08-8a

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
	App - 2/28/08	~~07-44a~~	App - 2/10/09	App 2-24-09

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person	Email Address
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Proposing Department/Unit	Phone
Geosciences - Natural Sciences and Mathematics	724-357-5627

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply)

_____New Course _____Course Prefix Change _____Course Deletion

_____Course Revision _____Course Number and/or Title Change _____Catalog Description Change

Current Course prefix, number and full title	*Proposed* course prefix, number and full title, if changing

2. Additional Course Designations: check if appropriate

_____ This course is also proposed as a Liberal Studies Course.

_____ This course is also proposed as an Honors College Course.

_____ Other: (e.g., Women's Studies, Pan-African)

3. Program Proposals

_____Catalog Description Change _X_Program Revision

_____New Degree Program _____Program Title Change _____Other

_____New Minor Program _____New Track

Current program name	*Proposed* program name, if changing
B.S.-Geology/Geology Track	

4. Approvals		**Date**
Department Curriculum Committee Chair(s)		2/4/08
Department Chair(s)		2/4/08
College Curriculum Committee Chair		2-11-08
College Dean		2-11-08
Director of Liberal Studies *		3-27-08
Director of Honors College *		
Provost *		10/23/08
Additional signatures as appropriate: (include title)		
UWUCC Co-Chairs		2/10/09

* where applicable

Received SEP 25 2008 Liberal Studies

Received FEB 14 2008 Liberal Studies

Geoscience Department: Program Revision for B.S. in Geology/Geology Track

Part II. Description of Curriculum Change

1. Catalog Description

Note: This revised catalog description applies to the Geoscience Department's B.S. in Geology/Geology Track, B.S. in Geology/Environmental Track, B.S. in Education-Earth and Space Science, and Minor in Geology.

The catalog will be revised to read as follows:

Geology is a far-ranging science and encompasses various aspects of the Earth system. In addition to the solid Earth, this system includes the oceans and atmosphere, climate change and most aspects of our immediate environment. Professional geologists are thus engaged in a wide range of activities, depending on their interests. Scientific questions addressed by geologists include the evolution of life, the origin of volcanic activity, the assessment of volcanic and earthquake hazards, the evolution of our planetary neighbors, climate change and perhaps most importantly, the human impact on our environment.

The department offers a B.S. degree in Geology that is divided into two tracks: Geology and Environmental. Either track gives students the necessary foundation to pursue a wide variety of career goals. In addition, we offer education degrees for those students who are interested in teaching. The degrees and courses in our program emphasize hands-on learning, including outdoor instruction and student-oriented research and professional experiential learning opportunities. In addition to on-campus instruction and class-related field trips, the department also offers several regional geology Field Workshops, which take place in Newfoundland, the Northern Rockies region, Florida and the Bahamas, and the American Southwest.

Our B.S. in Geology/Geology Track is designed for students who are interested in pursuing any of the various sub-disciplines in Geology, including Oceanography/Marine Geology, Climate Change, Volcanology, Paleontology, Meteorology and Geophysics. There is also considerable overlap between geology and astronomy, as geologists study the evolution of other planetary bodies, such as the Moon, Mars and Venus; our curriculum reflects this link and provides the groundwork for planetary studies. The Geology Track thus provides students with the foundation needed to pursue a wide variety of career goals, including research (and postgraduate studies), teaching, or careers as professional geologists working with private businesses, environmental firms, or as a consultant for federal and state agencies.

The B.S. in Geology/Environmental Track is designed for students who wish to pursue careers in the rapidly expanding environmental field. While our planet has evolved over a 4.5 billion year history, our presence has had a significant impact upon our surroundings, in spite of our brief time of residence. Geologists play a key role in dealing with environmental issues, and the Environmental Track prepares students to solve environmental problems. Graduates from this track will be prepared for direct entry into jobs with federal or state agencies and private environmental consulting firms, as well as postgraduate studies.

The B.S. in Education-Earth and Space Science prepares students to become certified teachers in Pennsylvania and other states. Earth and Space Science teachers in middle and high school grades teach subjects that require a broad and solid foundation in science. Coursework includes study of geology, meteorology, oceanography, and astronomy. A basic understanding of the cognate sciences, biology, chemistry, and physics, and mathematics is also an essential part of the major. Courses in the foundations of Education and in pedagogy complement the subject matter studies. Students create and present lessons, first in Geoscience courses and then in school classrooms, culminating in the student teaching experience in the last semester.

The Minor in Geology is designed for students who desire a background in Geology, in conjunction with degrees in business or one of the social or physical sciences.

List of courses and credits for the proposed revised program:

Bachelor of Science - Geology/Geology Track

Liberal Studies Requirements:			**50**
Liberal Studies: As outlined in Liberal Studies section with the following specifications:			
Natural Science: CHEM 111-112 or 113-114			
Mathematics: MATH 121			
Liberal Studies Electives: MATH 122, no courses with GEOS prefix			
Major:			
Required Courses:			**53**
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:	GEOS 303, 401-402, 403-404, 405-406, 407-408 (1)	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	
Controlled Electives:		19cr	
19 credits from the following list (2):			
One 100-level 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:			**0-6**
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 Field Geology 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.

2. Summary of Changes

2 (a). Comparisons of current and proposed programs

Bachelor of Science—Geology/Geology Track

(Current)

Liberal Studies: As outlined in Liberal Studies section with the following specifications:	**50**
Mathematics: MATH 121 or 123	
Natural Science: CHEM 111-112 or CHEM 113-114	
Liberal Studies Electives: 4 cr., MATH 122 or MATH 124, no courses with GEOS prefix	
Major:	**29**
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:	**23-24**
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:	9-10
Select three courses from the following:	
GEOG316, MATH216, GEOS courses 300 or above (1)	
Other requirements:	**0-6**
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 controlled electives.
(2) 6cr of computer language may substitute for the foreign language requirement: COSC110 and COSC310 (recommended), or other higher-level COSC courses with department permission in consultation with the Computer Science Department.

Bachelor of Science—Geology/Geology Track

(Proposed)

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	
Major:	**53**
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
Controlled Electives:	19cr
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:	**0-6**
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.

2 (b). List of Associated Course Changes

Course Proposals Associated with Program Revisions

New #	Old #	Title	Format	Revision
GEOS 111	NA	Earth Science for Educators I	NA	Deleted
GEOS 112	NA	Earth Science for Educators I Lab	NA	Deleted
GEOS 113	NA	Earth Science for Educators II	NA	Deleted
GEOS 114	NA	Earth Science for Educators II Lab	NA	Deleted
GEOS 121	NA	Physical Geology	NA	Deleted
GEOS 122	NA	Physical Geology Lab	NA	Deleted
GEOS 123	NA	Applied Mathematics in the Geosciences	NA	Deleted
GEOS 132	NA	Historical Geology Lab	NA	Deleted
GEOS 141	NA	Introduction to Ocean Science	NA	Deleted
GEOS 201	NA	Foundations of Geology	3c-3l-4cr	New course
GEOS 202	NA	Quantitative Methods in the Geosciences	2c-0l-2cr	New course
GEOS 203	NA	Surficial Processes	3c-3l-4cr	New course
GEOS 220	NA	Mineralogy	NA	Deleted
GEOS 250	150	Geology of National Parks	3c-0l-3cr	Renumbered from GEOS 150
GEOS 251	151	The Age of Dinosaurs	3c-0l-3cr	Renumbered from GEOS 151
GEOS 252	221	Physical Resources of the Earth	3c-0l-3cr	Renumbered from GEOS 221
GEOS 253	226	Forensic Geology	3c-0l-3cr	Renumbered from GEOS 226
GEOS 301	NA	Mineralogy and Petrology	3c-3l-4cr	New course
GEOS 302	325	Structural Geology	3c-3l-4cr	Renumbered from GEOS 325; increased from 3 to 4cr
GEOS 303	326	Field Geology	3c-3l-4cr	Renumbered from GEOS 326; increased from 3 to 4cr
GEOS 310	310	Environmental Geology	3c-3l-4cr	Increased from 3 to 4cr
GEOS 311	332	Geochemistry	3c-3l-4cr	Renumbered from GEOS 332; increased from 3 to 4cr
GEOS 312	331	Hydrogeology	3c-0l-3cr	Renumbered from GEOS 331; removed laboratory
GEOS 313	333	Soils and Soil Geochemistry	2c-3l-3cr	Renumbered from GEOS 333
GEOS 320	NA	Igneous and Metamorphic Petrology	NA	Deleted
GEOS 341	341	Planetary Geology	3c-3l-4cr	Renamed; increased from 3 to 4cr
GEOS 342	342	Stellar Astronomy	3c-3l-4cr	Increased from 3 to 4cr
GEOS 350	NA	Operation of the Planetarium	NA	Deleted
GEOS 351	131-132	Historical Geology	3c-3l-4cr	Renumbered from GEOS 131-132
GEOS 352	412	Sedimentation and Stratigraphy	3c-3l-4cr	Renamed from GEOS 412; increased from 3 to 4cr
GEOS 353	330	Paleontology	3c-3l-4cr	Renumbered from GEOS 330; increased from 3 to 4cr
GEOS 354	327	Geomorphology	2c-3l-3cr	Renumbered from GEOS 327
GEOS 355	411	Sedimentary Petrology	2c-3l-3cr	Renumbered from GEOS 411
GEOS 370	361	Oceanography	3c-3l-4cr	Renumbered from GEOS 361; increased from 3 to 4cr
GEOS 371	371	Meteorology	2c-3l-3cr	Renamed; description change
GEOS 401	NA	Northern Rockies Seminar	1c-0l-1cr	New course
GEOS 402	336	Northern Rockies Field Workshop	var-3cr	Renamed from GEOS 336
GEOS 403	NA	Newfoundland Seminar	1c-0l-1cr	New course
GEOS 404	337	Newfoundland Field Workshop	var-3cr	Renamed from GEOS 337
GEOS 405	NA	American Southwest Seminar	1c-0l-1cr	New course
GEOS 406	338	American Southwest Field Workshop	var-3cr	Renamed from GEOS 338
GEOS 407	NA	Carbonate Geology Seminar	1c-0l-1cr	New Course
GEOS 408	441	Carbonate Geology Field Workshop	var-3cr	Renamed from GEOS 441
GEOS 440	NA	Subsurface Geology	NA	Deleted
GEOS 470	380	Research Methods in the Geosciences	2c-0l-2cr	Renumbered from GEOS 380
GEOS 480	480	Geoscience Seminar	2c-0l-2cr	Increased from 1 to 2cr

Note: Many of the attached course proposals involve changing course numbers to conform to a more consistent numbering scheme. All 100-level courses will be introductory, liberal studies courses with associated lab sections (101-106). 200-level courses will be introductory courses for majors (201-203), as well as liberal studies courses without lab sections (250-254). 300-level courses form the core of our upper-level majors classes and are grouped according to classic subdivisions with the Geosciences (301-

371). 400-level courses include field workshops and associated seminars (401-408), our senior-level two-course research sequence (470, 480), special topics, independent study and internship courses (481-482, 493). Below are our proposed course offerings listed by "new" course numbers.

Proposed Geoscience Course Offerings

Course	Title	Format	Prerequisites
GEOS 101	The Dynamic Earth	3c-0l-3cr	None
GEOS 102	The Dynamic Earth Lab	0c-1l-1cr	None
GEOS 103	Oceans and Atmospheres	3c-0l-3cr	None
GEOS 104	Oceans and Atmospheres Lab	0c-1l-1cr	None
GEOS 105	Exploring the Universe	3c-0l-3cr	None
GEOS 106	Exploring the Universe Lab	0c-1l-1cr	None
GEOS 201	Foundations of Geology	3c-3l-4cr	Geoscience majors and minors, and Science or Science Education majors/minors, Anthropology, Geography and Regional Planning majors, or instructor permission
GEOS 202	Quantitative Methods in the Geosciences	2c-0l-2cr	Geoscience majors and minors only, or permission of instructor; must be taken after or concurrently with GEOS 201
GEOS 203	Surficial Processes	3c-3l-4cr	GEOS 201
GEOS 250	Geology of National Parks	3c-0l-3cr	None
GEOS 251	The Age of Dinosaurs	3c-0l-3cr	None
GEOS 252	Physical Resources of the Earth	3c-0l-3cr	None
GEOS 253	Forensic Geology	3c-0l-3cr	None
GEOS 254	Exploration of Space	3c-0l-3cr	None
GEOS 301	Mineralogy and Petrology	3c-3l-4cr	GEOS 201, 202
GEOS 302	Structural Geology	3c-3l-4cr	GEOS 201, 202
GEOS 303	Field Geology	3c-3l-4cr	GEOS 201, 202
GEOS 310	Environmental Geology	3c-3l-4cr	GEOS 202, 203
GEOS 311	Geochemistry	3c-3l-4cr	GEOS 201, 202
GEOS 312	Hydrogeology	3c-0l-3cr	GEOS 201, 202
GEOS 313	Soils and Soil Geochemistry	2c-3l-3cr	GEOS 201, 202
GEOS 341	Planetary Geology	3c-3l-4cr	MATH 121, PHYS 111
GEOS 342	Stellar Astronomy	3c-3l-4cr	MATH 121, PHYS 111
GEOS 351	Historical Geology	3c-3l-4cr	GEOS 202, 203
GEOS 352	Sedimentation and Stratigraphy	3c-3l-4cr	GEOS 202, 203
GEOS 353	Paleontology	3c-3l-4cr	GEOS 201, 202
GEOS 354	Geomorphology	2c-3l-3cr	GEOS 202, 203
GEOS 355	Sedimentary Petrology	2c-3l-3cr	GEOS 202, 203
GEOS 362	Plate Tectonics	2c-3l-3cr	PHYS 111-112; 20cr of geology
GEOS 370	Oceanography	3c-3l-4cr	GEOS 201, 202
GEOS 371	Meteorology	2c-3l-3cr	GEOS 201, 202
GEOS 401	Northern Rockies Seminar	1c-0l-1cr	GEOS 201, 202
GEOS 402	Northern Rockies Field Workshop	var-3cr	GEOS 401 and instructor permission
GEOS 403	Newfoundland Seminar	1c-0l-1cr	GEOS 201, 202
GEOS 404	Newfoundland Field Workshop	var-3cr	GEOS 403 and instructor permission
GEOS 405	American Southwest Seminar	1c-0l-1cr	GEOS 201, 202
GEOS 406	American Southwest Field Workshop	var-3cr	GEOS 405 and instructor permission
GEOS 407	Carbonate Geology Seminar	1c-0l-1cr	GEOS 201, 202
GEOS 408	Carbonate Geology Field Workshop	var-3cr	GEOS 407 and instructor permission
GEOS 470	Research Methods in the Geosciences	2c-0l-2cr	75cr or instructor permission
GEOS 480	Geoscience Seminar	2c-0l-2cr	GEOS 380, Senior standing
GEOS 481	Special Topics	var-1-3cr	As appropriate to course content
GEOS 482	Independent Study	var-1-3cr	Prior approval through advisor, faculty member
GEOS 493	Geoscience Internship	var-1-12cr	None

3. Rationale for Changes

Rationale for Geoscience Department Programmatic Changes

Note: This section applies wholly or in part to proposed program revisions for the Geoscience Department's B.S. in Geology/Geology Track, B.S. in Geology/Environmental Track, B.S. in Education-Earth and Space Science, and Minor in Geology. As such, this text will be repeated in the revision proposals for all these programs.

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 held over the past three years, the Geoscience Department outlined a number of goals (see below), which would significantly improve our programs both pedagogically and mechanically. The following outlines these goals and the ways in which the proposed program revisions will work toward achieving them.

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" approach. These courses, GEOS 201 Foundations of Geology, GEOS 202 Quantitative Methods in the Geosciences, and GEOS 203 Surficial Processes, will serve as the prerequisites for almost all of our upper-level courses.

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 short, this style of learning gives students the cognitive capacity necessary for success and, perhaps even more importantly, develops self-knowledge and beliefs that provide students with a sense of why they learn. The combination of our students' collective experiences and abilities lead to a richer understanding of the Earth's complexity and fosters a community of 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 (GEOS 402, 404, 406, 408). In addition we are developing a preliminary one-credit seminar for each Field Workshop to introduce students to the necessary background and skills needed to successfully complete these projects (GEOS 401, 403, 405, 407).

Fostering Creative Thought and Critical Analysis

While facts are undeniably the raw materials for science, creative thought is the process by which science grows. Students must be able to use the facts to think scientifically. Hypothesis testing, falsification, and interpretation in the face of incomplete or contradictory data are critical steps in a student's intellectual growth. Our new program integrates intellectually challenging projects and real world exercises that challenge their imagination and creativity. New courses are designed to foster creative thinking and develop analytical skills, and revised existing courses expand such opportunities for our students. In addition, we are increasing research credits in GEOS 480, and expanding opportunities for project-based exercises in GEOS 201-203.

Modernizing Curricular Offerings
The need to modernize our curriculum and course content arises from changes in the subfields of the geosciences over the past twenty years. A number of our course proposals involve the increase in the number of lecture hours to accommodate additional course content. These include (see above table; numbers given are "new" course numbers): GEOS 302 Structural Geology, GEOS 303 Field Geology, GEOS 310 Environmental Geology, GEOS 311 Geochemistry, GEOS 341 Planetary Geology, GEOS 353 Paleontology, and GEOS 370 Oceanography. Where appropriate, we have also combined courses into single courses reflecting a de-emphasis of particular subfields. These include GEOS 301 Mineralogy and Petrology (combines former courses GEOS 220 Mineralogy and GEOS 320 Igneous and Metamorphic Petrology) and GEOS 342 Stellar Astronomy (incorporates content from GEOS 350 Operation of the Planetarium).

Improving 4-year Graduation Rate
Although specific data are not available, it is clear that very few of our Geology and Environmental Track students graduate in the four years typical of undergraduate programs. There are several reasons for this. First, it is widely acknowledged amongst undergraduate geology and geoscience departments that, of the students who eventually major in the geosciences, relatively few enter their first year of college specifically knowing that this will be their major. Rather, many if not most eventual geoscience majors "discover" the major while taking an introductory course, often as a science requirement. Second, we have a large number of students that transfer into our major either from other IUP programs, or from other universities. Third, our current curriculum has a complicated set of prerequisites which, when coupled with the fact that many of our upper-level courses are only taught every other year, creates many situations where students are unable to take a required course when it is offered and must wait up to two years for that course to be taught again. In any of these cases, our current programs provide little scheduling flexibility that would help students to graduate within the typical four-year timeframe.

We are proposing a number of program revisions to combat these issues. First, we are creating a new set of introductory courses, GEOS 201 Foundations of Geology, GEOS 202 Quantitative Methods in the Geosciences, and GEOS 203 Surficial Processes that will serve as prerequisites for almost all 300-level and 400-level courses. In addition, we plan to offer GEOS 201 and GEOS 202 (they will typically be taken concurrently) every semester which will provide maximum access to upper-level courses for students transferring into the program in either the fall or spring semester. Second, we are increasing the ability of students to select freely from upper-level Geoscience and allied science classes, increasing the number of controlled elective credits from 9-10 to 19 in the Geology Track, and from 8-9 to 20 in the Environmental Track. Third, we are allowing credit from one 100-level or 200-level course to count toward controlled electives to add increased flexibility for the student who chooses to major in Geosciences after taking one of our liberal-studies courses. Recognizing the unique nature of each student's schedule, we anticipate that students who begin either the Geology or Environmental track as late as the spring semester of their sophomore year will still be able to fulfill program requirements within the four-year timeframe.

Developing a Sense of Community within the Geoscience Department
Finally, we believe that our program revisions will help to develop of a distinct community to which individuals (students, faculty, and staff) have a "sense of belonging". Opportunities for active and small group learning are particularly important for encouraging identity with the geoscience community. Field trips and field workshops are integrated into the new program at all levels and allow close student-faculty interactions as well as invaluable practical experiences.

Rationale for Changes Specific to the B.S. in Geology/Geology Track
Liberal Studies Requirements

1) The Mathematics specification has been changed from MATH 121 or 123 to MATH 121. The rationale for this change is that the MATH 123-124 sequence (4 credits each) has been replaced by MATH 125-126-225 (3 credits each).

2) The Liberal Studies Elective specification has been changed from MATH 122 or 124 to MATH 122. The rationale for this change is that the MATH 123-124 sequence (4 credits each) has been replaced by MATH 125-126-225 (3 credits each).

Major Classes

1) GEOS 121-122 Physical Geology and Lab are replaced with GEOS 201 Foundations of Geology and GEOS202 Quantitative Methods in the Geosciences (new courses) which will be a modernized pair of introductory course for majors. This change reflects our need to modernize curricular offerings in keeping with current trends in the geociences, and also to incorporate a parallel quantitative course to introduce students to mathematical concepts in the geosciences earlier in their undergraduate careers.

2) GEOS 131-132 Historical Geology and Lab are replaced by GEOS 203 Surficial Processes (new course) reflecting a shift in emphasis within the geosciences toward active Earth surface processes.

3) GEOS 220 Mineralogy (3 credits) and GEOS 320 Igneous and Metamorphic Petrology (3 credits) are being combined into a single required course GEOS 301 Mineralogy and Petrology (4 credits). This change reflects a de-emphasis of igneous and metamorphic petrology in the geosciences such that the relevant subject matter can be combined into a single course with Mineralogy (see attached new course proposal).

4) GEOS 325 Structural Geology is renumbered to GEOS 302 Structural Geology and the credits increased from three to four. This change reflects an expansion of course content over the past decade (see attached course revision proposal).

5) The required course GEOS 326 Field Geology (3 credits) is being renumbered to GEOS 303 and revised to a four credit course reflecting an expansion of field techniques including satellite navigation, geodesy, and digital mapping (see attached course proposal). To broaden potential exposure to different field areas, we are changing the GEOS 326 Field Geology requirement to one of the following: GEOS 303 Field Geology or any one of our paired Field Workshops and Seminars (GEOS 401-402, GEOS 403-404, GEOS 405-406, GEOS 407-408).

6) The required course GEOS 380 Research Methods in the Geosciences is being renumber to GEOS 470. It is still required and the number of credits is unchanged.

7) The required course GEOS 480 Geoscience Seminar (currently 1 credit) is being revised to 2 credits four. This change reflects an increasing emphasis on research experiences at the undergraduate level with the geosciences (see attached course revision proposal).

8) The following courses, whereas still representing important fields within the geosciences, are no longer considered as singularly important for the major and are being eliminated as required courses: GEOS 411 Sedimentary Petrology, GEOS 412 Stratigraphy, GEOS 330 Paleontology, and GEOS 362 Plate Tectonics. These courses are still available for students to take as controlled electives. This change reflects a de-emphasis on these subdisciplines within the geosciences such that they are no longer considered essential for an undergraduate major.

Controlled Electives

1) The number of Controlled Elective credits is being increased from 9-10 to 19. This will allow students more freedom to tailor their major toward their personal interests and allow for more scheduling flexibility for both students and the Geoscience Department. As the Geosciences have expanded in disciplinary and interdisciplinary scope in the past twenty years, we are opening up more options for students to expand their course experiences into more modern curricular offerings within our department as well as outside our department (see below). In addition, we are allowing credit from one 100-level or 200-level course to count toward controlled electives to add

increased flexibility for the student who chooses to major in Geosciences after taking one of our liberal-studies course offerings.

2) As the geosciences have become more interdisciplinary and quantitative in nature, we are expanding the scope of courses outside our department that can be taken as controlled electives. Previously only GEOG 316 Introduction to Geographic Information Systems and MATH 216 Probability and Statistics for Natural Sciences were permitted. We have added the following as eligible to be taken as a controlled elective: BIOL 111 Principles of Biology I, BIOL 112 Principles of Biology II, CHEM 231Organic Chemistry I, CHEM 232 Organic Chemistry II, CHEM 322 Instrumental Analysis, CHEM 323 Analytical Methods, CHEM 341 Physical Chemistry I, GEOG 415 Remote Sensing, MATH 217 Probability and Statistics, MATH 241 Differential Equations, PHYS 342 Thermal and Statistical Physics, COSC 250 Introduction to Numerical Methods, COSC 310 Data Structures and Algorithms, and COSC 362 Unix Systems. Students will be limited to two non-GEOS courses that can be applied to controlled electives.

Footnotes

1) In footnote (1) the number of credits of summer field camp, internship, or independent study that may substitute for GEOS 303 or a Geoscience Field Workshop is being increased from 3 credits to four credits to reflect the increase in credits in GEOS 303 Field Geology as well as the addition of the one credit seminar course associated with each Field Workshop.

2) In footnote (3) the recommended sequence of computer science courses to fulfill the College of Natural Sciences and Mathematics language requirement is being changed from COSC 110 Problem Solving and Structured Programming and COSC 310 Data Structures and Algorithms to COSC 110 Problem Solving and Structured Programming and COSC 210 Object Oriented and GUI Programming. This change stems from changes in the Computer Science Department's course offerings and prerequisites subsequent to the addition of the Computer Science option to the Geoscience Curriculum. When the Computer Science option to fulfill the language requirement was initiated in the Geoscience Department, COSC 210 did not exist and the prerequisite for COSC 310 was COSC 110. Now COSC 210 has been inserted into the sequence and is a prerequisite for COSC 310, thus the more logical 6-credit sequence for our students is COSC 110 and COSC 210.

Part III. Implementation

1. How will the proposed revision affect students already in the existing program?

We anticipate full implementation of the new programs in Fall 2009. At that time, all program changes and associated course changes will be enacted immediately. Students who are already enrolled in the Geology Track will be affected by these changes although we do not anticipate serious problems as the new programs provide a substantial increase in flexibility with respect to scheduling and course selection. Although it is impossible to foresee every possible situation that will arise, we will use the following guidelines to work students through the transition period without compromising the rigor or quality of their individual programs.

In Fall 2009, students who are already enrolled in the Geology Track will adopt their respective new program requirements. As they will have already completed a portion of the requirements for the old programs, faculty advisors will tailor each individual student's program appropriately based on the following guidelines:

-The total number of credits required for the major (53) will always remain unchanged although the distribution of credits between the required courses and free electives will be flexible.
-If a student has taken a course under the old program, that student may not take the same or correlative course under the new program, even if the number of credits or course number has changed.
-If a student has already taken the 3-credit version of a particular course with the 4-credit version of the same course being required under the new program, that student will have to add one credit to the total controlled elective requirements. Conversely, if a student has taken the 4-credit version of a class with the

3-credit version required under the new program, that student will subtract one credit from the total controlled elective requirements.
-Students who have already taken GEOS 121/122 Physical Geology/Lab will not be required to take GEOS 201 Foundations of Geology or GEOS 202 Quantitative Methods in the Geosciences.
-Students who have already taken GEOS 131/132 Historical Geology/Lab will not be required to take GEOS 203 Surficial Processes.

2. Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this program will fit into the schedule(s) of current faculty.
No additional faculty resources are required. We can implement the proposed programs with our existing faculty while maintaining strong support to the Liberal Studies Science elective course offerings. The following table shows an example implementation schedule:

Example faculty teaching load for two year sequence (workload hours in parentheses):

Faculty	Fall	Spring	Fall	Spring
Hovan	103 O. and A. (3) 370 Oceanog. (6) Chair (3)	103 O. and A. (3) 104 O.and A. Lab (6) Chair (3)	104 O.and A. Lab (2) 371 Meteor. (5) 470 Res Methods (2) Chair (3)	201 Foundations (6) 202 Quant Method (2 Chair (3)
Farnsworth	104 O.and A.Lab (10) 470 Res. Methods (2)	104 O. and A. Lab (4) 201 Foundations (6) 202 Quant Method (2)	103 O. and A. (3) 104 O.and A.Lab (8)	103 O. and A. (3) 104 O.and A.Lab (8)
Coles	350 Planet Geol. (5) 105 Exp. Univ. (3) 106 Exp. Univ. Lab (4)	321 Geomorph. (6) 105 Exp. Univ. (3) 106 Exp. Univ. Lab (2) EDUC 441	351 Stellar (6) 105 Exp. Univ. (3) 106 Exp. Univ. Lab (4)	105 Exp. Univ. (3) 106 Exp. Univ. Lab (8 EDUC 441
Poage	102 DE Labs (4) 201 Foundations (6) 202 Quant Method (2)	301 Min/Pet (6) 311 Geochem (6)	102 DE Labs (4) 201 Foundations (6) 202 Quant Method (2)	102 DE Labs (4) 253 Forensic (3) 313 Soils (5)
Lewis	303 Field Geology (6) 310 Environ. (6)	102 DE Lab (12)	302 Structure (6) 362 Plate (5)	102 DE Lab (6) 203 Surficial (6)
Taylor	101 Dyn Earth (3) 102 DE Labs (6) 251 Age of Dinos (3)	203 Surficial (6) 353 Paleo. (6)	101 Dyn Earth (3) 102 DE Lab (6) 251 Age of Dinos (3)	351 Historical (6) 352 Sed/Strat (6)
Cercone	SCI 103 + Labs (12)	101 Dyn Earth (3) 101 Dyn Earth (3) 106 Exp Univ. Lab (2) 250 National Parks (3)	SCI 103 + Labs (12)	101 Dyn Earth (3) 101 Dyn Earth (3) 250 National Parks (3 304 Hydro. (3)

Number seats available for Liberal Studies Science Courses (100-level):

lec=100/sec	300	400	300	400
lab=24/sec	288	312	288	312

3. Are other resources adequate?
Yes, there are no program changes that require facilities or resources not already available.

4. Do you expect an increase or decrease in the number of students as a result of these revisions? If so, how will the department adjust?
Although difficult to assess in light of the overall decline in demographics for western Pennsylvania's college matriculation, we anticipate a steady or perhaps slight increase in enrollment to major's courses over the next few years. Our new program eases non-major student transition into the program by removing scheduling pre-requisite barriers that currently penalize students who transfer into our program from our introductory sections. Even so, we can still accommodate at least a 50-75% increase in most of our major's courses without any difficulty.

Part IV. Periodic Assessment
1. Describe the evaluation plan. Include evaluation criteria. Specify how student input will be incorporated into the evaluation process.
During retreats and planning sessions conducted as part of our five-year review in 2004-2005, the Geoscience Department came to the following consensus on the goals for students in our three major programs (Geology, Environmental Geology & Earth & Space Science Education). These goals are:

1. Effective oral and written communication skills:
   a. giving a research talk (for geology/environmental majors)
   b. teaching a lesson plan (for education majors)
2. Quantitative skills appropriate for earth science problems
3. Professional skills need for field, lab and computer tasks:
   a. identify common rocks and minerals (all majors)
   b. keep a detailed and accurate field notebook (geology/environmental majors)
   c. use a Brunton Compass (geology/environmental majors)
   d. use common analytic software programs (geology/environmental majors)
4. Knowledge of the critical content areas:
   a. plate tectonic theory (all majors)
   b. organic evolution (all majors)
   c. environmental issues (all majors)
   d. evolution of solar system & universe (education majors)

A consultation in February of 2005 with Dr. Barbara Walvoord helped us simplify and streamline our initial ideas to create the following student assessment plan [NOTE: All course numbers are the new proposed course numbers]:

1. Geology and environmental track students are required to take GEOS 480 Geoscience Seminar and present talks at Geoscience Day. These students will be rated on the writing of their abstract, their oral presentation, the quantitative methods used in their research and their demonstration of adequate content knowledge. A new evaluation form was designed to focus on the desired student outcomes and facilitate long-term data acquisition. Education students who are not required to take GEOS 480 Geoscience Seminar will initially be evaluated for the same set of desired skills based on their student teaching experiences as evaluated by themselves, their faculty supervisors and their cooperating teachers. The department will work to establish an evening equivalent to Geoscience Day for education students, where they can present a lesson that they taught to actual students in their classrooms for faculty rubric evaluation.

2. Quantitative skills appropriate for earth science problems will be assessed initially in GEOS 202 Quantitative Methods in the Geosciences (see attached course proposal), and again in GEOS 470 Research Methods in the Geosciences, as well as GEOS 480 Geoscience Seminar.

3. Professional skills will be directly measured and evaluated in courses as follows:
   Rock & Mineral ID: GEOS 201 Foundations of Geology, GEOS 470 Research Methods in the Geosciences
   Field Notebooks: GEOS 203 Surficial Processes & GEOS 303, 401-408 (Field Based Courses)

Brunton compass use: GEOS 201 Foundations of Geology, GEOS 470 Research Methods in the Geosciences
Software Skills: GEOS 202 Quantitative Methods in the Geosciences, GEOS 470 Research Methods in the Geosciences

4. Knowledge of the critical content areas will be directly assessed in required courses as follows:
Plate tectonic theory: GEOS 201 Foundations of Geology, GEOS 303, 401-408 (Field Based Courses)
Organic evolution: GEOS 201 Foundations of Geology (all majors); GEOS 353 Paleontology (Earth and Space Science Education majors)
Environmental issues: GEOS 203 Surficial Processes (Geology and Environmental Track); GEOS 370 Oceanography, GEOS 371 Meteorology (Earth and Space Science Education majors)
Evolution of solar system & universe (education majors only): GEOS 341 Planetary Geology, GEOS 342 Stellar Astronomy

2. Specify the frequency of the evaluations.
Assessment data will be collected annually by individual faculty members and adjusted as necessary. Collectively, department faculty will evaluate and discuss program revisions during annual daylong meetings and modify criteria and assessment strategies as needed. A full program assessment will be performed during every 5-year departmental review; our next review is currently scheduled for 2010.

3. Identify the evaluating entity.
We have instituted a simple set of tests fir each relevant course that will tell us if our students are actually learning and using the skills they had been taught. We have designed rubrics to facilitate this process and have begun implementing annual program assessments as per our 2005 five-year Academic Program Review. In addition, we are creating a senior 'exit interview' in an online questionnaire format to find out if students' own learning goals were met by program. We will also continue administering our alumni questionnaire (give a year or two after graduation to each cohort of students) by putting it in an online format as well.

Part V. Course Proposals
Attached are all required course proposals for the above changes.

Part VI. Letters of Support or Acknowledgement
The Geoscience Department respects the need for other programs and departments affected by our proposed program revisions to be suitably informed of these revisions and given the opportunity to express support or lack of support for them. The following table outlines our efforts to inform affected departments of these revisions and give them a chance to comment on them. Letters are attached in the order discussed below.

Anthropology Department
April 9, 2007: Dr. Poage met with Dr. Neusius, Chair of the Anthropology Department to discuss impacts of proposed revisions to Anthrolpolgy programs. **Outcome:** Letter of support sent by email (attached).

Geography and Regional Planning Department
September 4, 2007: Dr. Poage emailed Dr. Benhart, Chair of the Geography and Regional Planning Department, seeking a letter of support regarding potential content overlap between GEOG 342 Physiography and the proposed course GEOS 203 Surficial Processes (email attached). **Outcome:** No official response has yet been received from the Department of Geography and Regional Planning.

Biology Department
August 31, 2007: Dr. Poage sent the attached letter to the Biology Department Curriculum Committee Chair, Dr. Ayebo. **Outcome:** A meeting was arranged with the Biology Department Curriculum Committee to discuss the impacts of proposed revisions.

September 21, 2007: Dr. Poage met with the Biology Department Curriculum Committee to discuss the impacts of proposed revisions. **Outcome:** Committee members agreed that the impacts were minimal and manageable. No official response has yet been received from the Biology Department.

Chemistry Department
September 10, 2007: Dr. Poage met with Dr. Woolcock, Chair of the Chemistry Department, and Dr. Briggs, Chemistry Education Coordinator, to discuss the impacts of proposed revisions on the Chemistry Education Program. **Outcome:** It was requested that a formal letter to the Chemistry Department should be provided outlining the impacts to the Chemistry Department. The impacts would then be reviewed by the Chemistry Department and a vote taken as to whether or not the department should support the proposed revisions.

September 11, 2007: Dr. Poage submitted the attached letter to the Chemistry Department. **Outcome:** The attached letter of support was received from Dr. John Woolcock, Chair of the Chemistry Department.

February 11, 2008: At the request of the College of Natural Sciences and Mathematics' Curriculum Committee, Dr. Poage sent the attached for-information notice concerning proposed changes in controlled electives to Dr. Kondo, the Chemistry Department's representative to the Committee.

July 24, 2008: At the request of the UWUCC, Dr. Poage sent the attached for-information notice concerning the prerequisite change to GEOS 311 Geochemistry to Dr. Kondo, the Chemistry Department's representative to the College of Natural Sciences and Mathematics' Curriculum Committee.

Physics Department
September 10, 2007: Dr. Poage met with Dr. Talwar, Chair of the Physics Department to discuss the impacts of proposed revisions. **Outcome:** A meeting was arranged with the Physics Department to discuss the impacts of proposed revisions.

September 14, 2007: Dr. Poage met with Physics Department faculty to discuss the impacts of proposed revisions. **Outcome:** Faculty members agreed that the impacts were minimal and manageable. No official response has been received from the Physics Department.

Computer Science Department
February 11, 2008: At the request of the College of Natural Sciences and Mathematics' Curriculum Committee, Dr. Poage sent the attached for-information notice concerning proposed changes in controlled electives to Mr. Wolfe, the Computer Science Department's representative to the Committee.

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From: "Phillip Neusius" <phun@iup.edu>
Subject: Geoscience Curriculum Proposal
Date: Mon, 16 Apr 2007 10:18:13 -0400
To: "'Michael A Poage'" <mpoage@iup.edu>
Cc: "'Phillip Neusius'" <phun@iup.edu>

Mike,

Thanks for taking the time to stop by and share the Geoscience Department's planned curriculum changes. I have shared them with our faculty. We are genuinely excited about some of the opportunities this will present for our students. Anthropology fully supports your planned changes.

Sincerely,

Phil Neusius, Chair

Anthropology Department

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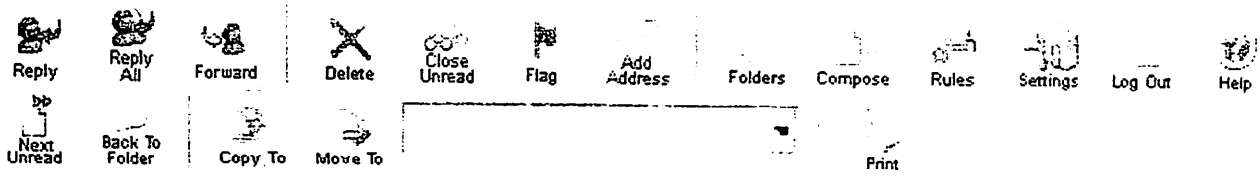

From: "Michael A Poage" <mpoage@iup.edu>
Subject: Letter of Support?
Date: Tue, 04 Sep 2007 13:45:26 -0400
To: jbenhart
Cc: jclewis

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Dear John,

The Department of Geoscience is in the final stages of assembling program revisions proposals involving extensive curricular changes. Amongst these is the development of a new set of introductory courses for our majors (GEOS 201, 202, 203). GEOS 203 Surficial Processes has some content overlap with GEOG 342 Physiography and we are seeking a letter of support from the Department of Geography and Regional Planning with respect to the development of this new course.

As the two courses are targeting different student populations (upper level GEOG students vs. intro level GEOS students), I suspect there will be very little if any competition for students between them. The study of active surface processes is a growth area in the geosciences and we feel that it is in the best interest of our majors to introduce them to this important field as early as is practical.

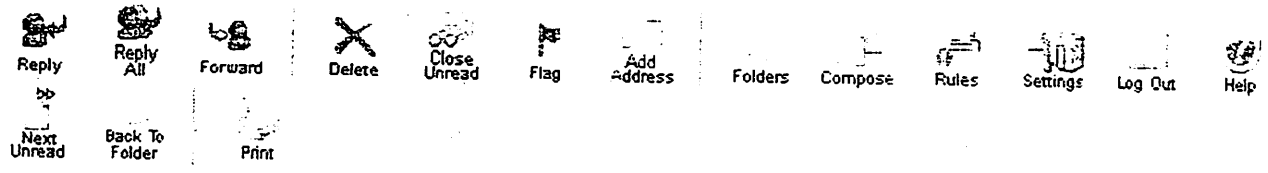
I have attached a copy of the course proposal which you should feel free to share with your colleagues. If you have any questions or concerns, feel free to contact me either by email or at 7-5627. I would be happy to meet with you and/or your department curriculum committee if need be to discuss this new course.

I look forward to hearing back from you soon.

Cheers,

Michael Poage
Department of Geoscience

Attachment: 203 Surficial Processes.doc (105K)



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Last updated: 03/13/2004 by jbr

Indiana University of Pennsylvania

Michael A. Poage, Ph.D.
Department of Geoscience
118 Walsh Hall
Indiana, PA 15705-1087

TELEPHONE: 724-357-5627
FAX: 724-357-5700
E-MAIL: mpoage@iup.edu

August 31, 2007

Dr. Amadu Ayebo
Chair, Department of Biology Curriculum Committee

Dear Dr. Ayebo,

The Department of Geoscience is proposing substantial curricular changes that will impact some Biology Department programs. As per the Undergraduate Catalog, the following Biology programs list GEOS course among their Ancillary Science Courses or Controlled Electives:

Bachelor of Arts *and* Bachelor of Science – Biology
Ancillary Science Courses (4-5 credits for BA; 20-21 credits for BS):

GEOS 121/122	Physical Geology Lecture and Lab	[3c-0l-3cr; 0c-3l-1cr]
GEOS 131/132	Historical Geology Lecture and Lab	[3c-0l-3cr; 0c-3l-1cr]
GEOS 141	Introduction to Ocean Science	[3c-0l-3cr]
GEOS 310	Environmental Geology	[2c-3l-3cr]
GEOS 330	Paleontology	[2c-3l-3cr]
GEOS 331	Hydrogeology	[2c-3l-3cr]
GEOS 361	Physical Oceanography	[2c-3l-3cr]

Bachelor of Science – Environmental Health Science
Controlled Electives (six courses):

GEOS 121/122	Physical Geology Lecture and Lab	[3c-0l-3cr; 0c-3l-1cr]
GEOS 331	Hydrogeology	[2c-3l-3cr]

Revisions to the Department of Geoscience Curriculum:
With respect to the above courses, the Department of Geoscience is proposing the following changes.

GEOS 121/122	Delete; replace with GEOS 201 Foundations of Geology
GEOS 131/132	Lecture and lab will be combined into a single course GEOS 351
GEOS 141	Delete; this course has not been offered for many years
GEOS 310	Change to 3c-3l-4cr
GEOS 330	Renumber to GEOS 353; change to 3c-3l-4cr
GEOS 331	Renumber to GEOS 312; change to 3c-0l-3c
GEOS 361	Renumber to GEOS 370; change to 3c-3l-4cr

Course proposals relevant to these changes are attached.

We are seeking a letter of support from the Department of Biology with respect to these changes, recognizing that this will necessarily require course-numbering changes for the above Biology programs to be made in the Undergraduate Catalog.

If you have any questions, do not hesitate to contact me. I will be happy to meet with your department curriculum committee to discuss this matter if need be.

Sincerely,

Michael Poage
Chair, Department of Geoscience Curriculum Committee

Indiana University of Pennsylvania

Michael A. Poage, Ph.D.
Department of Geoscience
118 Walsh Hall
Indiana, PA 15705-1087

TELEPHONE: 724-357-5627
FAX: 724-357-5700
E-MAIL: mpoage@iup.edu

September 11, 2007

Dr. John Woolcock
Chair, Department of Chemistry

Dear Dr. Woolcock,

As we discussed in our meeting with Dr. Michael Briggs yesterday, the Department of Geoscience is proposing significant curricular and programmatic changes that will impact Bachelor of Science in Education-Chemistry program. As per the 2007-2008 Undergraduate Catalog, this program requires four credits of GEOS coursework, currently listed as either GEOS 111/112 Earth Science for Educators I (with lab) or GEOS 113/114 Earth Science for Educators II (with lab).

Accompanying the proposed termination of the General Science Education program, for which these courses were developed, we are also proposing to delete GEOS 111/112 and GEOS 113/114. These courses were last taught in the 2005-6 academic year. In each of the past five years that these courses were taught, enrollment was less than ten students.

Recognizing that the deletion of these courses will necessarily require modification of the Bachelor of Science in Education-Chemistry program, we suggest the following alternative four-credit course options:

GEOS 201 Foundations of Geology (proposed new course)
GEOS 101/102 The Dynamic Earth (lecture and lab)
GEOS 103/104 Oceans and Atmospheres (lecture and lab)
GEOS 106/106 Exploring the Universe (lecture and lab)

To assist in the evaluation of these options, I have included the new course proposal for GEOS 201, as well as current syllabi for GEOS 101/102, GEOS 103/104, and GEOS 105/106.

Ultimately we are seeking a letter of support from the Department of Chemistry with respect to the deletion of GEOS 111/112 and GEOS 113/114, to be included in our larger program revisions proposal. We hope to submit this proposal in mid-late October.

If you have any questions, do not hesitate to contact me. I will be happy to meet with your department curriculum committee to discuss this matter if need be.

Sincerely,

Michael Poage
Chair, Department of Geoscience Curriculum Committee

Indiana University of Pennsylvania

Department of Chemistry
Weyandt Hall, Room 143
975 Oakland Avenue
Indiana, Pennsylvania 15705-1076

724-357-2361
Fax: 724-357-2437
Internet: *http://www.iup.edu*

To: Dr. Michael Poage

From: John Woolcock, Chair, IUP Chemistry Department

Subject: Deletion of GEOS 111/112 and GEOS 113/1114

The Chemistry Department Curriculum Committee and the Chemistry Faculty voted on 11/27/07 to support the deletion of GEOS 111/112 and GEOS 113/114 with the understanding that GEOS 201 would be used to satisfy the geoscience course requirement by CHED majors in our Department instead of GEOS 111/112 or GEOS 113/114. Also we would like the Chairs of the Chemistry and Geoscience Departments to agree to work out a scheduling of the course so that there are no time conflicts with this and other CHEM courses that CHED stduents take during the same semester incluing CHEM 3321, 341 and CHEM 343.

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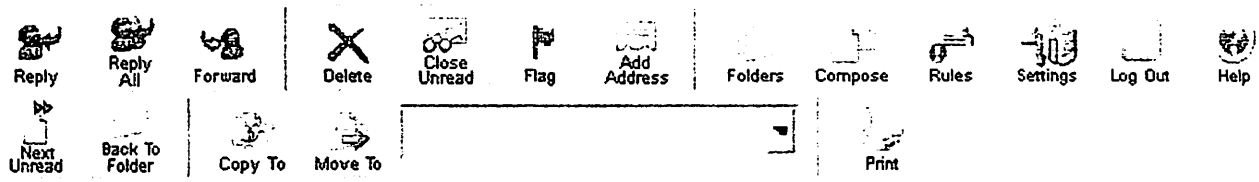
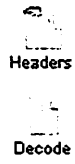


From: "Michael A Poage" <mpoage@iup.edu>
Subject: Geoscience Controlled Elective Changes
Date: Mon, 11 Feb 2008 09:12:09 -0500
To: akondo
Cc: woolcock, hovan

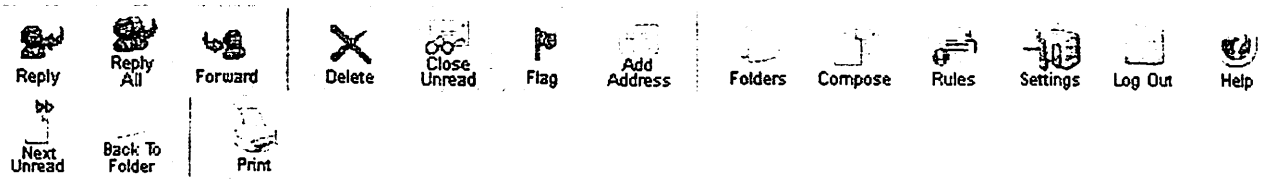


Dear Dr. Kondo,

At the request of the College of Natural Science and Mathematics' Curriculum Committee, I am writing to inform the Chemistry Department of proposed changes to the controlled electives of the Geoscience Department's B.S.-Geology/Geology Track. As discussed in the College Curriculum Committee's December meeting, the Geoscience department is proposing to include CHEM 231, 232, 322, 323, and 341 as controlled electives in this program, where previously there were no Chemistry controlled electives.

Sincerely,

Michael Poage
Chair, Geoscience Department Curriculum Committee



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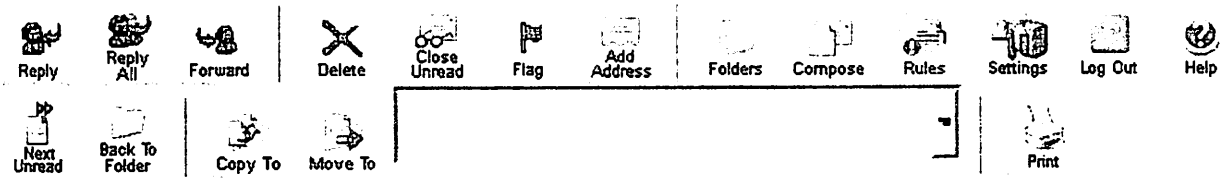


From: "Michael A Poage" <mpoage@iup.edu>
Subject: Prerequisite change
Date: Mon, 21 Jul 2008 12:37:39 -0400
To: Anne.kondo@iup.edu
Cc: john.woolcock@iup.edu, hovan@iup.edu

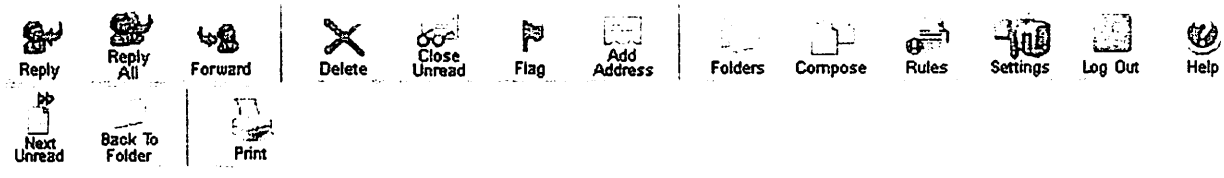
Dear Dr. Kondo,

At the request of the Screening Committee of the University Wide Undergraduate Curriculum Committee, I am writing to inform you of a pending prerequisite change to GEOS 332 Geochemistry. The current prerequisites include CHEM 111-112. As part of the Geoscience Department's curriculum restructuring, we are proposing to change this prerequisite to CHEM 111 only.

If you have questions regarding this change, please do not hesitate to contact me.

Sincerely,

Michael Poage
Geoscience Department



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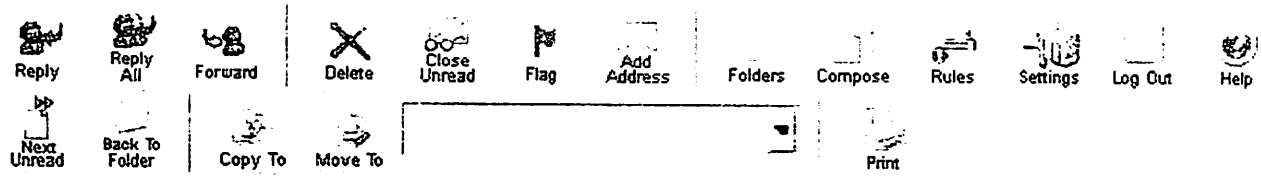

From: "Michael A Poage" <mpoage@iup.edu>
Subject: Geoscience Controlled Elective Changes
Date: Mon, 11 Feb 2008 09:13:39 -0500
To: jlwolfe
Cc: oblitey, hovan

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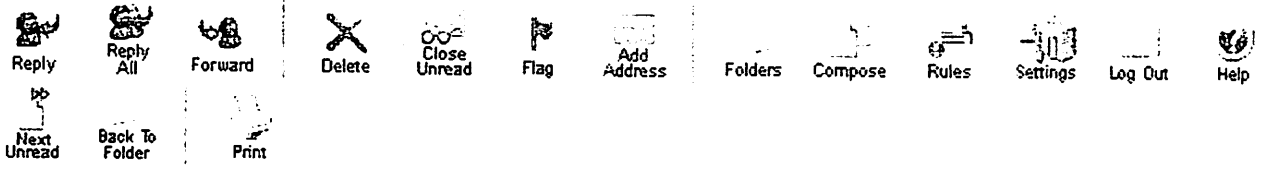
Dear Mr. Wolfe,

At the request of the College of Natural Science and Mathematics' Curriculum Committee, I am writing to inform the Computer Science Department of proposed changes to the controlled electives of the Geoscience Department's B.S.-Geology/Geology Track and B.S.-Geology/Environmental Track. As discussed in the College Curriculum Committee's December meeting, the Geoscience department is proposing to include COSC 250, 310, and 362 as controlled electives in these programs, where previously only COSC 250 was listed as a controlled elective for our B.S.-Geology/Environmental Track.

Sincerely,

Michael Poage
Chair, Geoscience Department Curriculum Committee



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