of Gender (3 cr)
Electives to total 128 cr for the degree

Electrical and Computer Engineering

1. Drop the following courses [**Effective**: Summer 2007]

ECE 401 Advanced Circuit Theory (3 cr)
Passive and active electrical networks; frequency response and complex frequency domain analysis, includes pole-zero considerations, root locus, and sensitivity functions. Recommended Preparation: ECE 212 and 213.

ECE J414/J514 Analog Integrated Circuit Analysis and Design (3 cr)
Extension of biasing and signal analysis, active current sources and loads, frequency response analysis and compensation techniques and analysis of currently available integrated circuits. Additional projects/assignments reqd for grad credit. (Alt/yrs)
Prereq: ECE 310

ECE 514 Analog Integrated Circuit Analysis and Design (3 cr)
See ECE J414/J514.

ECE 548 Supercomputing (3 cr)
A perspective of supercomputing from Von Neumann machines to data flow machines; multiprocessors, multicomputers, multivector, multithreaded, superscalar, VLIW, and super pipelined architectures; memory organization; interconnection networks; and parallel languages and compilers.
Prereq: Computer architecture course and skills in at least one computer language, or Permission

ECE 560 Semiconductor Theory (3 cr)
Fundamental theory and behavior of modern semiconductor devices.

2. Change the description, joint list status and title of the following course [**Effective**: Summer 2007]

ECE J441/J541 Advanced Computer ~~Organization~~ Architecture (3 cr)
~~Register and processor level design of computer systems including the design of the ALU, CPU controller, memory arrays, virtual memory, cache, I/O interfaces and interrupt structures; techniques for analyzing system performance; organization of computer networks.~~ See CS J451/J551.
Prereq: ECE 240

3. Change the description of the following courses [**Effective**: Summer 2007]

ECE 541 Advanced Computer Architecture (3 cr)
See ~~CS J451/J551.~~ECE J441/J541.

ECE 578 Neural Network Design (3 cr)
Same as CS 578 and ME 578. Same as ME 578 and CS 578. Introduction to neural networks and problems that can be solved by their application; introduction of basic neural network architectures; learning rules are developed for training these architectures to perform useful functions; various training techniques employing the learning rules discussed and applied; neural networks used to solve pattern recognition and control system problems.~~Introduction to neural networks and problems that can be solved by their application; introduction of basic neural network architectures; learning rules are developed for training these architectures to perform useful functions; various training techniques employing the learning rules discussed and applied; neural networks used to solve pattern recognition and control system problems.~~
Prereq: Permission

4. Change the prerequisites and title of the following course [**Effective**: Summer 2007]

ECE J412/J512 Analog Filter Design~~Active Filters~~ (3 cr)
Second order, Butterworth, Chebychev, Elliptic and Bessel filter functions and active realizations for highpass, lowpass, bandpass, notch and all-pass filters; frequency and impedance scaling; frequency transformations; phase and group delay; filter sensitivity to passive and active elements; introduction to switched capacitor filters. Additional projects/assignments reqd for grad cr.
Prereq: ECE 310~~401 or 410~~ or Permission

5. Change the title of the following course [**Effective**: Summer 2007]

ECE 512 Analog Filter Design~~Active Filters~~ (3 cr)
See ECE J412/J512.

6. Change the description and title of the following courses [**Effective**: Summer 2007]

ECE J415/J515 ~~CMOS Analog Electronics~~ Analog Integrated Circuit Design (3 cr)
Analog integrated circuit analysis, design, simulation, and layout, advanced biasing techniques, voltage references, operational amplifiers, compensation techniques, and comparators. Additional projects/assignments required for graduate credit.~~CMOS technology, modeling and subcircuits plus amplifier, comparator and converter analysis and design. Additional projects/assignments reqd for grad cr.~~
Prereq: ECE 410 or Permission

ECE 432 ~~Applications of Electromagnetic Theory~~Propagation of Wireless Signals (3 cr)
Maxwell's Equations, including Poynting's vector and Poynting's theorem; Wave equation with solutions, Helmholz equation, plane waves; Reflection and refraction; Theory of guided waves, ray theory and mode theory; Atmospheric and ionospheric effects on wave propagation; Multipath effects and fading; Ground waves and surface waves. Course will be offered every third semester.~~Maxwell's Equations; Poynting's vector and Poynting's Theorem; wave equation with solutions (vector and scalar, homogeneous and inhomogeneous), Helmholz equation; plane waves, reflection and refraction; introduction to classical electrodynamics, radiation from accelerated charges; introduction to antenna theory; transmission lines; waveguides and fiber optics; topics in wave propagation (microwave communication systems, wave propagation through the atmosphere, ionosphere, and magnetosphere, etc.).~~
Prereq: ECE 330 or Permission

ECE 515 CMOS Analog Integrated Circuit Design~~Analog Electronics~~ (3 cr)
See ECE J415/J515.

7. Change the description, prerequisites and title of the following course [**Effective**: Summer 2007]

ECE 521 Power System Stability~~Planning and Resources~~ (3 cr)
Understanding, modeling, and analysis of power system transient and voltage stability; techniques for improving power system stability; use of computer tools. (Alt/yrs)~~Major decision-making and economic factors in electrical energy systems, planning and resource selection; hydroelectric, nuclear, and fossil fuel plants, steady-state and transient stability, reliability, voltage levels, economic choices, and future resource potential.~~
Prereq: ECE ~~423~~ 520 or Permission

8. Change the prerequisites of the following course [**Effective**: Summer 2007]

ECE 340 Microcontrollers (3 cr)
Introduction to use of embedded microcontrollers and microprocessors; processor architecture; assembly language programming; use of development systems and/or emulators for system testing and debugging; software and hardware considerations of processor interfacing for I/O and memory expansion; programmed and interrupt driven I/O techniques. Three lec a wk.

Prereq: ECE 240, ECE 241, and CS 112 or CS 120
Coreq: ECE 341

ECE 480 EE Senior Design I (3 cr)

The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 240, 241, 310, 311, 320, 321, 340, 341, 350, 351 and Stat 301, or Permission

ECE 481 EE Senior Design II (3 cr)

May be used as core credit in J-3-d. The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 330, 331~~, 350, 351,~~ and 480, or Permission

ECE 483 Computer Engineering Senior Design II (3 cr)

May be used as core credit in J-3-d. The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 440 and 482; or~~350, 351, 482, and CS 383 or~~ Permission

9. Change the co-requisites and prerequisites of the following courses [**Effective**: Summer 2007]

ECE 482 Computer Engineering Senior Design I (3 cr)

The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: CS 240, 270, ECE 240, 241, 310, 311, 340, 341, 350, 351~~440~~ and Stat 301; or Permission
Coreq: ECE 440

10. Change the curricular requirements of Electrical Engineering (B.S.E.E.) [**Effective**: Summer 2007]

Required course work includes the university requirements (see regulation J-3) and:

AmSt 301 or Phil 103 (3 cr)
Chem 111 Principles of Chemistry I (4 cr)
CS 112 Introduction to Problem Solving and Programming or CS 120 Computer Science I (3-4 cr)
ECE 101 Foundations of Electrical and Computer Engineering (2 cr)
ECE 210, 211 Electrical Circuits I and Lab (4 cr)
ECE 212, 213 Electrical Circuits II and Lab (4 cr)
ECE 240 Digital Logic (3 cr)
ECE 241 Logic Circuit Lab (1 cr)
ECE 292 Sophomore Seminar (0 cr)
ECE 310 Fundamentals of Electronics (3 cr)
ECE 311 Fundamentals of Electronics Lab (1 cr)
ECE 320 Energy Systems I (3 cr)
ECE 321 Energy Systems I Lab (1 cr)
ECE 330 Electromagnetic Theory (3 cr)
ECE 331 Electromagnetics Lab(1 cr)
ECE 340 Microcontrollers (3 cr)
ECE 341 Microcontrollers Lab (1 cr)
ECE 350 Signals and Systems Analysis (3 cr)
ECE 351 Signals and System Lab (1 cr)
ECE 480-481 EE Senior Design I and II (6 cr)
ECE 491 Senior Seminar (0 cr)
Econ 201 or 202, or 272 (3-4 cr)
Engr 210 Engineering Statics (3 cr)
Engr 220 Engineering Dynamics (3 cr)
Engr 360 Engineering Economy (3 cr)
Engl 317 Technical Writing (3 cr)
Math 170 Analytic Geometry and Calculus I (4 cr)
Math 175 Analytic Geometry and Calculus II (4 cr)
Math 275 Analytic Geometry and Calculus III (3 cr)
Math 310 Ordinary Differential Equations (3 cr)
Math 330 Linear Algebra (3 cr)
Phys 211, 212 Engineering Physics I-II (8 cr)
Stat 301 Probability and Statistics (3 cr)

Upper-division engineering science elective chosen from Engr 320, 335, 350, or CE 402 (3 cr)
Technical electives taken from upper-division Engineering, Math, Physics, and Computer Science courses. Of these eighteen credits a minimum of twelve credits must be selected from electrical engineering courses including at least nine credits from the follow courses: ECE 410, 420, 430, 440, 450 and 460. (18 cr)

The minimum number of credits for the degree is128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

Students majoring in electrical engineering must earn a grade of P in ECE 292 and a grade of C or better in each of the following courses before registration is permitted in upper-division electrical and computer engineering courses: Chem 111, CS 112 or 120, ECE 210, 211, 212, 213, 240 and 241; Engr 210, and 220; Math 170, 175, 275, and 310; and Phys 211, 212. Students majoring in electrical engineering or computer engineering must meet the college requirements for admission to classes (see "Admission to Classes" under College of Engineering, part four).

Any student majoring in electrical engineering may accumulate no more than a total of 14 credits of D's and F's in mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single course or single repeats in multiple courses and courses transferred from other institutions.

Within the constraints on choice of technical electives noted above, students may choose sets of electives to develop proficiencies in certain areas of emphasis. Three such areas are currently available, one in communications, one in integrated circuit design, and one in power. The course requirements for each of these areas are described below.

The **Communications** emphasis prepares students for a variety of careers in the communications industry. Students should take a total of 18 credits from the following: (a) core courses: 9 credits from ECE 410, 430, 450, and (b) technical electives: 9 credits from ECE 413, 432, 445, 452, 455.

The **Integrated Circuit Design** emphasis prepares students for careers in the field of integrated circuit design. It includes courses in analog and digital integrated circuit at both the system and transistor level. Students should take a total of 18 credits from the following: (a) core courses: 13 credits from ECE 410, 411, 415, 445, 486 and (b) technical electives: 3 credits from ECE 412/512, 413/513, 414/514, 416, 417, 440, 452, 470, 476.

The **Power** emphasis prepares students for a variety of careers with electric utilities, consulting firms, and with manufacturing and design firms. Students should take a total of 18 credits from the following: (a) 12 credits: ECE 420, 423, 427 and 450, and (b) 3 core credits from: 410, 430, 440, and (c) 3 additional credits of technical electives.

Environmental Science

1. Add the following course [**Effective**: Summer 2007]

EnvS 588 Research Methods in Environmental Science (2 cr)
This is an interdisciplinary course in conducting research in the environmental field including methods from the physical, biological, and social sciences. It includes creating the research questions, developing methods, collecting and analyzing data, drawing conclusions, and publishing and presenting the results. (Alt/yrs, Spring only)
Prereq: Stat 251 or Permission

Fish and Wildlife Resources

1. Drop the following courses [**Effective**: Summer 2007]

Fish 290 Fish and Wildlife Ecology, Management, and Conservation (3 cr)
Same as WLF 290. Open to non-majors only. Application of biological and ecological principles and concepts to conservation and management of fish and wildlife populations and their habitats.

WLF 290 Fish and Wildlife Ecology, Management, and Conservation (3 cr)
Same as Fish 290. Open to non-majors only. Application of biological ecological principles and concepts to conservation and management of fish and wildlife populations and their habitats.

WLF 445 Nongame Management (2 cr)
Review of principles, methodology, and concepts applied to management and conservation of nongame wildlife in relation to current land-use practices. (Irregular offering)
Prereq: For/Rnge 221 and Junior standing, or Permission

2. Change the prerequisites of the following courses [**Effective**: Summer 2007]

Fish 316 Principles of Population Dynamics (2 cr)
Basic principles of population ecology of animals. Taught first half of semester. (Spring only)
Prereq: Fish 314 and Fish 315 with a grade of 'C' or better and For/Rnge 221 or Biol 314; or Permission

WLF 316 Wildlife Ecology II (4 cr)
Application of principles of ecology to conservation and management of wildlife in natural and altered habitats. Three lec and one lab a wk; three days of field trips. (Spring only)
Prereq: WLF 314 and 315 with a grade of 'C' or better; or Permission

3. Change the description of the following course [**Effective**: Summer 2007]

WLF 315 Wildlife Ecology I Laboratory (1 cr)
Techniques associated with wildlife research and local habitats and areas where wildlife species are present. Three hours of lab a week. One weekend field trip required. Two additional animal trapping sessions also required. (Fall only)
Prereq or **Coreq:** WLF 314

4. Change the curricular requirements of **Wildlife Resources** (B.S.Wildl.Res.) [**Effective**: Summer 2007]

Students pursuing a B.S. in wildlife resources must have received a grade of C or better in each of the following four indicator courses to register in fish- and wildlife-prefixed upper-division courses and to graduate with a B.S. in wildlife resources: Biol 116 and 213, Stat 251, and For/Rnge 221.

To graduate, a student must receive a grade of C or better in each fish- and wildlife-prefixed upper-division course listed in the requirements for the B.S. in wildlife resources.

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years
Biol 115 Cells and the Evolution of Life (4 cr)
Biol 116 Organisms & Environments (4 cr)
Biol 213 Principles of Biological Structure and Function (4 cr)
~~Biol 341 Systematic Botany or For 320 Dendrology or Rnge 353 Rangeland Plant Identification and Ecology (3 cr)~~
Chem 101 Introduction to Chemistry I (4 cr)
Chem 275 Carbon Compounds or Chem 277 Organic Chemistry I (3 cr)
Comm 101 Fundamentals of Public Speaking (2 cr)
Econ 202 Principles of Economics (3 cr)
For/Rnge 221 Ecology (3 cr)
For/CSS 235 Society and Natural Resources (3 cr)
Geol 101 Physical Geol or Soil 205, 206 The Soil Ecosystem and Lab (4 cr)
Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
NR 101 Exploring Natural Resources (1 cr)
Stat 251 Statistical Methods (3 cr)
WLF 102 The Fish and Wildlife Professions (1 cr)
One of the following (3 cr):
- Biol 341 Systematic Botany (3 cr)
- For 320 Dendrology (3 cr)
- Rnge 353 Rangeland Plant Identification and Ecology (3 cr)

Third and Fourth Years
AVS 371 Anatomy and Physiology (4 cr)
~~Engl 208 Personal and Exploratory Writing, Engl 317 Technical Writing, or Comm 431 Professional Presentation Techniques (3 cr)~~
~~For 383 Economics for Natural Resource Managers, AgEc 451 Land and Natural Resource Economics, or Econ 385 Environmental Economics (3 cr)~~
Gene 314 General Genetics or Biol 210 Genetics (3-4 cr)
Phys 100 Fundamentals of Physics or Phys 111 General Physics I (4 cr)
WLF 314, 315 Wildlife Ecology I and Lab (4 cr)
WLF 316 Wildlife Ecology II (4 cr)
WLF 440 Conservation Biology (3 cr)
WLF 448 Fish and Wildlife Population Ecology (4 cr)
WLF/For 470 Interdisciplinary Natural Resource Planning (3 cr)
WLF 492 Wildlife Management (4 cr)
WLF 495 Wildlife Seminar (1 cr)
One of the following (3 cr):
- Comm 431 Professional Presentation Techniques (3 cr)
- Engl 208 Personal and Exploratory Writing (3 cr)
- Engl 317 Technical Writing (3 cr)

One of the following (3 cr):
- AgEc 477 Law, Ethics, and the Environment (3 cr)
- Econ 385 Environmental Economics (3 cr)
- For 383 Economics for Natural Resource Managers

Restricted electives, choose two courses from the following (must receive a grade of C or better):
- Biol 481 Ichthyology (4 cr)
- Biol 483 Mammalogy (3 cr)
- Biol 484 Invertebrate Zoology (4 cr)
- WLF 482 Ornithology (4 cr)

Approved work experience in major field required
Electives to total 128 credits for the degree

Foreign Language and Literatures

1. Add the following course [**Effective**: Summer 2007]

Span 104 Elementary Spanish Transition (4 cr)
Credit not given for Span 104 after Span 101 or Span 102. Not open to students who have completed Span 101 or equivalent in college. Intensive, web-assisted Elementary Spanish course intended for students with some previous study of Spanish. Review and practice of the subject matter covered in Span 101 and 102: pronunciation, vocabulary, reading, listening, speaking, and functional grammar. Recommended Preparation: One-two years of high school Spanish or equivalent experience.

2. Change the description and dormant status of the following course [**Effective**: Summer 2007]

Span 412 Spanish Short Fiction (3 cr)
A survey of the short story in Spain from the 19th Century to the present. Focus on major writers and representative movements and styles. (Fall only)~~The short story in 19th- and 20th-century Spain.~~
Prereq: Span 302 or Permission

3. Change the description of the following courses [**Effective**: Summer 2007]

Span 101 Elementary Spanish I (4 cr)
May be used as core credit in J-3-d. Credit not given for Span 101 after 104 with the exception of vertical credit (see Regulation I-2-d). Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar. Students who have completed one or more high school units in Spanish may not enroll in Span 101 but may earn credit for Span 101 by successfully completing a higher vertically related course.

Span 102 Elementary Spanish II (4 cr)
May be used as core credit in J-3-d. Credit not given for Span 102 after 104. Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar.

Forest Products

1. Drop the following course [**Effective**: Summer 2007]

ForP ID433 Forest Tractor System Analysis (3 cr) WSU NATRS 433
Planning, layout, and cost analysis of forest tractor systems, production estimating, machine capabilities, and options; layout project. Three days of field trips. Recommended Preparation: ForP 430 or Equivalent (Spring, Alt/yrs)
Recommended Equivalent Course: ForP 434

2. Change the description and title of the following course [**Effective**: Summer 2007]

ForP 444 ~~Lumber~~ Primary Wood Products Manufacturing (3 cr)
Raw materials, procurement, production methods, drying product specifications, and grading for primary wood products including lumber, plywood, poles, and cedar products;~~sawn wood products;~~ plant layout, machines, and systems analysis; plant tours. Two lec and one 5-hr lab a wk. Recommended Preparation: ForP 277. (Spring only)

3. Change the prerequisites of the following course [**Effective**: Summer 2007]

ForP 495 Product and Process Development and Commercialization (3 cr)
May be used as core credit in J-3-d. Principles of product planning, development and commercialization; concept testing; product-life cycle management; portfolio analysis; targeting and positioning; team management; and implementing product decisions. (Fall only)
Prereq: Econ 201 or 202 or 272

4. Change the co-requisites, credits, description, prerequisites and title of the following course [**Effective**: Summer 2007]

ForP ID434 Forest Tractor and Cable Systems ~~Analysis~~ (~~3~~ 4 cr) WSU NATRS 434
Planning, layout and design for forest tractor and cable timber harvesting systems; analysis of mechanics and forces involved in equipment and movement of logs; determination of machine capabilities; production and cost estimation; layout and design project.~~Layout, planning, and design for cable logging systems; analysis of forces involved in cable logging; crew and terrain requirements; layout and design project; cost and equipment analysis.~~ Three 1-day field trips. (Spring, Alt/yrs)
Prereq: Phys 111 or 211, and ForP 430 or ~~Equivalent~~ Permission
Coreq: ForP 430

5. Change the co-requisites, description, prerequisites and title of the following courses [**Effective**: Summer 2007]

ForP ID431 Forest Operations and Investment Analysis~~Production and Cost Control in Forest Industry~~ (3 cr) WSU NATRS 439
Intro to production planning and cost control in forest operations; development of cost equations for investment and operational analysis; financial analysis of long term forestry decisions; cash flow in forest operations; breakeven analysis.~~for timber harvesting and forest products processing operations; development and application of machine rates and system production rates; breakeven analysis; machine replacement; cash flow in investment decisions; use of microcomputers in analysis.~~ (Alt/yrs, Spring only)~~Fall, Alt/yrs)~~
Prereq or **Coreq:** ForP 430 or Permission

ForP ID432 ~~Low Volume~~Designing Forest Access~~Roads~~ (3 cr) WSU NATRS 432

Classification of forest roads and trails; forest road and trail design; design for drainage that meets standards;~~Road classification; design of forest roads;~~ construction techniques; costing, environmental considerations, design project. Three days of field trips. Recommended Preparation: ForP 430. (Spring, Alt/yrs)
Prereq or **Coreq:** ForP 430 or Permission

6. Change the title of the following course [**Effective**: Summer 2007]

ForP 230 Field Measurement for Forest Operations~~Harvesting Field Measurements~~ (2 cr)
Evaluation and quantification of harvesting impacts on forest systems; public land surveying, land measurements, resource impact measurements and evaluation. Two lec and one 3-hr lab a wk for 10 wks. Recommended Preparation: Math 143 or Equivalent (Fall only)

7. Change the curricular requirements of **Timber Harvesting Minor** [**Effective**: Summer 2007]

ForP 230 Field Measurements for Forest Operations~~Harvesting Field Measurements~~ (2 cr)
ForP 277 Wood Anatomy and Identification (3 cr)
ForP 430 Forest Engineering and Harvesting (3 cr)
Four of the following (12 cr)
For 424 Forest Dynamics and Management or For 462 Watershed Science and Management (3-4 cr)
ForP 431 Forest Operations and Investment Analysis~~Production and Cost Control in Forest Industry~~ (3 cr)
ForP 432 Designing Forest Access~~Low Volume Forest Roads~~ (3 cr)
~~ForP 433 Forest Tractor System Analysis (3 cr)~~
ForP 434 Forest Tractor and Cable Systems ~~Analysis~~ (~~3~~ 4 cr)
~~ForP 439 Operational Analysis in Timber Harvesting (3 cr)~~
ForP 444 ~~Lumber~~ Primary Wood Products Manufacturing (3 cr)

8. Change the curricular requirements of **Forest Products** (B.S.For.Prod.) [**Effective**: Summer 2007]

B. Forest Operations Option

This option prepares students to work as managers and planners who are responsible for forest operations that achieve sustainable management objectives in forest products companies, forest engineering consulting firms, and government agencies. The program provides background in development and design of efficient harvesting operation plans and timber sales, protection of environmental values from forest operations, supervision of logging crews, design and layout of forest roads, wood procurement, and implementations of forest health restoration projects. Specific career areas include forest operations forester, woodland manager, wood appraisal and procurement, harvesting planning and administration, timberland manager, and forest engineer. Other positions can be found in the areas of equipment development and marketing and as technical representatives for equipment companies or as independent logging contractors. Beyond the courses required in the basic sciences and forest operations, students may choose course work that will also emphasize natural resource management or technology and engineering.

Biol 115 Cells and the Evolution of Life (4 cr)
Chem 101 Introduction to Chemistry I (4 cr)
Comm 101 Fundamentals of Public Speaking (2 cr)
CSS/ForP/For/Rnge 470 Interdisciplinary Natural Resource Planning (3 cr)
Econ 202 Principles of Economics (3 cr)
Engl 102 College Writing and Rhetoric (3 cr)
Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)
For/Rnge/WLF 221 Ecology (3 cr)
For/CSS 235 Society and Natural Resources (3 cr)
For 274 Forest Measurement and Inventory (3 cr)
For 320 Dendrology (3 cr)
For 375 Introduction to Spatial Analysis for Natural Resource Management (3 cr)
For 383 Economics for Natural Resource Managers (3 cr)
For 474 Forest Inventory (3 cr)
~~For 484 Forest Policy and Administration (2 cr)~~
ForP 100 Forest Products Issues and Technology (2 cr)
ForP 230 Field Measurements for Forest Operations~~Harvesting Field Measurements~~ (2 cr)
ForP 277 Wood Structure and Identification (3 cr)
~~ForP 337 Physical and Mechanical Properties of Wood (3 cr)~~
ForP 430 Forest Engineering and Harvesting (3 cr)
ForP 431 ~~Production and Cost Control in Forest Industry~~Forest Operations and Investment Analysis (3 cr)
ForP 432 ~~Low Volume Forest Roads~~Designing Forest Access (3 cr)
~~ForP 433 Forest Tractor System Analysis (3 cr)~~
ForP 434 Forest Tractor and Cable Systems ~~Analysis~~ (~~3~~ 4 cr)
ForP 444 Primary Wood Products~~Lumber~~ Manufacturing (3 cr)
ForP 450 Wood Deterioration and Preservation (2 cr)
NR 101 Exploring Natural Resources (1 cr)
~~Phys 211 Engineering Physics I (4 cr)~~
Soil 205 The Soil Ecosystem (3 cr)
Stat 251 Statistical Methods (3 cr)
And one of the following emphasis areas:

Technical Emphasis

BAE 351 Hydrology (3 cr)
~~For 375 Airphoto Interpretation and Mapping (3 cr)~~
Engr 210 Engineering Statics (3 cr)
Engr 220 Engineering Dynamics (3 cr)
Engr 335 Engineering Fluid Mechanics (3 cr)
Engr 350 Engineering Mechanics of Materials (3 cr)
Math 170 Analytic Geometry and Calculus I (4 cr)
Math 175 Analytic Geometry and Calculus II (4 cr)
Math 275 Analytic Geometry and Calculus III (3 cr)
Math 310 Ordinary Differential Equations (3 cr)
Phys 211 Engineering Physics I (4 cr)

Resource Emphasis

~~Biol 115 Cells and the Evolution of Life (4 cr)~~
Biol 116 Organisms and Environments or PlSc 205 General Botany (4 cr)
~~For 320 Dendrology (3 cr)~~
~~For 375 Airphoto Interpretation and Mapping (3 cr)~~
For 424 Forest Dynamics and Management (4 cr)
For 426 Wildland Fire Management and Ecology (3 cr)
For 462 Watershed Science and Management (3 cr)
For 466 Diseases and Insects of Woody Plants (3 cr)
For 484 Forest Policy and Administration (2 cr)
Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
Phys 111 General Physics I or Phys 211 Engineering Physics I (4 cr)

Electives to total 128 cr for the degree

Forest Resources

1. Reactivate the following dormant course [**Effective**: Summer 2007]

For 586 Social Ecology of Natural Resources (3 cr)
Social theory and methods relevant to resource management; interdisciplinary examination of specific natural resource issues such as fire management, wilderness, fisheries disputes, energy policy; emphasis on understanding social aspects of natural resources within an ecological perspective.

2. Change the credits, description and prerequisites of the following course [**Effective**: Summer 2007]

For 427 Prescribed Burning Lab (~~2~~ 3 cr)
Planning, conducting and evaluating prescribed burns designed to accomplish natural resource management objectives. Sampling, models and analysis used in writing required fire use plan. 5 days of field trips; some on Saturdays. (Fall only)~~Fire use planning with emphasis on preparation, execution, and evaluation. Eight days of field trips. Recommended Preparation: For 426. (Alt/yrs)~~
Prereq: For 426, Senior standing, and Permission

3. Change the prerequisites of the following course [**Effective**: Summer 2007]

For 383 Economics for Natural Resource Managers (3 cr)
Same as AgEc 383. Role of economic forces in resource analysis and conservation; planning of forest resource use by the firm and society.
Prereq: Econ 201 or 202; Math 143 or 160 or 170; For 235, or Permission

4. Change the description and title of the following course [**Effective**: Summer 2007]

For 375 ~~Airphoto Interpretation and Mapping~~Introduction to Spatial Analysis for Natural Resource Management (3 cr)
Methods and techniques for obtaining quantitative and qualitative geospatial information from aerial and satellite images, maps, and the Global Positioning System for input into geographic information systems. Analysis of geospatial data for mapping, monitoring and planning associated with all aspects of natural resource management.~~Methods and techniques of obtaining quantitative and qualitative spatial information from aerial photographs, maps, and the Global Positioning System for input into geographic information systems and planning processes for natural resources land management.~~ Two lec and one 2-hr lab a wk.
Prereq: College Algebra

5. Change the curricular requirements of **Forest Resources** (B.S.For.Res.) [**Effective**: Summer 2007]

Students pursuing a B.S. degree in forest resources must receive a grade of C or better in the following indicator courses to register for upper-division courses in forest resources and to graduate with a B.S.For.Res.: Math 143, Stat 251, For 221, and For 274. Students must also have a minimum cumulative grade-point average of 2.00 in forest resource (For) courses to qualify for the B.S. degree in forest resources.

Required course work includes the university requirements (see regulation J-3) and:

Biol 115 Cells and the Evolution of Life (4 cr)

Biol 116 Organisms and Environments (4 cr)
Chem 101 Introduction to Chem I or Chem 111 Principles of Chem I (4 cr)
CSS/ForP/For/Rnge 470 Interdisciplinary Natural Resource Planning (3 cr)
Econ 202 Principles of Economics (3 cr)
Engl 317 Technical Writing or Engl 313 Business Writing (3 cr)
For 102 Introduction to Forest Management (1 cr)
For/Rnge 221 Ecology (3 cr)
For/CSS 235 Society and Natural Resources (3 cr)
For 274 Forest Measurement and Inventory (3 cr)
For 320 Dendrology (3 cr)
For 330 Forest Ecosystem Processes (3 cr)
For 375 Airphoto Interpretation and Mapping (3 cr)
For 383 Economics for Natural Resource Managers (3 cr)
For 424 Forest Dynamics and Management (4 cr)
For 462 Watershed Science and Management (3 cr)
For 466 Diseases and Insects of Woody Plants (3 cr)
For 474 Forest Inventory (3 cr)
For 484 Forest Policy and Administration (2 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry (3 cr) or SAT math score of 610 or above, or ACT math score of 27 or above
NR 101 Exploring Natural Resources (1 cr)
Phys 100 Fundamentals of Physics or Phys 111 General Physics 1 (4 cr)
Soil 205, 206 The Soil Ecosystem and Lab (4 cr)
Stat 251 Statistical Methods (3 cr)
Restricted Electives (16 cr):
- AgEc 477 Law, Ethics, and the Environment (3 cr)
- Biol 213 Principles of Biological Structure and Function (4 cr)
- Biol 421 Advanced Evolutionary Biology (3 cr)
- CSS 486 Public Involvement in Natural Resource Management (3 cr)
- CSS 490 Wilderness and Protected Area Management (3 cr)
- CSS 494 Public Relations for Natural Resources Professionals (3 cr)
- Fish 314 Fish Ecology (3 cr)
- Fish 415 Limnology (4 cr)
- For 426 Wildland Fire Management and Ecology (3 cr)
- For 429 Landscape Ecology (2 cr)
- For 472 Remote Sensing of the Environment (3-4 cr)
- For 497 Senior Thesis (2-4 cr)
- ForP 430 Forest Engineering and Harvesting (3 cr)
- ForP 431 Production and Cost Control in Forest Industry (3 cr)
- Geog 301 Meteorology (3 cr)
- Geog 385 GIS Primer (3 cr)
- Geol 111 Physical Geology for Science Majors (4 cr)
- Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
- NR 402 GIS Application in Natural Resources (1 cr)
- PolS 364 Politics of the Environment (3 cr)
- Rnge 440 Wildland Restoration Ecology (3 cr)
- Rnge 459 Rangeland Ecology (2 cr)
- Soil 446 Soil Fertility (1-3 cr)
- Soil 454 Soil Development and Classification (3 cr)
- Stat 401 Statistical Analysis (3 cr)
- WLF 314 Wildlife Ecology I (3 cr)
- WLF 316 Wildlife Ecology II (3 cr)
- WLF 440 Conservation Biology (3 cr)
- At least 2 of the 16 cr from the following:
  - Fish 430 Riparian Ecology and Management (2 cr)
  - For 423 Forest Community Ecology (1 cr)
  - For 427 Prescribed Burning Lab (2 cr)
  - For 463 Hydrologic Measurement Techniques (1 cr)
  - Rnge 357 Rangeland and Riparian Habitat Assessment (3 cr)
  - ~~Rnge 459 Rangeland Ecology (2 cr)~~
  - Rnge 460 Rangeland Ecology Current Topics and Field Studies (1 cr)

Electives to total 128 credits for the degree

Geography

1. Add the following courses [**Effective**: Summer 2007]

Geog 310 Biogeography (3 cr)
Geographic distributions of plant and animal species, and causes of patterns, including climate, geology, speciation, extinction, and migration
Prereq: Geog 100

Geog 493 Senior Seminar in Applied Geography (3 cr)
A capstone course in which students integrate their knowledge of human and physical geography, as well as geographic techniques, to propose solutions to real-world problems. Students gain experience in working in small groups and in written and oral presentation of

project results, and will be evaluated with respect to the skills acquired in their degree program. Topics may include, but are not limited to, issues such as sustainable development in rural communities, global and regional food and energy distribution, quantifying and analyzing global or regional indicators of environmental and/or societal trends. Open to senior geography majors or to non-majors with instructor's permission.
Prereq: Department of Geography Majors or Permission

2. Change the credits of the following course [**Effective**: Summer 2007]

Geog 497 (s) Practicum (1-~~6~~ 3 cr, max ~~6~~3)
Practical on-the-job experience I n applied geography and cartography; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained.
Prereq: Permission

3. Change the prerequisites of the following course [**Effective**: Summer 2007]

Geog 440 The New Global Economy (3 cr)
The course will explore the structures of globalization from convergence and labor migration to trade bloc formation and regional specialization. An understanding the role of location in the creation and modification of economic landscapes will be emphasized. Recommended Prep: Econ 446. (Alt/yrs)
Prereq: ~~Econ 352 and Geog 350 or Permission~~Geog 240

4. Change the prerequisites and title of the following course [**Effective**: Summer 2007]

Geog ID475 Advanced GIS~~Geographic Information Systems~~ (3 cr) WSU ES/RP 575
Spatial analysis in raster- and vector-based systems; concepts, techniques, and applications of GIS technology using microcomputer and workstation platforms. Two lec and 2 hrs of lab a wk.
Prereq: Geog 385 and Stat 251 ~~or Permission~~

5. Change the credits and description of the following course [**Effective**: Summer 2007]

Geog 580 GIS Seminar (3 cr, max arr)
Advanced topics in GIS and GIS applications including macro programming, user interface design, and data integration. May be repeated for credit.
Prereq: Permission

6. Change the description and title of the following course [**Effective**: Summer 2007]

Geog 450 Global Environmental Change~~Climate Summit Course~~ (3 cr)
Major global environmental changes addressed using an interdisciplinary approach. Topics may include processes and principles of ecosystems, biogeochemical cycles, impacts and mitigation of climatic change, atmospheric chemistry, feedbacks between climate and various earth system processes, and trends in global biodiversity.~~Physical concepts of past, present, and future climatic change, sustainable energy options, natural versus human-induced climatic change, impacts of projected change on human societies globally, "summit meeting" to propose action for global sustainability in which students represent the perspective of different nations. (Spring, Alt/yrs)~~
Prereq: Math 143 or Stat 251

7. Change the credit, description, prerequisites and title of the following course [**Effective**: Summer 2007]

Geog 479 ~~Web-Based~~ GIS Programming (~~3~~ 2 cr)
An introduction to the use of programming languages with standard ArcGIS concepts. An introduction to Python ArcObjects, AML, and Visual Basic.~~Use of web-based mapping sites that offer dynamic and real- time access to geographic information systems and elementary spatial analysis. How to provide maps, tabular data and satellite imagery over the web and design sites of utility to multiple users.~~
Prereq: Geog ~~385~~ 390 and Geog 475 ~~or Permission~~

8. Change the number of the following course [**Effective**: Summer 2007]

Geog ~~470~~ 390 Geographic Visualization (4 cr) (Geog 470)
Map projections, map generalization, cartographic design, map symbology, and typography; statistical, isarithmic and multivariate mapping; static versus dynamic mapping; interactive and internet mapping; cartographic animation; 2 hrs of lab/wk. (Spring only)
Prereq: Geog 385 and Stat 251

9. Change the curricular requirements of **Geography** (B.S.) [**Effective**: Summer 2007]

This program is offered through the College of Science. Required course work includes the university requirements (see regulation J-3) and:

Geog 100 Physical Geography (4 cr)
~~Geog 180 Geospatial Graphics (3 cr)~~
Geog 200 World Regional Geography (3 cr)
Geog 240 Economic Geography or Geog 165 Human Geography (3 cr)
Geog 385 GIS Primer (3 cr)

Geog 390 Geographic Visualization (4 cr)
~~Geog 491 Field Techniques (3 cr)~~
Geog 493 Senior Seminar in Applied Geography (Grade of 'C' or better required) (3 cr)
Stat 251 Statistical Methods (3 cr)

And completion of one of the following options:

A. Physical Science and Environment Option

This option emphasizes the study of processes that impact the physical environment of the earth, as well as the interactions between the physical and human environment. Students acquire a good foundation in earth and atmospheric sciences, as well as the use of contemporary geospatial techniques for mapping and monitoring the earth and atmosphere.

Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)
Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
Physical Geography and Related Fields (15 cr):
- BAE 351, Geog 320, or For 462 Hydrology or Watershed Management (3 cr)
- ~~Chem 101 Intro to Chem or Chem I 111 Principles of Chem I (4 cr)~~
- ~~Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)~~
- Geog 301 Meteorology (3 cr)
- Geog 310 Biogeography (3 cr)
- ~~Geog 401 Climatology (3 cr)~~
- ~~Geog 444 Environmental Assessment (4 cr)~~
- ~~Phys 100 Fundamentals of Physics or Phys 111 General Physics I (4 cr)~~
- ~~Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)~~
- Geog 450 Global Climate Summit Course (3 cr)
- Geol 335 Geomorphology (3 cr)

Basic Physical Sciences (8 cr):
- Chem 101 Introduction to Chemistry I or Chem 111 Principles of Chemistry I (4 cr)
- Phys 100 Fundamentals of Physics or Phys 111 General Physics I (4 cr)
- Phys 112 General Physics II (4 cr)

Tools/Methods Courses (11 cr):~~12 credits from the following courses:~~
- CE 211 Engr Measurements, or CE 218 Elementary Surveying (2-4 cr)
- For 375 Airphoto Interpretation and Mapping (3 cr)
- For 472 Remote Sensing and the Environment (3-4 cr)
- Geog 427 Spatial Decision Support Techniques (3 cr)
- Geog 444 Environmental Assessment (4 cr)
- Geog 470 Geographic Visualization (3 cr)
- Geog 475 Geographic Information Systems (3 cr)
- Geog 483 Remote Sensing/GIS Integration (3 cr)

6 credits from the following courses:
- For 330 Forest Ecosystem Processes (3 cr)
- For 426 Wildland Fire Management and Ecology (3 cr)
- Geog 315 Geomorphology (3 cr)
- Geol 101 Physical Geology (4 cr)
- Geol 309 Ground Water Hydrology (3 cr)
- Geol 360 Geologic Hazards (3 cr)
- Geol 361 Geology and the Environment (3 cr)
- Rnge 221 Ecology (3 cr)
- Rnge 429 Landscape Ecology (2 cr)
- Soil 205 General Soils (3 cr)

Electives to total 128 cr for the degree

B. Regional Analysis and Development Option

This option is designed to prepare students for employment opportunities in a variety of settings in the global and/or local context, including business and industry, NGOs, regional and community planning, as well as further graduate work in human geography. It emphasizes the geographic aspects of global markets, spatial economic processes and economic decision making. Students will gain understanding of the geographical patterns of markets, commodity and capital transactions and trade or migration flows. With this option, most students can proceed to complete master's degrees in business administration or geography, or move directly into a growing area of employment for the business or economically oriented geographer with skills in spatial analysis and GIS along with substantive knowledge of global and regional systems.~~This option is designed to prepare students for employment opportunities in business and industry and also in the field of planning at the regional or community scale. It emphasizes the locational aspects of economic activity and economic decision making. Students will gain an understanding of geographical patterns of markets, transactions and trade, transportation, production and consumption, industrial processing, and other aspects of the spatial economy. With this option, most students can go on to complete master's degrees in business administration or geography or move directly into a growing area of employment for the business oriented geographer.~~

Engl 313 Business Writing, or Engl 317 Technical Writing (3 cr)
Geography Methods and Electives (15 cr):
- Geog 240 Economic Geography (3 cr)
- Geog 340 Business Location Decisions (3 cr)
- Geog 350 Geography of Development (3 cr)
- Geog 360 Population Dynamics and Distribution (3 cr)
- Geog 440 The New Global Economy (3 cr)

Geography Methods and Electives (9 cr):

Geog 330 Urban Geography (3-4 cr)
Geog 365 Political Geography (3 cr)
Geog 409 Rural Development (3 cr)
Geog 420 Land, Resources and Environment (3 cr)
Geog 427 Spatial Decision Support Techniques (3 cr)
Geog 475 Advanced GIS (3 cr)

A minimum of 15 credits in basic quantitative methods, economics and political science:

Group 1: 9 credits from the following:
- Math 160 Survey of Calculus (4 cr)
- Stat 401 Statistical Analysis (3 cr)
- Econ 272 Foundations of Economic Analysis (4 cr)
- Econ 352 Intermediate Microeconomic Analysis (3 cr)
- Econ 430 Regional/Urban Economics (3 cr)
- Econ 446 International Economics (3 cr)
- Geog 407 Spatial Analysis and Modeling (2 cr)
- Geog 497 Practicum (1-3 cr)

Group 2: 6 credits from the following:
- PolS 338 American Foreign Policy (3 cr)
- PolS 381 Western European Politics (3 cr)
- PolS 383 Middle Eastern Politics (3 cr)
- Approved Regional History course (3 cr)

~~Bus 321 Marketing (3 cr)~~
~~Econ 201, 202 Principles of Economics (6 cr)~~
~~Econ 430 Regional/Urban Economics (3 cr)~~
~~Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)~~
~~Geog 330 Urban Geography (3-4 cr)~~
~~Geog 340 Business Location Decisions (3 cr)~~
~~Geog 427 Spatial Decision Support Techniques (3 cr)~~
~~9 credits chosen from the following:~~
- ~~Bus 421 Marketing Research and Analysis (3 cr)~~
- ~~Econ 352 Intermediate Microeconomic Analysis (3 cr)~~
- ~~Geog 470 Geographic Visualization (3 cr)~~
- ~~Geog 497 Practicum (internship with a company or agency) (1-6 cr, max 6)~~
- ~~Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)~~
- ~~Math 326 Linear Programming (3 cr)~~

~~12 credits from the following:~~
- ~~AgEc 451 Land and Natural Resource Economics (3 cr)~~
- ~~Bus 425 Retail Distribution Management (3 cr)~~
- ~~Econ 385 Environmental Economics (3 cr)~~
- ~~Econ 415 Market Structure and Governmental Policy (3 cr)~~
- ~~Econ 446 International Economics (3 cr)~~
- ~~Geog 350 Geography of Development (3-4 cr)~~
- ~~Geog 360 Population Dynamics and Distribution (3-4 cr)~~
- ~~Geog 409 Rural Development (3 cr)~~

C. Cartography Option

This option emphasizes graphic design and communication and both computerized and conventional techniques of production cartography. It provides extensive applied professional cartographic training and exposure to theoretical-research oriented aspects of the field. Students who complete this option should be capable of eventually occupying supervisory positions in graphic sections or organizations producing maps and allied graphic products.

Bus 250 Introductory Systems Development or Geog 378 Interactive Cartography (3-4 cr)
CE 211 Engineering Measurements or CE 218 Elementary Surveying (2-4 cr)
CS 112 Intro to Problem Solving and Programming (3 cr)
Engr 105 Engineering Graphics (2 cr)
Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)
For 375 Airphoto Interpretation and Mapping (3 cr)
For 472 Remote Sensing of Environment (3-4 cr)
Geog 470 Geographic Visualization (3 cr)
Geog 475 Geographic Information Systems (3 cr)
Geog 483 Remote Sensing/GIS Integration (3 cr)
Geog 497 Practicum (3-6 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry (3 cr)
Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
Math 330 Linear Algebra or Stat 401 Statistical Analysis (3 cr)

D. Geographic Information Systems (GIS) Option

This option focuses on teaching theoretical fundamentals, techniques, and practical applications of modern geoprocessing using spatial analysis and information systems technology. Students will study in GIS and spatial analysis including cartographic principles, computational technology, and geographic information problem solving. Required courses are listed below by subfields:~~This option focuses on teaching theoretical fundamentals, techniques, and practical applications of modern geoprocessing using spatial analysis and information systems technology. It is intended to educate specialists in GIS and Spatial Analysis who have a solid grasp of cartographic principles, computational technology, and geographic information problem solving.~~

~~Requirements are the same as the Cartography option with the addition of the following courses:~~
~~CS 121 Computer Science II (3 cr)~~
~~CS 360 Database Systems (3 cr)~~
~~Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)~~
~~Geog 427 Spatial Decision Support Techniques (3 cr)~~
~~Math 176 Discrete Mathematics (3 cr)~~
Bus 250 Introductory Systems Development (3 cr)
CE 211 Engineering Measurements or CE 218 Elementary Surveying (2-4 cr)
CS 112 Intro to Problem Solving and Programming (3 cr)
Engr 105 Engineering Graphics (2 cr)
Engl 313 Business Writing or Engl 317 Technical Writing (3 cr)
Geog 407 Spatial Analysis and Modeling (2 cr)
Geog 427 Spatial Decision Support Techniques (3 cr)
Geog 479 GIS Programming (2 cr)
Geog 497 Practicum (1-3 cr)
Math 160 Survey of Calculus or Math 170 Analytic Geometry and Calculus I (4 cr)
Math 176 Discrete Mathematics (3 cr)
Math 330 Linear Algebra or Stat 401 Statistical Analysis (3 cr)
Spatial Techniques (6 cr):
- For 375 Airphoto Interpretation and Mapping (3 cr)
- For 472 Remote Sensing of Environment (3-4 cr)
- Geog 424 Hydrologic Applications of GIS and Remote Sensing (3 cr)
- Geog 483 Remote Sensing/GIS Integration (3 cr)

6 credits of Upper Division Geography Courses

Geologic Sciences

1. Discontinue the following subject prefix [**Effective**: Summer 2007]

GeoP

Journalism and Mass Media

1. Add the following course [**Effective**: Summer 2007]

Jamm 426 Narrative Journalism (3 cr)
Tradition and conceptual foundations of narrative journalism, with emphasis on structure, storytelling, style and narrative voice. Students will be expected to write or produce several enterprise stories suitable for publication or broadcast.
Prereq: JAMM 225 or Permission

2. Change the description of the following courses [**Effective**: Summer 2007]

Jamm 252 Principles of Public Relations (3 cr)
Overview of public relations: principles, strategies and practices. Multiple writing assignments address basic requirements of public relations professionals.~~Understanding public relations programs, functions and techniques; projects related to student's interest.~~
Prereq: Jamm 121

Jamm 265 Principles of Advertising (3 cr)
Overview of the role of advertising in American society. Explores the socioeconomic growth and impact of advertising on U.S. consumer culture. Writing assignments include critiques of advertisements and analyses of their intended effects.~~Survey of advertising practices and the role of advertising in American society, including effects on consumers; regulation, media, and advertising as a creative process.~~

Jamm 270 Principles of Radio and Television (3 cr)
Basic writing principles in audio, video, and online formats. Introduction to commercials; news and sports; talk shows; music, variety, and comedy programs; educational, corporate, and children's programs; emphasis on narrative and non-narrative storytelling, criticism and revision.~~ An examination of radio and television industry practices and station policies.~~

Jamm 275 Introduction to Video/Television & Digital Media Production (3 cr)
Introduction to the art and craft of various broadcast media-related production environments. Emphasizes aesthetics of audio and video production: writing, producing, directing, sound recording, lighting, camera work, editing and mixing. Work with both analog and digital equipment for field and studio assignments. Includes hands-on laboratory experience.~~Introduction to art and craft of various broadcast media-related production environments. Emphasis on aesthetics of story telling through visual imagery, sound, and associated processes of production covering scripting, directing, and editing. Work with both analog and digital equipment for field and studio assignments.~~
Prereq: Jamm 270

Law

1. Change the title of the following course [**Effective**: Summer 2007]

Law 954 Trial Skills~~Practice Court~~ (3 cr)
Instruction in the skills fundamental to litigation and the techniques of persuasive witness examination and argument, combining classroom instruction and individually critiqued student exercises.
Prereq: Law 950 and Permission

Mathematics

1. Change the description of the following course [**Effective**: Summer 2007]

Math 215 Seminar in Topology of the Plane (3 cr)
Carries no credit after Math 411 or 471. Primary goal is to teach students to prove theorems; open and closed sets, connectedness, compactness, continuity, etc. ~~Class size limited to 15.~~ (Fall only)
Prereq: Math 175 and permission

2. Change the title of the following courses [**Effective**: Summer 2007]

Math 326 Linear Optimization~~Programming~~ (3 cr)
Geometric solutions, simplex method, duality and revised simplex method, sensitivity, integer programming, applications. Recommended Preparation: Math 175. (Spring, Alt/yrs)
Prereq: Math 160 or 170

Math 471 Introduction to Analysis 1~~Advanced Calculus~~ (3 cr)
Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Fall only)
Prereq: Math 275, Math 215, or Permission

Math 472 Introduction to Analysis 2~~Advanced Calculus~~ (3 cr)
Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Spring only)
Prereq: Math 471 or Permission

3. Change curricular requirements of **Mathematics** (B.S.) [**Effective**: Summer 2007]

E. Applied - Actuarial Science Option

This curriculum provides the necessary background to become an actuary and work in the insurance industry.

Math courses:
- Math 310 Ordinary Differential Equations (3 cr)
- Math 451 Probability Theory (3 cr)
- Math 452 Mathematical Statistics (3 cr)
- ~~Math 455 Applied Actuarial Science II (1 cr)~~
- Three math courses numbered above 400, excluding Math 513-519 (9 cr)

Supporting courses:
- Acct 201-202 Introduction to Accounting (6 cr)
- Bus 301 Financial Management (3 cr)
- ~~Bus 364 Insurance (3 cr)~~
- CS 112 Introduction to Problem Solving and Programming or CS 120 Computer Science I (3-4 cr)
- Econ 201, 202 Principles of Economics (6 cr)
- Stat 401 Statistical Analysis (3 cr)
- Stat 423 Beginning SAS Programming (1 cr)
- At least ~~one~~ two course selected from the following (~~3~~ 6 cr):
  - Bus 302 Intermediate Financial Management (3 cr)
  - Bus 463 Portfolio Management (3 cr)
  - Bus 481 International Finance (3 cr)
  - Econ 351 Intermediate Macroeconomic Analysis (3 cr)
  - Econ 352 Intermediate Microeconomic Analysis (3 cr)
  - Both of the following:
    - Bus 364 Insurance (3 cr)
    - Math 455 Applied Actuarial Science (1 cr)
- One course selected from the following (3-4 cr):
  - Stat 301 Probability and Statistics (recommended) (3 cr)
  - Stat 251 Statistical Methods (3 cr)
  - Stat 271 Statistical Inference and Decision Analysis (4 cr)
- One course selected from the following (3 cr):
  - Econ 353 Quantitative Economics and Forecasting (3 cr)
  - Stat 433 Econometrics (3 cr)
  - Stat 550 Regression (3 cr)

Mining Engineering-Metallurgy

1. Discontinue the following subject prefix [**Effective**: Summer 2007]

MnMt

Music

1. Drop the following course [**Effective**: Summer 2007]

MusA 148 Voice Class (1 cr)
May not be taken for audit. Two-semester sequence for beginning singers. Two lec-labs a wk.

2. Add the following courses [**Effective**: Summer 2007]

MusA 247 Piano Proficiency Review (1 cr)
Review of material presented in MusA 145-246. Preparation for Piano Proficiency Exam.
Prereq: MusA 246 with a grade of 'C' or better

MusC J431/J531 History of Western Music Theory (3 cr)
A seminar in the historical development of music theory. Students enrolled for graduate credit will be expected to complete deeper analysis of selected methodologies, and to make a presentation in class.
Prereq: MusC 242 or Permission

MusC J437/J537 Music in Film (3 cr)
A seminar in the processes, techniques and evaluation of music as used in film. Materials will change each time the course is offered but the major focus will be main-stream motion pictures. Students enrolled for graduate credit will be expected to complete deeper analysis of selected film scores, and to make a presentation in class.
Prereq: MusC 242 or Permission

MusC J438/J538 Theory Pedagogy (3 cr)
A seminar in the methods, techniques and materials for the teaching of music theory. Students enrolled for graduate credit will be expected to complete deeper analysis of selected methodologies, and to make a presentation in class.
Prereq: MusC 242 or Permission

MusC 531 History of Western Music Theory (3 cr)
See MusC J431/J531.

MusC 537 Music in Film (3 cr)
See MusC J437/J537.

MusC 538 Theory Pedagogy (3 cr)
See MusC J438/J538.

3. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

MusA J117/J317/J517 (s) University Choir (1 cr, max arr)
May be used as core credit in J-3-d. Open to all students.~~ One 2-1/2 hr night rehearsal a wk.~~
~~**Prereq:** Permission~~

4. Change the description of the following courses [**Effective**: Summer 2007]

MusA 147 Voice Class (1 cr)
May not be taken for audit. ~~Two-semester sequence f~~For beginning singers. Two lec-labs a wk.

MusA J380/J580 (s) Opera/Musical Theatre Studio (1-3 cr, max arr)
Analysis, rehearsal, and performance of operatic and musical theatre literature.
Prereq: Audition and Permission

5. Change the description and title of the following courses [**Effective**: Summer 2007]

MusA 115 (s) ~~Individual~~ Studio Instruction (2 cr, max 4)
For music majors who need to correct deficiencies in major instrument area; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury.~~One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury.~~ See MusA 114 for instructional areas.
Prereq: Placement audition by committee

MusA 124 (s) ~~Individual~~ Studio Instruction (2 cr, max arr)
For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury.~~One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury.~~ See MusA 114 for instruction areas.
Prereq: Placement audition by committee

MusA 134 (s) ~~Individual~~ Studio Instruction (3 cr, max arr)

For applied music majors in the B.Mus. performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. ~~One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury.~~ See MusA 114 for instruction areas.
Prereq: Placement audition by committee

6. Change the title of the following courses [**Effective**: Summer 2007]

MusA 324 (s) ~~Individual~~ Studio Instruction (2 cr, max arr)
See MusA 124 for description; see "Upper-Division Standing" in part 5 for prerequisites.

MusA 334 (s) ~~Individual~~ Studio Instruction (3 cr, max arr)
See MusA 134 for description; see "Upper-Division Standing" in part 5 for prerequisites.

7. Change the curricular requirements of **Music Education: Vocal-Instrumental** (B.Mus.) [**Effective**: Summer 2007]

NOTE: For registration in upper-division courses in education, students must have been admitted to the teacher education program and maintain a GPA of 2.75. For admission criteria, refer to "Admission to the Teacher Education Program" in the College of Education section of part four of this catalog.

Required course work includes the university requirements (see regulation J-3) and:

Comm 101 Fundamentals of Public Speaking (2 cr)
ED 201 Diverse Learners in Schools and Social/Cultural Contexts (3 cr)
ED 301 Principles of Learning and Development in Education (3 cr)
ED 302 Curriculum, Instruction, and Assessment Strategies (3 cr)
EDCI 463 Literacy Methods for Content Learning (3 cr)
MusA 114 Individual Instruction (voice) (~~2~~ 3 cr)
MusA 124 Individual Instruction (instrumental) (8 cr)
MusA 145-146, 245-246 Piano Class (4 cr)
MusA 147 ~~148~~ Voice Class (~~2~~ 1 cr)
MusA 324 Individual Instruction (6 cr)
MusA 387, 487 Conducting I, II (4 cr)
MusA 490 Half Recital (0 cr)
MusC 139-140, 239-240 Aural Skills (6 cr)
MusC 141-142, 241-242 Theory of Music (10 cr)
MusC 328 Instrumental and Choral Arranging (3 cr)
MusH 111 Introduction to Music Literature (3 cr)
MusH 321, 322, 323 Music in Western Civilization (9 cr)
MusT 251, 253, 254, 255, 352 Instrumental Techniques (5 cr)
MusT 382 Elementary School Music Methods for Music Majors (3 cr)
MusT 383 Principles of Music Teaching (3 cr)
MusT 385 Choral Music in the Secondary School (2 cr)
MusT 386 Instrumental Music in the Secondary School (2 cr)
MusT 432 Practicum: Music Teaching (14 cr)
MusT 445 Proseminar in Music Teaching (2 cr)
MusT 465 Jazz Band Rehearsal Techniques (1 cr)
MusT 466 Marching Band Techniques (1 cr)
MusT 467 Band Literature and Rehearsal Techniques (1 cr)
MusT 485 Choral Ensemble Rehearsal Techniques (1 cr)
MusT 486 Orchestral Literature and Rehearsal Techniques (1 cr)
MusX 101 Orientation for Music Majors (0 cr)
MusX 140 Convocation (seven semesters) (0 cr)
Psyc 101 Introduction to Psychology (3 cr)
Major ensembles (six different semesters)***** (6 cr)
Major ensembles (two different semesters chosen from MusA 116/317 Concert Choir - Vandaleers, 117/ 317 University Chorus) (2 cr)
Other ensembles (two different semesters chosen from MusA 119/319 Marching Band, 121/321 Concert Band, 122/322 Orchestra, 125/325 Symphonic Band, or 320 Wind Ensemble, 323 Jazz Ensemble, 365 Chamber Ensemble) (students whose major applied medium is keyboard must select MusA 315 Accompanying to satisfy this requirement) (2 cr)
Electives to total 128 cr for the degree

8. Change the curricular requirements of **Music Education: Vocal** (B.Mus.) [**Effective**: Summer 2007]

B. KEYBOARD

Comm 101 Fundamentals of Public Speaking (2 cr)
ED 201 Diverse Learners in Schools and Social/Cultural Contexts (3 cr)
ED 301 Principles of Learning and Development in Education (3 cr)
ED 302 Curriculum, Instruction, and Assessment Strategies (3 cr)
EDCI 463 Literacy Methods for Content Learning (3 cr)
MusA 147 ~~148~~ Voice Class (~~2~~ 1 cr)
MusA 114 Individual Instruction: Voice (~~4~~ 5 cr)*****
MusA 124 Individual Instruction: Piano (8 cr)
MusA 151 or 152 Guitar Class for Music Majors (1 cr)
MusA 246 Piano Class (1 cr)
MusA 315 Accompanying (2 cr)

MusA 324 Individual Instruction: Piano (6 cr)
MusA 380 Opera/Musical Theatre Studio (1 cr)
MusA 387, 487 Conducting I, II (4 cr)
MusA 490 Half Recital (0 cr)
MusC 139-140, 239-240 Aural Skills (6 cr)
MusC 141-142, 241-242 Theory of Music (10 cr)
MusC 328 Instrumental and Choral Arranging (3 cr)
MusH 111 Introduction to Music Literature (3 cr)
MusH 321, 322, 323 Music in Western Civilization (9 cr)
MusT 382 Elementary School Music Methods for Music Majors (3 cr)
MusT 383 Principles of Music Teaching (3 cr)
MusT 385 Choral Music in the Secondary School (2 cr)
MusT 432 Practicum: Music Teaching (14 cr)
MusT 435 Pedagogy and Materials: Voice (2 cr)
MusT 445 Proseminar in Music Teaching (2 cr)
MusT 485 Choral Ensemble Rehearsal Techniques (1 cr)
MusX 101 Orientation for Music Majors (0 cr)
MusX 140 Convocation (seven semesters) (0 cr)
MusX 283-284 Diction for Singers (4 cr)
Psyc 101 Introduction to Psychology (3 cr)
Major ensemble (six different semesters chosen from MusA 116/316 Concert Choir - Vandaleers, 117/317 University Chorus) (6 cr)
Other ensemble (one semester chosen from MusA 116/316 Concert Choir - Vandaleers, 117/317 University Chorus, 118/318 Jazz Choir, 365 Chamber Ensemble, 380 Opera Workshop) (1 cr)

***** Keyboard majors must register for voice class before enrolling in applied voice instruction.

Natural Resources

1. Change the curricular requirements of **Ecology and Conservation Biology** (B.S.Ecol.-Cons.Biol.) [**Effective**: Summer 2007]

A. Natural Resources Ecology Option

The natural resources ecology option combines ecological theory, field experience, and quantitative tools to gain an interdisciplinary understanding of the structure and function of ecosystems. This field covers ecological topics from local, regional, and landscape scales while integrating the social and biophysical worlds.

To graduate in this option, students must achieve a "C" or better in the following six core courses: CSS/Fish/For/Rnge/WLF 200, For 330, For 429, Soil 205/206, and WLF 316 or Fish 316.

Quantitative Resource Analysis Restricted Electives (two courses from the following):
CSS 310 Social Research Methods in Conservation (4 cr)
For 375 Airphoto Interpretation and Mapping (3 cr)
For 472 Remote Sensing of Environment (3 cr)
For 474 Forest Inventory (3 cr)
Geog 385 GIS Primer (3 cr)
~~Math 437 Mathematical Biology (3 cr)~~
Rnge 357 Rangeland and Riparian Habitat Assessment (3 cr)
Stat 401 Statistical Analysis (3 cr)
Stat 422 Sample Survey Methods (2 cr)
~~Stat/GeoE 428 Geostatistics (3 cr)~~
WLF 448 Fish & Wildlife Population Ecology (4 cr)
Resource Management Restricted Electives (one course from the following):
CSS 385 Conservation Management and Planning I (3 cr)
CSS 490 Wilderness and Protected Area Management (3 cr)
CSS 496 Monitoring Impacts in Protected Areas and Wilderness (3 cr)
Fish 418 Fisheries Management (4 cr)
For 424 Forest Dynamics and Management (4 cr)
For 462 Watershed Science and Management (2 cr)
Rnge 454 Rangeland Weed Management (3 cr)
Rnge 456 Integrated Rangeland Management (3 cr)
~~WLF 445 Nongame Management (2 cr)~~
WLF 492 Wildlife Management (4 cr)
Ecology Restricted Electives (at least 2 credits from Fish 314, Fish 415, Fish 430, Fish 435, For 423, For 463, Rnge ~~459~~460, and/or WLF 315) (10 cr):
Biol 421 Advanced Evolutionary Biology (3 cr)
Biol 478 Animal Behavior (3 cr)
Ent 472 Aquatic Entomology (3 cr)
Fish 314 Fish Ecology (3 cr)
Fish 415 Limnology (4 cr)
Fish 430 Riparian Ecology and Management (3 cr)
Fish 435 Wetland Ecology and Management (3 cr)
For 423 Forest Community Ecology (1 cr)
For 426 Wildland Fire Management and Ecology (3 cr)
For 463 Hydrologic Measurement Techniques (1 cr)

For 466 Diseases and Insects of Woody Plants (3 cr)
MMBB 425 Microbial Ecology (3 cr)
PlSc 410 Biology of Weeds (3 cr)
Rnge 440 Wildland Restoration Ecology (3 cr)
Rnge 459 Rangeland Ecology (2 cr)
Rnge 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
WLF 314 Wildlife Ecology I (3 cr)
WLF 315 Wildlife Ecology I Lab (1 cr)
WLF 440 Conservation Biology (3 cr)

Social/Political Restricted Electives (one course from the following):
Comm 331 Conflict Management (3 cr)
CSS 387 Environmental Communication Skills (3 cr)
CSS 481 Conservation Leadership (3 cr)
CSS 486 Public Involvement in Natural Resource Management (3 cr)
CSS 489 Personalities and Philosophies in Conservation (2 cr)
CSS 493 International Land Preservation and Conservation Systems (3 cr)
CSS 494 Public Relations for Natural Resources Professionals (3 cr)
For 484 Forest Policy and Administration (2 cr)
Geog 420 Land, Resources, and Environment (3 cr)
Geog 444 Environmental Assessment (3 cr)
Hist 424 American Environmental History (3 cr)
Phil 382 Philosophy of Ecology (3 cr)
Phil 452 Environmental Philosophy (3 cr)
Phil 457 Natural Resource Ethics (3 cr)
PolS 364 Politics of the Environment (3 cr)

Electives to total 128 credits for the degree

B. Conservation Biology Option

The conservation biology option is centered around a multidisciplinary curriculum that provides students with training to work in jobs aimed at conserving the earth's biodiversity. This option provides a broad-based education that covers biological diversity from the genetic level to the landscape level, and provides additional training in social sciences and management. In the words of Hunter (1996), "Conservation biology is cross-disciplinary, reaching far beyond biology into subjects such as philosophy, economics, and sociology; disciplines that are concerned with the social environment in which we practice conservation--as well as into subjects such as law and education that determine the ways we implement conservation."

To graduate in this option, students must achieve a "C" or better in the following seven core courses: Biol 421, CSS/Fish/For/Rnge/WLF 200, For 429, Phil 452, CSS 493, Fish or WLF 316, and WLF 440.

Biol 421 Advanced Evolutionary Biology (3 cr)
CSS/Fish/For/Rnge/WLF 200 Seminar (1 cr)
CSS 493 International Land Preservation and Conservation Systems (3 cr)
Gene 314 General Genetics (3 cr)
For 429 Landscape Ecology of Forests and Rangelands (2 cr)
Phil 452 Environmental Philosophy (3 cr)
WLF 316 Wildlife Ecology II or Fish 316 Principles of Population Dynamics (2-4 cr)
WLF 440 Conservation Biology (3 cr)

Quantitative Resource Analysis Restricted Electives (two courses from the following):
CSS 310 Social Research Methods in Conservation (4 cr)
For 375 Airphoto Interpretation and Mapping (3 cr)
For 472 Remote Sensing of Environment (3 cr)
For 474 Forest Inventory (3 cr)
Geog 385 GIS Primer (3 cr)
~~Math 437 Mathematical Biology (3 cr)~~
Rnge 357 Rangeland and Riparian Habitat Assessment (3 cr)
Stat 401 Statistical Analysis (3 cr)
Stat 422 Sample Survey Methods (2 cr)
~~Stat/GeoE 428 Geostatistics (3 cr)~~
WLF 448 Fish & Wildlife Population Ecology (4 cr)

Resource Management Restricted Electives (one course from the following):
CSS 385 Conservation Management and Planning I (3 cr)
CSS 490 Wilderness and Protected Area Management (3 cr)
CSS 496 Monitoring Impacts in Protected Areas and Wilderness (3 cr)
Fish 418 Fisheries Management (4 cr)
For 424 Forest Dynamics and Management (4 cr)
For 462 Watershed Science and Management (2 cr)
Rnge 454 Rangeland Weed Management (3 cr)
Rnge 456 Integrated Rangeland Management (3 cr)
~~WLF 445 Nongame Management (2 cr)~~
WLF 492 Wildlife Management (4 cr)

Ecology Restricted Electives (at least 2 credits from Fish 314, Fish 415, Fish 430, Fish 435, For 423, For 463, Rnge ~~459~~460, and/or WLF 315) (6 cr):
Biol 478 Animal Behavior (3 cr)
Ent 472 Aquatic Entomology (3 cr)
Fish 314 Fish Ecology (3 cr)
Fish 415 Limnology (4 cr)

Fish 430 Riparian Ecology and Management (3 cr)
Fish 435 Wetland Ecology and Management (3 cr)
For 330 Forest Ecosystem Processes (3 cr)
For 423 Forest Community Ecology (1 cr)
For 426 Wildland Fire Management and Ecology (3 cr)
For 463 Hydrologic Measurement Techniques (1 cr)
For 466 Diseases and Insects of Woody Plants (3 cr)
MMBB 425 Microbial Ecology (3 cr)
PlSc 410 Biology of Weeds (3 cr)
Rnge 440 Wildland Restoration Ecology (3 cr)
Rnge 459 Rangeland Ecology (2 cr)
Rnge 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
WLF 314 Wildlife Ecology I (3 cr)
WLF 315 Wildlife Ecology I Lab (1 cr)
Organismal Biology Restricted Elective (one course from the following):
Biol 481 Ichthyology (4 cr)
Biol 483 Mammalogy (3 cr)
Ent 211 Insect Biology (4 cr)
Rnge 353 Rangeland Plant Identification and Ecology (3 cr)
WLF 482 Ornithology (4 cr)
Social/Political Restricted Electives (one course from the following):
Comm 331 Conflict Management (3 cr)
CSS 387 Environmental Communication Skills (3 cr)
CSS 486 Public Involvement in Natural Resource Management (3 cr)
CSS 489 Personalities and Philosophies in Conservation (2 cr)
CSS 494 Public Relations for Natural Resources Professionals (3 cr)
For 484 Forest Policy and Administration (2 cr)
Geog 420 Land, Resources, and Environment (3 cr)
Geog 444 Environmental Assessment (3 cr)
Hist 424 American Environmental History (3 cr)
Phil 382 Philosophy of Ecology (3 cr)
Phil 457 Natural Resource Ethics (3 cr)
PolS 364 Politics of the Environment (3 cr)
Electives to total 128 credits for the degree

Philosophy

1. Add the following courses [**Effective**: Summer 2007]

Phil 508 (s) Critical Theory and Continental Aesthetics (3 cr)
See Art 508.

Phil 517 Philosophy of Biology (3 cr)
See Phil J417/J517.

Phil 525 Philosophy and Feminism (3 cr)
See Phil J425/J525.

Phil 542 Philosophy of Mind (3 cr)
See Phil J442/J542.

Phil 543 Philosophy of Language (3 cr)
See Phil J443/J543.

Phil 570 Philosophy of Law (3 cr)
See Phil J470/J570.

2. Change the description, joint list status and prerequisites of the following course [**Effective**: Summer 2007]

Phil ID-J417/J517 Philosophy of Biology (3 cr) WSU Phil 418
May be used as core credit in J-3-d. Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit.~~Classical and current conceptual issues in the foundations and aims of biology, and the role of values and social concerns as they affect and interact with biological science, research, and technology. Recommended preparation: one college course in biological science.~~
Prereq: 3 credits of biology and 3 credits of philosophy or Permission

3. Change the description and joint list status of the following courses [**Effective**: Summer 2007]

Phil J425/J525 Philosophy and Feminism (3 cr)
May be used as core credit in J-3-d. Analysis of schools of feminist theory and impact of feminism on philosophy and other disciplines. Additional work required for graduate credit. Recommended Preparation: At least one undergraduate course in philosophy or women's studies.

Phil ID&WS-J442/J542 Philosophy of Mind (3 cr) WSU Phil 442
May be used as core credit in J-3-d. Survey of current philosophical theories of the nature of minds and mental states, including forms of dualism, reductive physicalism, functionalism, and eliminative materialism. Additional assignments required for graduate credit. Recommended Preparation: Phil 202 and 240.

Phil ID&WS-J443/J543 Philosophy of Language (3 cr) WSU Phil 443
May be used as core credit in J-3-d. Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit. Recommended Preparation: Phil 202 and 240.

Phil ID&WS-J470/J570 Philosophy of Law (3 cr) WSU Phil 470
May be used as core credit in J-3-d. Analysis of fundamental philosophical issues in law and legal systems, including the nature of law, relation of law to morality, judicial method, and nature and ascription of rights. Additional work required for graduate credit. Recommended Preparation: Phil 103.

4. Change the cooperative status of the following course [**Effective**: Summer 2007]

Phil ID&WS221 Philosophy in Film (3 cr) WSU Phil 210
The use of film as "philosophical text", discussing philosophical theories and debates presented in films, both old and new.

5. Change the description and title of the following course [**Effective**: Summer 2007]

Phil 450 Ethics in Science~~and Reasoning in Scientific Research and Practice~~ (3 cr)
May be used as core credit in J-3-d. An investigation of social and ethical issues in scientific research and the place of ethics in a scientific worldview. ~~Principles of reasoning in experimental design and research, understanding and evaluating theoretical, statistical, and causal hypotheses; evaluating decisions based on scientific research; the role of values in scientific research; ethical issues involving fraud and deception, human experimentation, animal research, genetic engineering, biotechnology, and/or other areas.~~
Prereq: Phil 103 or 201 or 202 or 240, or Permission

Physics

1. Change the description and prerequisites of the following course [**Effective**: Summer 2007]

Phys ID-J425/J525 Relativity (3 cr) WSU Phys 425
Introduction to the Special and General Theories of Relativity. Principle of relativity, Poincare and Lorentz transformations and their consequences. Four-dimensional formulation of relativistic mechanics and electromagnetism. Principle of equivalence and the geometric theory of gravitation. Additional projects/assignments required for graduate credit.
Prereq for 425**:** Phys 305 and Senior standing
Prereq for 525**:** Admission to physics graduate program or Permission

2. Change the prerequisites of the following course [**Effective**: Summer 2007]

Phys ID&WS-J465/ID&WS-J565 Particle and Nuclear Physics (3 cr) WSU Phys 465/565
Particle production and detection, properties and classification of particles, the quark model of hadrons, symmetries and conservation laws, interactions, grand unification, the strong interaction and nuclear forces, models for nuclear structure and reactions. Additional projects/assignments required for graduate credit.
Prereq for 465**:** Phys 305
Prereq for 565: Admission to physics graduate program or Permission

3. Change the description of the following course [**Effective**: Summer 2007]

Phys ID&WS-J484/J584 Astrophysics (3 cr) WSU Astr 435
Structure and evolution of stars and star systems; celestial mechanics; special and general relativity; cosmology. Additional projects/assignments required for graduate credit.
Prereq for Phys 484: Phys 103, 305, Math 275, or Permission
Prereq for Phys 584: Admission to physics graduate program or Permission

4. Change the description, joint-list status, prerequisites and title of the following courses [**Effective**: Summer 2007]

Phys ID&WS-J463/J563 ~~Introduction to~~ Solid State Physics(3 cr) WSU Phys 463/563
Phys 563 same as MSE 563. Crystal structure and lattice dynamics including elastic and thermal properties of solids; electron dynamics including band theory, theory of metals and semiconductors, superconductivity, and magnetism; special topics chosen by the instructor. Additional projects/assignments required for graduate credit.~~Physics of bulk matter; structure and types of solids, elastic and thermal properties of solids, electric and magnetic properties of solids, theory of conduction in metals and semiconductors.~~
Prereq for 463: Phys 305~~ and 321~~
Prereq or **Coreq** for 463: Phys 322, Phys 342 and Phys 351
Prereq for Phys 563: Admission to physics graduate program or Permission

Phys ID&WS563 Solid State Physics (3 cr) WSU Phys 563

~~Same as MSE 563. Modern theory of metals, semiconductors, and insulators; crystal structure, thermal, electric, and magnetic properties of solids, band theory of solids, crystal imperfections, semiconductors, superconductivity, and photoconductivity.~~ See Phys J463/J563.
~~**Prereq:** Phys 342~~
~~**Prereq** or **Coreq:** Phys 551~~

Psychology and Communication Studies

1. Change the description of the following course [**Effective**: Summer 2007]

Comm 421 Nonverbal Communication (3 cr)
Same as TheF 451. Current theories, research and applied principles of nonverbal communication; in-depth examination of human social and biological development of nonverbal codes, and the role of nonverbal expression in intercultural, interspecies, mediated and organizational contexts.
Prereq: Comm 111

Rangeland Ecology and Management

1. Change the cooperative status of the following course [**Effective**: Summer 2007]

Rnge ~~ID~~459 Rangeland Ecology (2 cr) ~~WSU NATRS 459~~
Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensity of disturbance and management practice. Web only [www.uidaho.edu/range459/]. Recommended Preparation: a course in general ecology or Permission (Fall only).

2. Change the description, prerequisites and title of the following course [**Effective**: Summer 2007]

Rnge 452 Western Wildland Landscapes~~World Biomes: North American Ecosystems~~ (2 cr)
Survey of wildland plant communities of western North America, focusing on their natural history, including the effects of use by human beings, based on their physical, climatic, and biological characteristics.~~A comprehensive survey and analysis of world biomes, which are continental-sized ecosystems. A systems ecology approach will be used to analyze the interrelationships among the environment, flora and fauna, and the major human influences on biomes. Computer-based information technology (geographical information systems, digital media, and interactive multimedia programs) will be used to analyze the structure and function of biomes.~~
Prereq: Rnge 221 or For 221~~Biol 213, 314, Rnge 221, or Permission~~

3. Change the curricular requirements of **Range Livestock Management** (B.S.R.L.M.) [**Effective**: Summer 2007]

The major in range livestock management provides training in animal science with a sound background in the relationship between animals and plants and is intended for students interested in the management or operation of range and pasture beef cattle or sheep operations.

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal and Veterinary Orientation or Rnge 102 Opportunities in Rangeland Ecology and Management (1-2 cr)
AVS 109 The Science of Animals that Serve Humanity (3 cr)
AVS 209 Science of Animal Husbandry (3 cr)
AVS 222 Animal Reproduction and Breeding (3 cr)
AVS 305 Animal Nutrition (4 cr)
AVS 306 Feeds and Ration Formulation (4 cr)
AVS 450 Issues in Animal Agriculture (1 cr)
AVS 474 Beef Cattle Science (3 cr)
Biol 115 Cells and the Evolution of Life (4 cr)
Biol 116 Organisms and Environments (4 cr)
Biol 213 Principles of Biological Structure and Function (4 cr)
Biol 341 Systematic Botany or Rnge 353 Rangeland Plant Identification and Ecology (3 cr)
Chem 111 Principles of Chemistry I (4 cr)
Chem 275 Carbon Compounds (3 cr)
Comm 101 Fundamentals of Public Speaking (2 cr)
Econ 201, 202 Principles of Economics (6 cr)
Engl 317 Technical Writing (3 cr)
Fish 430 Riparian Ecology and Management or Fish 435 Wetland Ecology and Management (3 cr)
For/CSS 235 Society and Natural Resources (3 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry or Math 160 Survey of Calculus (3-4 cr)
Rnge 221 Ecology (3 cr)
Rnge 251 Principles of Range Resources Management (2 cr)
Rnge 357 Rangeland and Riparian Habitat Assessment (3 cr)
Rnge 440 Wildland Restoration Ecology (3 cr)
Rnge 456 Integrated Rangeland Management (3 cr)
Rnge 459 Rangeland Ecology (2 cr)
Rnge 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
Soil 205, 206 The Soil Ecosystem and Lab (4 cr)
Stat 251 Statistical Methods (3 cr)
Courses selected from the following (a minimum of 3 cr in each college) (8 cr):

AVS 218 Artificial Insemination and Pregnancy Detection (2 cr)
AVS 263 Live Animal and Carcass Evaluation (3 cr)
AVS 330 Genetics of Livestock Improvement (3 cr)
AVS 371 Anatomy and Physiology (4 cr)
AVS 452 Physiology of Reproduction (4 cr)
AVS 466 Horse Production, AVS 472 Dairy Cattle Management or AVS 476 Sheep Science (3 cr)
CSS 287 Foundations of Conservation Leadership and Management (2 cr)
Fish/WLF 290 Fish and Wildlife Ecology, Mgt, and Conservation (3 cr)
For 270 Principles of Forest Ecosystem Mgt (2 cr)
Rnge 353 Rangeland Plant Identification and Ecology (3 cr)
Rnge 429 Landscape Ecology (2 cr)
Rnge 452 World Biomes: North American Ecosystems (2 cr)
Rnge 454 Rangeland Weed Management (3 cr)
Electives to total 132 cr for the degree

4. Change the curricular requirements of **Rangeland Ecology and Management** (B.S.Rangeland Ecol.-Mgt) [**Effective**: Summer 2007]

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years
Biol 115 Cells and the Evolution of Life (4 cr)
Biol 116 Organisms and Environments (4 cr)
Biol 213 Principles of Biological Structure and Function (4 cr)
Chem 101 Introduction to Chemistry I or Chem 111 Principles of Chemistry I (4 cr)
Chem 275 Carbon Compounds (3 cr)
Comm 101 Fundamentals of Public Speaking (2 cr)
Econ 201, 202 Principles of Economics (6 cr)
For/CSS 235 Society and Natural Resources (3 cr)
Math 143 Pre-calculus Algebra and Analytic Geometry or Math 160 Survey of Calculus (3-4 cr)
Rnge 102 Opportunities in Rangeland Ecology and Management (1 cr)
Rnge/WLF/For 221 Ecology (3 cr)
Rnge 251 Principles of Range Resources Management (2 cr)
Soil 205, 206 The Soil Ecosystem and Lab (4 cr)
Stat 251 Principles of Statistics (3 cr)

Third and Fourth Years
Biol 341 Systematic Botany (3 cr)
CSS/ForP/For/Rnge 470 Interdisciplinary Natural Resource Planning (3 cr)
Engl 317 Technical Writing or Engl 313 Business Writing (3 cr)
Fish 430 Riperian Ecology and Management or Fish 435 Wetland Ecology and Management (3 cr)
Geog 385 GIS Primer (3 cr)
Rnge 351 Wildland Plant Identification Field Studies (3 cr)
~~Rnge 353 Rangeland Plant Identification and Ecology (3 cr)~~
Rnge 357 Rangeland and Riparian Habitat Assessment (3 cr)
Rnge 440 Wildland Restoration Ecology (3 cr)
Rnge 452 World Biomes: North American Ecosystems or For 429 Landscape Ecology (2 cr)
Rnge 456 Integrated Rangeland Management (3 cr)
Rnge 459 Rangeland Ecology (2 cr)
Rnge 460 Rangeland Ecology Current Topics and Field Studies (1 cr)
Soil 454 Soil Development and Classification (3 cr)

Students must also complete 19 credits of advisor approved electives in emphasis areas that include: Restoration Ecology, Field Botany, Spatial Ecology, Watershed Science, Wildland Fire Management, Invasive Plant Management, Wildlife Habitat Management, Tribal Land Management, Rangeland Economics, Natural Resource Communication, and Environmental Consulting.
Electives to total 128 credits for the degree

Statistics

1. Change the co-requisites, prerequisites and description and prerequisites of the following course [**Effective**: Summer 2007]

Stat ID&WS550 Regression (3 cr) WSU Stat 535
Theory and application of regression models including linear, nonlinear, and generalized linear models. Topics include model specification, point and interval estimators, exact and asymptotic sampling distributions, tests of general linear hypotheses, prediction, influence, multicollinearity, assessment of model fit, and model selection.~~Simple multiple and polynomial regression in matrix format; estimation, testing, and prediction; stepwise and other numerical methods, examination of residuals, weighted least squares and nonlinear models.~~
Prereq: Math 330 and Stat 451
Coreq: ~~Math 330, Stat 451 and~~ Stat 452

2. Change the cooperative status of the following course [**Effective**: Summer 2007]

Stat ID446 Six Sigma Innovation (3 cr) WSU Stat 446

Six Sigma is a highly structured strategy for acquiring, assessing, and applying customer, competitor, and enterprise intelligence for the purposes of product, system or enterprise innovation and design. It has two major thrusts, one that is directed toward significant innovation or improvement of an existing product, process or service that uses an approach called DMAIC (Define - Measure - Analyze - Improve - Control) and a second dedicated to design of new processes, products or services. This course focuses on the innovation aspects of Six Sigma. Recommended preparation: Stat 401. (Spring, Alt/yrs)
Prereq: Stat 251, Stat 271, or Stat 301

Theatre and Film

1. Add the following courses [**Effective**: Summer 2007]

TheF J445/J545 Film & Theatre of the Holocaust (3 cr)
This course studies the plays and films of the Holocaust examining the unique relationship between historical fact and the artist's response to the impact of those facts on the human character. The course treats the films and dramatic literature of the Holocaust as a unique genre of "survivalist" literature of atrocity, which is as much a response to one of history's darkest periods as it is an emergence of a new artistic form. Additional projects/assignments required for graduate credit.

TheF J446/J546 Hollywood in the 1960s and 70s (3 cr)
A historical and critical survey of stylistically innovative Hollywood fiction features produced in the 1960s and 1970s. Additional projects/assignments required for graduate credit. Recommended Preparation: any university level film course.

TheF 451 Nonverbal Communication (3 cr)
See Comm 421.

TheF 466 Scene Painting (3 cr)
Introduction to the art, practice and technique of large-scale decorative painting for the stage. Development of brush and application techniques, color mixing, and layout skills. Provides instruction in the imitation of wood, marble, brick and stone, as well as sections on stenciling, faux finishing and trompe l'oiel. (Fall only)
Prereq: TheF 201 or Permission

TheF 507 (s) Film Directors (3 cr, max 9)
See TheF J415/J507.

TheF 541 Foundations of Screenwriting (3 cr)
See TheF J441/J541.

TheF 545 Film & Theatre of the Holocaust (3 cr)
See TheF J445/J545.

TheF 546 Hollywood in the 1960s and 70s (3 cr)
See TheF J446/J546.

TheF 583 (s) Film Genres (3 cr, max 9)
See TheF J383/J583.

2. Change the description and joint-listing of the following courses [**Effective**: Summer 2007]

TheF J415/J507 (s) Film Directors (3 cr, max 9)
An in-depth study of the films of a filmmaker of international stature and significance. Additional projects/assignments required for graduate credit. Recommended Preparation: any college level film course.

TheF J441/J541 Foundations of Screenwriting (3 cr)
Introduction to the fundamental elements of screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: Permission

3. Change the prerequisites of the following course [**Effective**: Summer 2007]

TheF 406 Design Studio (cr arr)
Advanced design studio.
Prereq: TheF 201, 202, and 205; or Permission

4. Change the description, prerequisites and title of the following course [**Effective**: Summer 2007]

TheF 100 ~~Freshman~~ Theatre and Film Seminar (3 cr)
May be used as core credit in J-3-d. Explores collaborative theatre and film processes and the roles and responsibilities of theatre practitioners and film industry professionals. Focus is also given to discipline-based research and writing methods.~~Course explores collaborative theatrical processes and the roles and responsibilities of theatre practitioners. Focus is also given to discipline-based research and writing methods.~~
Prereq: Theatre and Film majors and minors only

5. Change the curricular requirements of the **Film Minor** [**Effective**: Summer 2007]

TheF 100 Theatre and Film Seminar or TheF 188 Introduction to Film Studies (3 cr)
TheF 221 History of World Cinema I (3 cr)
TheF 222 History of World Cinema II (3 cr)
~~12~~ 9 additional credits chosen from the following list of courses, or approved electives (at least 6 credits must be at the upper division level):

~~TheF 201 Scene Design I (3 cr)~~
~~TheF 205 Lighting Design I (3 cr)~~
TheF 314 French Cinema (3 cr)
TheF 330 Literature and Film (3 cr)
TheF 383 Film Genres (3 cr, max 9)
TheF 386 Documentary Film (3 cr)
TheF 391 Hispanic Film (3 cr)
TheF 392 Contemporary European Fiction Film (3 cr)
TheF 408 Film as a Controversial Medium (3 cr)
TheF 415 Film Directors (s) (3 cr, max 9)
TheF 419 U.S. Independent Film (3 cr)
TheF 420 International Cinema and National Literatures (s) (3 cr)
TheF 430 Perspectives in Film (3 cr)
TheF 431 Women in Cinema: The International Scene (3 cr)
TheF 441 ~~Foundations of~~ Screenwriting (3 cr)
~~TheF 443 On-Camera Audition Techniques (1-3 cr, Max 3)~~
TheF 445 Film & Theatre of the Holocaust (3 cr)
TheF 446 Hollywood in the 1960s and 70s (3 cr)

****

FOR THE FACULTY'S INFORMATION

Correction to General Curriculum Report 240:

Changes to Cooperative Courses Approved Since Last General Curriculum Report:
(ID = taught only at UI; WS = taught only at WSU, LC = taught only at LCSC; ID&WS = can be taught at both UI & WSU; ID&LC = can be taught at both UI & LCSC)