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07-43pp App-10/14/08 App-2/24/09

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

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Proposing Department/Unit Geosciences - Natural Sciences and Mathematics	Phone 724-357-7662

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

<u>Current</u> Course prefix, number and full title	<u>Proposed</u> course prefix, number and full title, if changing
	GEOS 407 Carbonate Geology Seminar

2. Additional Course Designations: check if appropriate

This course is also proposed as a Liberal Studies Course. Other: (e.g., Women's Studies, Pan-African)

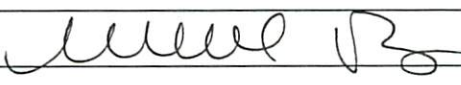
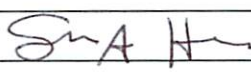
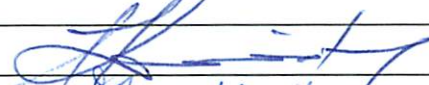

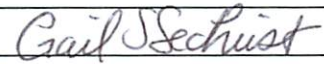
This course is also proposed as an Honors College Course.

3. Program Proposals

New Degree Program Program Title Change Program Revision

New Minor Program New Track Other

<u>Current</u> program name	<u>Proposed</u> program name, if changing

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 *	
Director of Honors College *	
Provost *	
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs	 10/14/08

* where applicable

Received Received
SEP 25 2008 FEB 14 2008
Liberal Studies Liberal Studies

Part II. Description of Curricular Change

1. SYLLABUS OF RECORD

I. Catalog Description

GEOS 407 Carbonate Geology Seminar

1c-0l-1cr

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

A seminar introduction to the geological environment and history of the carbonate rocks and sediments found in Florida. Includes instruction in the techniques of field analysis and geologic interpretation.

Designed to prepare students specifically for GEOS 408.

II. Course Objectives

At the end of this course students will be able to:

- 1) Synthesize the regional geology of the carbonate system comprising the rocks and sediments of Florida and the Bahamas.
- 2) Articulate an understanding of scientific controversies concerning the geologic history of this region.
- 3) Describe and interpret sedimentary features and rocks observed in the Florida/Bahama region.
- 4) Employ basic skills and tools used during field studies and investigations including but not limited to grain size analysis, global positioning system (GPS), and geologic mapping.

III. Course Outline

Part A (7 academic hours): Introduction to carbonate geochemistry and sedimentary environment of Florida/Bahamas.

1. Modern depositional environments of Florida and Bahamas
2. Geological history and interpretations of ancient carbonate environments
3. Eustatic sealevel changes and its influence on carbonate deposition in Florida and the Bahamas

Part B (6 academic hours): Field Skills and Observations

1. Geological map interpretation and global positioning systems (GPS)
2. Identification and interpretation of sedimentary depositional/erosional features.
3. Grain size analytical techniques

Final exam during final class period (1 academic hour)

IV. Evaluation Methods

Each component of the course will contribute to final grade according to:

Final Exam	50%
<u>Practical Exercises</u>	<u>50%</u>
Total	100%

V. The final grade for this course will be determined using the following schedule:

A=90-100%; B=80-89%, C=70-79%, D=60-69%, F=<60%

VI. Attendance Policy

The attendance policy will conform to IUP's undergraduate course attendance policy.

VII. Required textbooks, supplemental books and readings

There will be no required textbook for this class. Students will read a compilation of papers and chapters from the list below, as well as others relevant to the specific projects to be conducted during GEOS 408.

VIII. Special resource requirements

There are no special resource requirements for this course.

IX. Bibliography

The following will be among the published resources used to develop the course curriculum:

- Boardman, M, and Carney, C. (1991), Origin and Accumulation of Lime Mud in Ooid Tidal Channels, Bahamas, *Journal of Sedimentary Petrology*, v. 61, p. 661-680.
- Bosence, D.W.J., (1995) Anatomy of a Recent biotrital mud-mound, Florida Bay, USA. In, *Carbonate Mud Mounds*, C.L.V. Monty, D.W.J. Bosence, P.H. Bridges, and B.R. Pratt, eds., Spec. Pub. Inter. Assoc. of Sedimentologists No. 23, p. 439-473.
- Boss, S.K., (1996) Digital shaded relief image of a carbonate platform (northern Great Bahama Bank)-scenery seen and unseen. *Geology*, v. 24, p. 985-988.
- Myloie, J, and Myloie, J., (2003) Carbonate island karst and the Quaternary paleoclimate record Congress of the International Union for Quaternary Research, v.16, p.225.
- Pomar, L. (2001), Types of carbonate platforms, a genetic approach. *Basin Research*, 13, p. 313-33.
- Randazzo, I, and Jones, A., (1997) *The Geology of Florida*, University of Florida Press, 327pp.
- Ries, J. (2006) Aragonitic algae in calcite seas; effect of seawater Mg/Ca ratio on algal sediment production, *Journal of Sedimentary Research*, v.76, p.515-523.
- Robbins, L.L., Yates, K.K., Shinn, G., and Blackwelder, P., (1996) Whitings on the Great Bahama Bank: a microscopic solution to a macroscopic mystery: *Bahamas Journal of Science*, v. 10, p. 2-7.
- Simone, L., (1981) Ooids: A review. *Earth Sci. Reviews*, v. 16, p. 319-355.
- Steneck, R.S. and Testa, V., (1997) Are calcareous algae important to reefs today or in the past? Symposium Summary: 8th Inter. Coral Reef Symposium, v. 1, p. 685-698
- Steuber, T., Veizer, J., (2002) Phanerozoic record of plate tectonic control of seawater chemistry and carbonate sedimentation, *Geology*, v.30, p.1123-1126.
- Twichell, D., Brooks, G., Gelfenbaum, G., Paskevich, V., and Donahue, B., (2003) Sand ridges off Sarasota, Florida; a complex facies boundary on a low-energy inner shelf environment, *Marine Geology*, v.200, p.243-262.
- Wanless, H.R., Tedesco, L.P., Rossinsky, V.J., and Dravis, J.J., (1989) Carbonate environments and sequences of Caicos platform, with an introductory evaluation of South Florida. 28th Intl. Geol. Congress, Field Trip Guidebook, T374, p. 1-75.
- Yates, K., Halley, R., (2006) Diurnal variation in rates of calcification and carbonate sediment dissolution in Florida Bay, *Estuaries and Coasts*, v. 29, p.24-39.

Course Analysis Questionnaire

Section A: Details of the Course

- A1. How does this course fit into the programs of the department? For which students is the course designed? Explain why his course cannot be incorporated into an existing course.**
This course is designed as a prerequisite for GEOS 408 Carbonate Geology Field Workshop [currently listed as GEOS 441; see attached Course Revision Proposal] 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. This course is designed to provide a common knowledge base and skill set for majors and minors of all levels who may then take GEOS 408.
- A2. Does this course require changes in the content of existing courses or requirements for a program?**

This course does not require changing the existing content of any other courses or requirements for any program.

A3. Has this course been offered at IUP on a trial basis?

This course has never been offered in the Geoscience Department.

A4. Is this course to be a dual-level course?

This course is not a dual-level course.

A5. If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student?

This course cannot be taken for variable credit.

A6. Do other higher education institutions currently offer this course? If so, please list examples.

Virtually all higher education institutions with programs in geology or earth sciences offer courses in the geology of particular regions of interest. These courses come in a number of forms from strictly field-based courses, to classroom lecture/seminar courses, to combinations of both.

A7. Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency?

No professional society, accrediting authority, law or other external agency recommends or requires any specific content or skills for this course.

Section B: Interdisciplinary Implications

B1. Will this course be taught by instructors from more than one department?

This course will be taught by one instructor from the Geoscience Department.

B2. What is the relationship between the content of this course and the content of courses offered by other departments?

There is no overlap between the content of this course and that of other courses offered by other departments.

B3. Will this course be cross-listed with other departments?

This course will not be cross-listed with any other department.

B4. Will seats in this course be made available to students in the School of Continuing Education?

Seats in this course will not be available to students in Continuing Education.

Section C: Implementation

C1. Are faculty resources adequate?

Faculty resources are currently adequate to teach this course. This course will be counted as one preparation and one hour of equated workload.

C2. What other resources will be needed to teach this course and how adequate are the current resources?

- a. Classroom space is currently adequate to teach this course.
- b. There is no special equipment required to teach this course.

- c. There are no laboratory supplies or other consumable goods required for this course beyond those already possessed by the Geoscience Department.
- d. Library materials are currently adequate for this course.
- e. There will be no additional travel expenses.

C3. Are any of the resources for this course funded by a grant?

No resources for this course are currently funded by a grant.

C4. How frequently do you expect this course to be offered?

The department expects that this course will be offered every other year.

C5. How many sections of this course do you anticipate offering in any single semester?

We anticipate offering a single section of this course in a given semester.

C6. How many students do you plan to accommodate in a section of this course?

We plan to accommodate no more than 24 students in this course. This is the maximum number of students that can be accommodated in the Geoscience Department's teaching laboratory rooms.

C7. Does any professional society recommend enrollment limits or parameters for a course of this nature?

No professional society recommends enrollment limits or parameters for this course.

C8. Not applicable.

Section D: Miscellaneous

NA

Part III. Letters of Support or Acknowledgment

There are no letters in the attached program revisions that directly pertain to this new course.