

UNIVERSITY SENATE AGENDA

EBERLY AUDITORIUM

February 24, 2009

3:30 – 5:00 p.m.

Approval of Order

- A. Approval of minutes of the meeting of January 27, 2009
- B. Approval of current agenda items and order

Reports and Announcements

- A. President Atwater
- B. Provost Intemann
- C. Chairperson Broad
- D. Vice Chairperson Moss

Standing Committee Reports

Chairperson

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New Business

Adjournment

iii. **GEOS 203 Surficial Processes**

3c-3l-4cr

Prerequisite: Grade of C or better in GEOS 201

Introduces students to the geological processes which shape the Earth's surface, from uplift and erosion of mountains to the transport of sediment and subsequent formation of sedimentary rocks. Focuses are on the interaction of underlying tectonic forces with the natural cycles of the Earth's atmosphere and hydrosphere and the subsequent evolution of both landscape and surface deposits.

Rationale: Designed as a core class for B.S. Geology/Geology Track and B.S. Geology/ Environmental Track majors, and as a controlled elective for Earth and Space Science Education majors and Geology minors. The content cannot be incorporated into an existing course as it extracts introductory elements from a number of sub-disciplines within the Geosciences. Course reflects shifting emphases in the broader field of the geosciences.

iv. **GEOS 301 Mineralogy and Petrology**

3c-3l-4cr

Prerequisites: Grade of C or better in GEOS 201 and 202

Introduces students to crystallography, crystal chemistry, optical properties and phase equilibria of minerals pertinent to geology, Earth resources and technology. Introduces the origins of igneous and metamorphic rocks based on a plate tectonic framework emphasizing melting and crystallization processes as well as metamorphic reactions. Laboratory exercises will focus on mineral and rock identification and interpretation as well as quantitative techniques such as x-ray diffractometry and optical microscopy.

Rationale: Combines content previously covered in GEOS 220 Mineralogy and GEOS 320 Igneous and Metamorphic Petrology. Will be a required upper-level course for students in Geology Track or as a controlled elective for students in the Environmental Geology Track.

v. **GEOS 401 Northern Rockies Seminar**

1c-0l-1cr

Prerequisites: Grade of C or better in GEOS 201 and 202; instructor permission required

A seminar introduction to the geology and tectonic history of the northern Rocky Mountains. Includes instruction in the techniques of field mapping and geologic interpretation. Designed to prepare students specifically for GEOS 402.

Rationale: Designed as a prerequisite for GEOS 402 Northern Rockies Field Workshop in order to prepare students for the field-based exercises conducted in that class. One goal of the Geoscience Department's program revisions is to make field-based courses more accessible to students earlier in their IUP career.

vi. **GEOS 403 Newfoundland Seminar**

1c-0l-1cr

Prerequisites: Grade of C or better in GEOS 201 and 202; instructor permission required. Designed to prepare students for their IUP career.)JTJ
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vii. GEOS 405 American Southwest Seminar

1c-01-1cr

Prerequisites: Grade of C or better in GEOS 201 and 202; instructor permission required

A seminar introduction to the geology of

plants and animals), and extinction (asteroid impact, volcanism, climate change). Not open to Geoscience majors or minors.

Proposed Catalog Description:

GEOS 251 The Age of Dinosaurs

3c-0l-3cr

Prerequisite: No Geoscience majors or minors

A thorough introduction to dinosaurs and the world they inhabited. Topics include the most current theories regarding dinosaur biology (behavior, metabolism, evolution), ecology (greenhouse climate, associated plants and animals), and extinction (asteroid impact, volcanism, climate change).

Rationale: The changes in course numbers for these two courses are proposed to be consistent with the new course numbering system. The stipulation that Geoscience majors and minors may not take this class has been moved to the Prerequisite line to be consistent.

iii. Course Number and Catalog Description Change:

Current Catalog Description:

GEOS 221 Physical Resources of the Earth

3c-0l-3cr

An introduction to mineral, energy, and water resources of the earth; genesis of ore depositions; exploration, exploitation, and utilization of resources; impact of exploitation of resources on the environment and on humankind. Includes field trips which occur on weekends.

Proposed Catalog Description:

GEOS 252 Physical Resources of the Earth

3c-0l-3cr

Prerequisite: No Geoscience majors or minors

An introduction to mineral, energy, and water resources of the earth; genesis of ore depositions; exploration, exploitation, and utilization of resources; impact of exploitation of resources on the environment and on humankind.

v. Course Number and Catalog Description Change:

Current Catalog Description:

GEOS 333 Soils and Soil Geochemistry

2c-3l-3cr

vii. Course Number and Catalog Description Change:

Current Catalog Description:

GEOS 411 Sedimentary Petrology

2c-3l-3cr

Prerequisite: GEOS 321 or instructor permission

The study of sediments and sedimentary rocks with emphasis on interpreting ancient environments of deposition utilizing sieve analysis, hand lens, and petrographic microscope. Includes field trips which may occur on weekends.

Proposed Catalog Description:

GEOS 355 Sedimentary Petrology

2c-3l-3cr

Prerequisites: Grade of C or better in GEOS 202 and 203

The study of sediments and sedimentary rocks with emphasis on interpreting ancient environments of deposition utilizing sieve analysis, hand lens, and petrographic microscope. Includes field trips which may occur on weekends.

Rationale: The change in course number is proposed to be consistent with the Geoscience Department's new course numbering system. The prerequisite change reflects the creation of a new introductory Geoscience sequence GEOS 201-203. Material that was formerly required in GEOS 220 Mineralogy will now be taught as part of GEOS 201 Foundations of Geology. The old prerequisite listed was the incorrect course number—it should have been GEOS 220 Mineralogy.

viii. Course Number, Course Title, and Catalog Description Change:

Current Catalog Description:

GEOS 336 Geology of Northern Rockies

var-3cr

Prerequisite: Instructor permission required, at least 14cr of Geoscience courses recommended

A field study of the major geologic features and relationships involved in the development of the northern Rocky Mountains. National Park and Monument areas of South Dakota, Wyoming and Montana are included among the areas investigated. (Three weeks, taught in the summer only).

Proposed Catalog Description:

GEOS 402 Northern Rockies Field Workshop

var-3cr

Prerequisite: GEOS 401; instructor permission required

A field study of the major geologic features and relationships involved in the development of the northern

ix. Course Number, Course Title, and Catalog Description Change:

Current Catalog Description:

GEOS 337 Geology of Newfoundland

var-3cr

Prerequisite: Instructor permission required, at least 14cr of Geoscience courses recommended
A field course designed to utilize the exceptional and diverse geologic features of Newfoundland for instruction of departmental majors and minors in the tectonic analysis utilizing sedimentologic, stratigraphic, and paleontologic observations. (Three weeks, taught in the summer only).

Proposed Catalog Description:

GEOS 404 Newfoundland Field Workshop

var-3cr

Prerequisites: GEOS 403; instructor permission and valid passport required
A field course designed to utilize the exceptional and diverse geologic features of Newfoundland for instruction of departmental majors and minors in the tectonic analysis utilizing sedimentologic, stratigraphic, and paleontologic observations. (Three weeks, taught in the summer only).

x. Course Number, Course Title, and Catalog Description Change:

Current Catalog Description:

GEOS 338 Geology of American Southwest

var-3cr

Prerequisite: Instructor permission required, at least 14cr of Geoscience courses recommended
A field study of the major geologic features and relationships exposed in the American Southwest, including the Colorado Plateau, the Rio Grande Rift, Death Valley, and parts of the Southern Rocky Mountains. (Three weeks, taught in the summer only).

Proposed Catalog Description:

GEOS 406 American Southwest Field Workshop

var-3cr

Prerequisite: GEOS 405; instructor permission required
A field study of the major geologic features and relationships exposed in the American Southwest, including the Colorado Plateau, the Rio Grande Rift, Death Valley, and parts of the eastern Sierra Nevada in California. (Three weeks, taught in the summer only).

xi. Course Number, Course Title, and Catalog Description Change:

Current Catalog Description:

GEOS 441 Carbonate Geology-Florida

var-3cr

Prerequisite: 17cr geology courses or written instructor permission
Two to three weeks of field study in Florida Keys. Conducted from base camp in Florida Keys and consists of both land and water work as the different carbonate environments in the Keys, Florida Bay, and the Atlantic reef tract are studied.

Proposed Catalog Description

GEOS 408 Carbonate Geology Field Workshop

var-3cr

Prerequisite: GEOS 407; instructor permission

Two to three weeks of field study in Florida Keys and at Andros Island, Bahamas. Conducted from base camps in Florida Keys and at Forfar Biological Field Station (Bahamas) and consists of both land and marine studies of the different carbonate environments in the Keys, Florida Bay, and along the Atlantic reef tract. Valid passport and basic swimming skills required.

Rationale for GEOS 402, 404, 406, and 408: Seventeen or 14 credits of Geoscience courses were previously recommended with the final decision as to whether a student could take the course left up to the instructor. As one goal of the Geoscience Department's proposed program revisions is to make these field courses more accessible to students earlier in their IUP careers, we are removing this recommendation. To prepare students for the field course we are adding as a prerequisite a one-credit pre-trip seminar (GEOS 401, 403, 405, or 407). These seminars will introduce the regional geology of the field area, discuss controversies in the interpretation of the region's geologic history, and develop the skills necessary to successfully complete the field exercises conducted on the trip. The change in course numbers is proposed to be consistent with the department's new course numbering system.

xii. Course Number Change

Current Course Number: GEOS 380 Research Methods in the Geosciences

Proposed Course Number: GEOS 470 Research Methods in the Geosciences

Rationale: The change in course number is proposed to be consistent with the Geoscience Department's new course numbering system.

c. Course Revisions some with other changes

i. Course Revision, Course Number Change, and Catalog Description Change

Current Catalog Description:

GEOS 325 Structural Geology

2c-3l-3cr

Prerequisites: GEOS 131 and 132 or instructor permission

The study of primary structures, contacts, rock mechanics, joints, faults, folds, foliation, and lineation. Includes work with geologic maps and structure sections. Brunton compass, orthographic and stereographic projections. Includes field trips which may occur on weekends.

Proposed Catalog Description:

GEOS 302 Structural Geology

3c-3l-4cr

Prerequisites: Grade of C or better in GEOS 201 and 202

Study of the geometry, kinematics and dynamics of the primary structures of the Earth's crust. Focuses on the geometric relations between geologic contacts and surface topography, the description of primary structures such as foliations, lineations, folds and fractures, the constraints on crustal motions, and the relation between stress and strain. Students are introduced to the tools of

rock mechanics and spherical geometry. The laboratory includes extensive work with geologic maps and profiles, the Brunton compass, and orthographic and stereographic projections. Includes field trips which may occur on weekends.

Rationale: The content within the discipline of Structural Geology has expanded recently in response to the development of new scientific tools. Of particular significance in this regard is the development of satellite surveying capabilities that allow scientists to observe contemporary movements of Earth's surface. This, in conjunction with the development of new geochemical dating methods, has led to the expansion of Structural Geology to include what have become known as Neotectonics and Active Tectonics. These sub-disciplines address dynamic aspects of Earth's architecture. Moreover, modern Structural Geology teaching typically includes more content on earthquake processes (from seismology) than it used to.

ii. Course Revision, Course Number Change, and Catalog Description Change

Current Catalog Description:

GEOS 326 Field Geology

2c-3l-3cr

Prerequisite: GEOS 325

Principles and techniques of field geology with emphasis on developing field skills using Brunton compass, aerial photographs, topographic maps, altimeter, Jacob staff, and rock color charts. Field projects involve techniques of field note-taking, measuring and describing stratigraphic sections, geologic field mapping and analysis, construction of geologic maps and structure sections, and report writing. Includes field trips which may occur on weekends.

Proposed Catalog Description:

GEOS 303 Field Geology

3c-3l-4cr

Prerequisites: Grade of C or better in GEOS 201 and 202

Principles and techniques of field geology with emphasis on developing field skills using a Brunton compass, topographic maps, Jacobs staff, stereographic projections, field computers and the Global Positioning System. Field projects involve techniques of field note-taking, measuring and describing stratigraphic sections, bedrock mapping and analysis, environmental assessment, construction of geologic maps and structure sections. Includes field trips which may occur on weekends.

Rationale: The scope of Field Geology has expanded in recent years for a number of reasons: (1) the

iii. Course Revision and Catalog Description Change:

Current Catalog Description:

course has traditionally focused on the geochemistry of natural waters and stable isotope geochemistry. The new course will maintain this focus plus add substantially to depth of coverage of stable isotope geochemistry, and add radiogenic isotope geochemistry to the curriculum. To present this material adequately, a third lecture hour per week is necessary.

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v. Course Revision, Course Number Change, and Catalog Description Change

Current Catalog Description:

GEOS 331 Hydrogeology

2c-3l-3cr

Prerequisites: MATH 121-122, GEOS 121-122/123, or permission

Rationale: Currently a requirement for the Earth and Space Science Education major, and most of the students who take it are in this major. Increasing the emphasis of geologic topics will make this course appropriate for geology and environmental geology majors as well. Adding one lecture hour per week will allow time for more in-depth learning activities, specifically the in-depth study of one or more problems or issues in planetary geology. Students will utilize available planetary images, spectral data, and other information to reconstruct the geologic history of a class of features, a region of a planet, or a minor body (asteroid or moon).

vii. Course Revision and Catalog Description Change:

Current Catalog Description:

GEOS 342 Stellar Astronomy

2c-3l-3cr

Prerequisites: MATH 121 and PHYS 111

Fundamentals of astronomy, with emphasis on sun, stars, galaxies, the sidereal universe, and use of spectroscopy for gathering astronomical data.

Proposed Catalog Description:

GEOS 342 Stellar Astronomy

3c-3l-4cr

Prerequisites: MATH 121, PHYS 111 or instructor permission

Evolution and nature of objects in the universe, including the Sun, stars, and galaxies. Study of methods for gathering astronomical data on motion, distance, and composition.

Rationale: Currently a requirement for the Earth and Space Science Education major. Incorporating the use of the planetarium and other technologies for teaching will reinforce significant concepts in stellar astronomy. The extra lecture hour will permit additional in-depth teaching and learning including material from the former GEOS 350 Operation of the Planetarium.

viii. Course Revision, Course Number Change, and Catalog Description Change

Current Catalog Description:

GEOS 131 Historical Geology

3c-0l-3cr

Prerequisites: GEOS 121-122

Corequisite: GEOS 132

An introduction to the history of Earth, including the fossil record and the history of biologic evolution. Topics also include the growth and tectonic interactions of oceans and continents and the physical evolution of the earth's atmosphere, lithosphere, and hydrosphere. Designed to prepare majors and minors for upper-level geology classes.

Proposed Catalog Description:

GEOS 351 Historical Geology

Prerequisites:

3c-3l-4cr

x. Course Revision, Number Change, and Catalog Description Change:

Current Catalog Description:

show the “big picture” of how oceans interact with the atmosphere, lithosphere, and biosphere. To present this material adequately, a third lecture hour per week is necessary. The prerequisite change reflects the creation of the new introductory courses GEOS 201-203. The elimination of PHYS 111 and MATH 121 as prerequisites reflects the fact that the essential components of these courses will be taught in GEOS 202 Quantitative Methods in the Geosciences. The change in course number is proposed to be consistent with the Geoscience Department's new course numbering system.

xii. Course Revision, Title Change and Catalog Description Change:

Current Catalog Description:

GEOS 371 Meteorology I

2c-3l-3cr

Prerequisite: One year of physical science or physics

An introduction to meteorological sciences; composition and structure of the atmosphere; radiation principles; elementary thermodynamics and heat balance.

Proposed Catalog Description:

GEOS 371 Meteorology

2c-3l-3cr

Prerequisites: Grade of C or better in GEOS 201 and 202

Introduction to meteorological sciences; composition and structure of the atmosphere; radiation principles; elementary thermodynamics and heat balance.

Rationale: The field of meteorology encompasses a wide variety of atmospheric science including heat and energy in the atmosphere, weather measurement and prediction, and global climate change. In previous years, more emphasis was placed on measuring/predicting weather. In the revised course, students will be exposed to this content but more emphasis will be placed on the global pattern of weather and longer-term climatic changes.

xiii. Course Revision and Catalog Description Change:

Current Catalog Description:

GEOS 480 Geoscience Seminar

var-1cr

Prerequisite: GEOS 380, senior standing

For seniors majoring in some aspect of geoscience. The seminar 1) provides an opportunity to prepare, formally present, and defend a scientific paper based either on his/her own research or on a topic chosen with the approval of instructor and 2) provides opportunity to discuss topics presented by other students, faculty, or guests.

Proposed Catalog Description:

GEOS 480 Geoscience Seminar

2c-0l-2cr

Prerequisite: GEOS 470, Senior standing

For seniors majoring in some aspect of geoscience. The seminar 1) provides an opportunity to prepare, formally present, and defend a scientific paper based either on his/her own research or on a topic chosen

with the approval of instructor and 2) provides opportunity to discuss topics presented by other students, faculty, or guests.

Rationale: Graduating seniors are required to prepare, present and defend a formal research presentation as part of their graduating requirements. Requires considerable one-on-one time with faculty mentors to prepare individual research results. In addition, students are asked to collaboratively critique each other through weekly practice sessions. A two-hour credit load more fairly represents the work associated with this course than was previously given to students. The prerequisite number reflects the change in number of the prerequisite course.

d. Course Deletions:

- i. GEOS 111 Earth Science for Educators I**
- ii. GEOS 112 Earth Science for Educators I Lab**
- iii. GEOS 113 Earth Science for Educators II**
- iv. GEOS 114 Earth Science for Educators II Lab**

Rationale: GEOS 111, 113 and their accompanying labs GEOS 112, 114 were originally designed for two student cohorts: Education majors in the General Science Education degree program and Education majors in Chemistry and Physics. The General Science Education degree program is in the process of being placed into moratorium because the state certification it prepared students for (General Science) is no longer required for teaching general science courses at the middle-school level. This change has eliminated a majority (90-95%) of the 12-15 students who normally enrolled in these course sequences. Only a few chemistry (2-3) and physics (0-1) education majors currently enroll in this course per semester, and on their own, they do not provide a sufficient enrollment to allow the classes to run.

- v. GEOS 121 Physical Geology**
- vi. GEOS 122 Physical Geology Lab**

Rationale: Material covered in these courses will be covered in a new course GEOS 201 Foundations of Geology which is being created as part of a department curriculum restructuring.

vii. GEOS 123 Applied Mathematics in Geosciences

Rationale: GEOS 123 Applied Mathematics in the Geosciences was an experimental supplemental lab section intended to increase the mathematical literacy of freshman year Geoscience majors by showing them how calculus could be used to analyze geologically relevant problems. Unfortunately, the majority of students entering the Geology and Environmental Geology tracks did not place directly into calculus, and therefore could not take this section as it was designed to be taken. The course was offered only once.

viii. GEOS 132 Historical Geology Laboratory

Rationale: The majority of the material covered in this course is being incorporated into the revised GEOS 351 Historical Geology. Essential foundational components of this lab will be incorporated into new courses.

ix. GEOS 141 Introduction to Ocean Science

Rationale: This course has not been taught for more than five years and is no longer considered an essential component of our curricular offerings.

x. GEOS 220 Mineralogy

Rationale: Material covered in this course will be combined with material from GEOS 320 Igneous and Metamorphic Petrology into a new course GEOS 301 Mineralogy and Petrology. This change reflects a de-emphasis of certain curricular components of both of these courses such that it is now possible to teach them in a single 3c-3l-4cr course.

xi. GEOS 320 Igneous and Metamorphic Petrology

Rationale: Material covered in this course will be combined with material from GEOS 220 Mineralogy into a new course GEOS 301 Mineralogy and Petrology.

xii. GEOS 350 Operation of the Planetarium

Rationale: This course dates back to the origin of the IUP Geoscience program in the 1960s. Since that time the planetarium has shifted from the premier new teaching technology in space science education to one of many technologies. Computers are common in science teaching, and schools are more likely to purchase and use modern, automated telescopes than build a planetarium facility. Rather than specific preparation for operating a planetarium, this course has become one where students practice presenting science lessons using appropriate technology. The essential content of this course will be incorporated into GEOS 342 Stellar Astronomy.

xiii. GEOS 440 Subsurface Geology

Rationale: GEOS 440 Subsurface Geology was not a core course that introduced new geological concepts, but rather a course that took concepts students had already learned and applied them specifically to the kinds of problems faced in the exploration of the

e. Program Revisions

Current Program:

Bachelor of Science- Geology/Geology Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:
Mathematics: MATH 121 or 123
Natural Science: CHEM 111-112 or CHEM 113-114
Liberal Studies Electives: 4cr, MATH 122 or 124, no courses with GEOS prefix

Major:

Geoscience Core:

GEOS 121	Physical Geology	3cr
GEOS 122	Physical Geology Laboratory	1cr
GEOS 131	Historical Geology	3cr
GEOS 132	Historical Geology Laboratory	1cr
GEOS 220	Mineralogy	3cr
GEOS 320	Igneous and Metamorphic Petrology	3cr
GEOS 325	Structural Geology	3cr
GEOS 326	Field Geology	3cr
GEOS 380	Research Methods in the Geosciences	2cr
GEOS 411	Sedimentary Petrology	3cr
GEOS 412	Stratigraphy	3cr
GEOS 480	Geoscience Seminar	1cr

Geology Track:

GEOS 330	Paleontology	3cr
GEOS 362	Plate Tectonics	3cr
PHYS 111	Physics I Lecture	3cr
PHYS 121	Physics I Lab	1cr
PHYS 112	Physics II Lecture	3cr
PHYS 122	Physics II Lab	1cr

Controlled Electives:

Select three courses from the following:
 GEOG 316, MATH 216, GEOS courses 300 or above (1)

Other Requirements:

Foreign Language Intermediate-Level (2) 0-6cr

Free Electives:

11-18

Total Degree Requirements:

120

- (1) Up to 3cr of a summer field camp, internship, or independent study, all of which must be approved by the department, may be applied toward controlled electives.
- (2) 6cr of computer language may substitute for the foreign language requirement: COSC 110 and COSC 310 (recommended), or other higher-level COSC courses with department permission in consultation with the Computer Science Department.

Proposed Program:

Bachelor of Science- Geology/Geology Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications: 50
Mathematics: MATH 121
Natural Science: CHEM 111-112 or CHEM 113-114
Liberal Studies Electives: 4cr, MATH 122, no courses with GEOS prefix

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Major:

Required Courses:

GEOS 201	Foundations of Geology	4cr
GEOS 202	Quantitative Methods in the Geosciences	2cr
GEOS 203	Surficial Processes	4cr
GEOS 301	Mineralogy and Petrology	4cr
GEOS 302	Structural Geology	4cr
One of the following: (1)		
GEOS 303, 401-402, 403-404, 405-406, 407-408		4cr
GEOS 470	Research Methods in the Geosciences	2cr
GEOS 480	Geoscience Seminar	2cr
PHYS 111	Physics I Lecture	3cr
PHYS 121	Physics I Lab	1cr
PHYS 112	Physics II Lecture	3cr
PHYS 122	Physics II Lab	1cr

23-24 Controlled Electives:

Select 19cr from the following list: (2)
 One 100- or 200-level GEOS course
 Any 300-level GEOS course
 Any 400-level GEOS course
 BIOL 111, 112
 CHEM 231, 232, 322, 323, 341
 GEOG 316, 415
 MATH 216 or 217, 241
 PHYS 342
 COSC 250, 310, 362

Other Requirements:

Foreign Language Intermediate-Level (3) 0-6cr

Free Electives

11-17

Total Degree Requirements:

120

- (1) Up to 4cr of a summer field camp, internship, or independent study, all of which must be approved by the department, may substitute for GEOS 303 or a Geoscience Field Workshop.
- (2) Only one Geoscience Field Workshop (including prerequisite 1cr Seminar) may be applied toward controlled electives. Credits from up to two non-GEOS courses may be applied toward controlled electives.
- (3) 6cr of computer language may substitute for the foreign language requirement: COSC 110 and 210 (recommended), other higher-level COSC courses with department permission in consultation with the Computer Science Department.

Current Program:
Bachelor of Science- Geology/Environmental Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:
Mathematics: MATH 121 or 123
Natural Science: CHEM 111-112 or CHEM 113-114
Liberal Studies Electives: 7cr, MATH 122 or 124, PHYS 111, no courses with GEOS prefix

Major:

Geoscience Core:

GEOS 121 Physical Geology
GEOS 122 Physical Geology Laboratory
GEOS 131 Historical Geology
GEOS 132 Historical Geology Laboratory
GEOS 220 Mineralogy
GEOS 320 Igneous and Metamorphic Petrology
GEOS 325 Structural Geology
GEOS 326 Field Geology
GEOS 380 Research Methods in the Geosciences
GEOS 411 Sedimentary Petrology
GEOS 412 Stratigraphy *or*
GEOS 327 Geomorphology
GEOS 480 Geoscience2 (OS 412 gT)3(logy)TJ8dGeologyrd7(ric)TJ-0.0019 Tc 28143 50 T 639158 Td[)-7(2M)4(9M)4(412 gT)3(logy)TJ84ID 31 BDC /TT0 1.0023

Proposed Program:
Bachelor of Science- Geology/Environmental Track

53 Liberal Studies: As outlined in Liberal Studies section with the following specifications: **50**
Mathematics: MATH 121
Natural Science: CHEM 111-112 or CHEM 113-114
Liberal Studies Electives: 4cr, MATH 122, no courses with GEOS prefix

Current Program:

Bachelor of Science in Education—Earth and Space Science*

Liberal Studies: As outlined in Liberal Studies section with the following specifications:

Mathematics: MATH 121

Natural Science: CHEM 111-112

Social Science: PSYC 101

Liberal Studies Electives: 6cr, MATH 217, PHYS 111, no courses with GEOS prefix

Proposed Program:

Bachelor of Science in Education—Earth and Space Science*

52 **Liberal Studies:** As outlined in Liberal Studies section with the following specifications:

Mathematics: MATH 121

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Current Catalog Description:

Minor–Geology

17

Required Courses:

GEOS 121 Physical Geology	3cr
GEOS 122 Physical Geology Laboratory	1cr
GEOS 131 Historical Geology	3cr
GEOS 132 Historical Geology Laboratory	1cr
Three upper-level (300 or higher) courses in Geology	9cr

Proposed Catalog Description:

Minor in Geology

Required Courses:

18

GEOS 201 Foundations of Geology	4cr
GEOS 202 Quantitative Methods in the Geosciences	2cr
12 credits from the following list:	12cr
GEOS 203 Surficial Geology	
Any 300-level GEOS course	
Any 400-level GEOS course, except GEOS 470 and 480 (1)	

(1) Only one Geoscience Field Workshop (including prerequisite Seminar) can be counted toward the minor.

Rationale: Never has the need for broad public understanding of our Earth and its dynamic systems been as critical as at present. Our understanding of large-scale geological processes and the volume of knowledge encompassed by the geosciences have grown exponentially over the past several decades. At the same time, our pedagogical appreciation of “how students think and learn” has driven a substantial shift in our approach to teaching science. In a series of meetings the department outlined a number of goals, which would significantly improve our programs both pedagogically and mechanically.

Constructing a Strong Student Knowledge/Skills Base: It is essential that students receive a complete education in the core material of their chosen discipline. Students must learn to recognize rock and mineral specimens and learn their chemical formulas, understand the history of the Earth, recognize surficial features and how geologic processes shape them, etc. We have developed a “core” set of courses for each track using existing course offerings as well as new courses that provide breadth of knowledge and skills that are critical to the training of future geoscientists and Earth science educators. Students’ first steps into the programs will now occur through a series of three introductory courses that will develop the standard knowledge base and numerical and foundational skills of the discipline using creative new pedagogy of team and active learning exercises rather than the traditional “lecture/lab.”

Developing Collaborative and Experiential Learning: Meaningful participatory experience can have a profound impact on student intellectual development and may be the greatest single influence to transform young science students into young scientists. Pedagogical evidence clearly supports the benefits of active learning. It enhances professional skills such science and math competency, data analysis, communication, etc. It also develops personal attitudes, increases confidence and builds intrinsic interest in learning. In our new

programs, we capitalize on existing strengths we offer through interactive, hands-on learning and integrate new opportunities for paired Seminar-Field Workshop courses. We are modifying our traditional field trips into project-based field experiences unique to the particular field area. In addition we are developing a preliminary one-credit seminar for each Field Workshop to introduce students to the necessary background and skills needed.

Fostering Creative Thought and Critical Analysis:

Rationale:

Rationale: The Philosophy Department recently added a new course, PHIL 110: Reasoning and the Law, which is appropriate to add to the required courses in the PHIL pre-law track. Rather than requiring PHIL 101: Informal Logic, the new program requires students to take either PHIL 101 or PHIL 110.

4. Department of Political Science—Program Revision

Current Program:

Bachelor of Arts – Political Science/Pre-Law Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications: **51**
Mathematics: 3cr
Social Science: PLSC 111
Liberal Studies Electives: 9cr, no courses with PLSC prefix

College:
 Foreign Language Intermediate Level (1) **0-6**

Major: **33**
Required Courses:
 PLSC 101 World Politics 3cr(2)
 PLSC 111 American Politics *cr(3)
Controlled Electives: 30cr

At least one course in three of the first four areas:
American Studies: PLSC 251, 300, 346, 350, 351, 353, 354, 355, 356, 357, 358, 359
Political Theory: PLSC 360, 361, 362
Public Policy and Administration: PLSC 250, 370, 371, 444
International Studies: PLSC 280, 282, 283, 285, 320, 321, 380, 382, 383, 384, 385, 386, 387, 388, 389 (4)
General Political Science: PLSC 300 (strongly recommended), PLSC 377, 480, 481, 482, 485, 493

Other Requirements: Pre-Law Interdisciplinary Track **15-21**
 Seven courses, including at least one from each of six areas:
Business: ACCT 201, ACCT 202, BLAW 235
Criminology: CRIM 210, 215, 255
Economics: ECON 121, 122, 332
English: ENGL 212, 220, 310
History: HIST 320, 321, 346
Philosophy: PHIL 101, 222, 450

Free Electives: **9-21**

Total Degree Requirements: **120**

- (1) Intermediate-level Foreign Language may be included in Liberal Studies electives.
- (2) PLSC 101 satisfies non-Western requirement.
- (3) Credits for PLSC 111 are counted in the Liberal Studies Social Science requirements.
- (4) PLSC 280 and/or 285 recommended as prerequisite to PLSC 380 through 389.

Proposed Program:

Bachelor of Arts - Political Science/Pre-Law Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications: **51**
Mathematics: 3cr
Social Science: PLSC 111
Liberal Studies Electives: 9cr, no courses with PLSC prefix

College:
 Foreign Language Intermediate Level (1) **0-6**

Major: **33**
Required Courses:
 PLSC 101 World Politics 3cr(2)
 PLSC 111 American Politics *cr(3)
Controlled Electives: 30cr

At least one course in three of the first four areas:
American Studies: PLSC 251, 300, 346, 350, 351, 353, 354, 355, 356, 357, 358, 359
Political Theory: PLSC 360, 361, 362
Public Policy and Administration: PLSC 250, 370, 371, 444
International Studies: PLSC 280, 282, 283, 285, 320, 321, 380, 382, 383, 384, 385, 386, 387, 388, 389 (4)
General Political Science: PLSC 300 (strongly recommended), PLSC 377, 480, 481, 482, 485, 493

Other Requirements: Pre-Law Interdisciplinary Track **15-21**
 Seven courses, including at least one from each of six areas:
Business: ACCT 201, ACCT 202, BLAW 235
Criminology: CRIM 210, 215, 255
Economics: ECON 121, 122, 332
English: ENGL 212, 220, 310
History: HIST 320, 321, 346
Philosophy: PHIL 101, 110, 222, 450

Free Electives: **9-21**

Total Degree Requirements: **120**

- (1) Intermediate-level Foreign Language may be included in Liberal Studies electives.
- (2) PLSC 101 satisfies non-Western requirement.
- (3) Credits for PLSC 111 are counted in the Liberal Studies Social Science requirements.
- (4) PLSC 280 and/or 285 recommended as prerequisite to PLSC 380 through 389.

Rationale: The Philosophy Department recently added a new course, PHIL 110: Reasoning and the Law, which is appropriate to add the list of controlled electives in the pre-law track.

study abroad programs in Spain, Mexico, or Costa Rica or by transferring credits from another accredited program. Students wishing

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6. Department of Geography—Program Revisions

Current Program:

Bachelor of Arts- Geography/Environmental Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:

Mathematics: MATH 121 or 217

Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

College:

Foreign Language Intermediate Level (1)

Major:

Required Courses:

GEOG 213 Cartography I
 GEOG 230 Cultural Geography
 GEOG 231 Economic Geography
 GEOG 411 History of Geography
 GEOG 412 Research Seminar

Controlled Electives:

One course from GEOG 251-257
 One course from GEOG 341-342

Proposed Program:

Bachelor of Arts - Geography/Environmental Track

53 Liberal Studies: As outlined in Liberal Studies section with the following specifications: **53-56**

Mathematics: MATH 217 or 6cr of MATH courses

Natural Science: BIOL 103-104 or GEOS 101-102 and GEOS 103-104 recommended

Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

College:

Foreign Language Intermediate Level (1)

0-6

36 Major:

Required Courses:

GEOG 213 Cartography I
 GEOG 230 Cultural Geography
 GEOG 231 Economic Geography
 GEOG 341 Climatology
 GEOG 342 Physiography
 GEOG 411 History of Geography
 GEOG 412 Research Seminar
 RGPL 350OG 251-2571o.-s -0.002 Tc 0.000o Ph

Current Program:
Bachelor of Arts- Geography/Economic Geographer Track

Liberal Studies: As outlined in Liberal Studies section with the following specifications:
Mathematics: MATH 121 or 217
Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

College:
Foreign Language Intermediate Level (1)

Proposed Program:
Bachelor of Arts - Geography/Economic Geographer Track

53 **Liberal Studies:** As outlined in Liberal Studies section with the following specifications: **53-56**
Mathematics: MATH 217 or 6cr of MATH courses
Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

0-6

Current Program:
**Bachelor of Arts- Geography/
GIS and Cartographer Track**

Liberal Studies: As outlined in Liberal Studies section with the following specifications:
Mathematics: MATH 121 or 217
Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

College:
Foreign Language Intermediate Level (1)

Proposed Program:
**Bachelor of Arts - Geography/
GIS and Cartographer Track**

53 **Liberal Studies:** As outlined in Liberal Studies section with the following specifications: **53-56**
Mathematics: MATH 217 or 6cr of MATH courses
Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101 recommended; no courses with GEOG prefix

0-6 **College:**
Foreign Language Intermediate Level (1) **0-6**

Current Program:
**Bachelor of Arts- Geography/
General Geography Track**

Liberal Studies: As outlined in Liberal Studies section
with the following specifications:

Mathematics: MATH 121 or 217

Liberal Studies Electives: 9cr, BTED/COSC/IFMG 101
recommended; no courses with GEOG prefix

College:

Foreign Language Intermediate Level (1) e Intermediate

Proposed Program:
**Bachelor of Arts - Geography/
General Geography Track**

53

APPENDIX B
University-Wide Graduate Curriculum Committee
Co-Chairs Piper and Baumer

FOR ACTION:

New Course / Cross Listed: ENGL 753/853 Studies in Literature as a Profession
Sponsoring Department: English
Catalogue Start Term: Summer 2009

Summary & Rationale:

This course will be an elective for students in the MA Generalist, MA Literature, and PhD Literature and Criticism programs within the English Department, and it will fill the Research Skills requirement for the PhD in English Literature and Criticism.

With the increasing competition on the academic job market, professional development is essential. According to the Final Report of the Modern Language Association Committee on Professional Development, “if present employment patterns continue fewer than half the seven or eight thousand graduate students likely to earn PhDs in English and foreign languages between 1996 and 2000 can expect to obtain full-time tenure-track positions within a year of receiving their degrees.”¹ Students must be well-equipped to enter the job market; thus, this course focuses on professional development, including: working in a field, presenting at conferences, scholarly publishing, and entering the academic job market. Moreover, this course offers those professional skills in a sustained format with substantial one-on-one interaction that allows the students to tailor the work to their own professional goals. This course will also supplement and reinforce current mentoring and advising efforts. ¹The Modern Language Association is the governing body for Departments of English and Foreign Languages and Literatures. The Committee on Professional Employment: Final Report is available at http://www.mla.org/prof_employment

Catalogue Description:

ENGL753/ENGL 853

Studies in Literature as a Profession

3c-01-3sh

There are many ways in which students can prepare themselves to be competitive and successful when they enter the English Literature professions. Focusing on the practical aspects of literature as a profession, this course will cover a variety of topics including the job market, publishing, defining a field of study, writing in relevant genres, and teaching. Although appropriate for any student in the Masters or Doctoral program, this course is aimed at those students seeking employment at the university level and/or those who are looking to develop their academic research and writing skills. The purpose of this course is to provide a space in which students can engage in intensive work on the project or projects of their choice while situating that work within broader scholarly and professional communities. Students will become fully immersed in the profession by studying the resources relevant to their chosen fields and careers. This course is offered as an elective for MA and PhD students, and it will also fill the Research Skills requirement.

ESCO Project Status – Siemens – Work has been occurring across campus on lighting and plumbing energy conservation measures. Lighting fixtures and hardware have been replaced with new energy saving bulbs and switches. Toilets have been modified to use less water. In addition the energy management system and energy usage metering has been upgrade with the project.

New Business - None

Adjourn

Remaining Meeting Dates for AY 08-09

3-10-09

3-31-09

4-28-09

APPENDIX D
University Senate Research Committee
Chair Sciulli

FOR INFORMATION:

The committee met on February 3, 2009 and awarded \$20,450 in Small Grants to the following individuals:

- Francis Allard
- Charlene Bebko
- Holly Belch
- Holly Branthoover
- Roger Briscoe
- Anne Creany
- Kimberly Desmond
- Kelly Heider
- Valeri Helterbran
- Anson Long
- Crystal Machado
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