

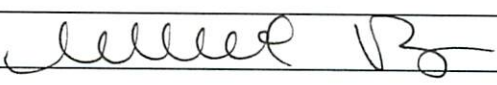
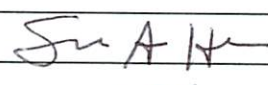
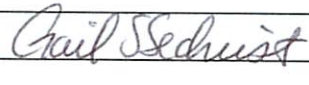
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LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No. <u>07-43nn</u>	UWUCC Action-Date: <u>App-10/14/08</u>	Senate Action Date: <u>App-2/24/09</u>
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Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person Karen Cercone	Email Address kcercone@iup.edu
Proposing Department/Unit Geosciences - Natural Sciences and Mathematics	Phone 724-357-7650

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	GEOS 405 American Southwest Seminar	
	<u>Proposed</u> 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. ☐ 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 ☐ Catalog Description Change		
<u>Current</u> program name	Proposed program name, if changing	
4. Approvals		
Department Curriculum Committee Chair(s)		Date 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

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SEP 25 2008

FEB 14 2008

Part II. Description of Curricular Change

1. SYLLABUS OF RECORD

I. Catalog Description

GEOS 405 American Southwest Seminar

1c-0l-1cr

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

A seminar introduction to the geology of the American Southwest. Includes examination of Colorado Plateau stratigraphy, Basin & Range tectonism and volcanic events in the eastern Sierra Nevada. Designed to prepare students specifically for GEOS 406.

II. Course Objectives

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

- 1) Explain the unique stratigraphy and erosional patterns of the Colorado Plateau in the field.
- 2) Interpret former sedimentary environments from stratigraphic observation.
- 3) Describe and interpret extensional features typical of Basin & Range tectonics.
- 4) Evaluate how temporal and spatial variations in volcanic activity relate to major plate tectonic events in the American Southwest and eastern Sierra Nevada.
- 5) Apply the scientific method to stratigraphic and volcanic anomalies observed in the field, generate multiple working hypotheses to explain them and analyze the evidence to determine which hypothesis is most plausible.

III. Course Outline

- Week 1: An Introduction to the Regional Geology of Western North America (1 academic hour)
- Week 2: Tectono-stratigraphic Provinces of the Western United States (1 academic hour)
- Week 3: Early to Middle Proterozoic: the Grenville Orogeny (1 academic hour)
- Week 4: Late Proterozoic: The Rodinian Supercontinent & its Breakup (1 academic hour)
- Week 5: Early Paleozoic: Development of the Western Passive Margin (1 academic hour)
- Week 6: Middle Paleozoic: Active Margin Development & the Antler Orogeny (1 academic hour)
- Week 7: Late Paleozoic: Redbeds, Salt Flats & the Ancestral Rocky Mountains (1 academic hour)
- Week 8: Early Mesozoic: Deserts, Dinosaurs & a New Volcanic Arc (1 academic hour)
- Week 9: Late Mesozoic: Rising Sea Levels & the Sevier Orogeny (1 academic hour)
- Week 10: Early Cenozoic: The Laramide Orogeny (1 academic hour)
- Week 11: Middle Cenozoic: Development of the Basin & Range (1 academic hour)
- Week 12: Late Cenozoic: Uplift & Erosion Carve the Land (1 academic hour)
- Week 13: The Southwest Today: Volcanic Activity & Extension (1 academic hour)
- Week 14: From John Wesley Powell to Tanya Atwater: Geologists Explore the Southwest (1 academic hour)
- Final exam during finals week (1 academic hour)

IV. Evaluation Methods

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

Seminar Presentations (2)	50%
Final Exam	<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

The required textbook for this class will be:

Balbridge, Scott. *Geology of the American Southwest*. Cambridge, England: Cambridge University Press, 2004.

Students will also read and discuss primary scientific literature and selections from other texts and guidebooks listed below to gather background information for the specific projects to be conducted during GEOS 406.

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:

Baldrige, W. Scott (2004) *Geology of the American Southwest: A Journey Through Two Billion Years of Plate-Tectonic History*. Oxford University Press, 297 pp.

Beus, Stanley. (2002) *Grand Canyon Geology*. Oxford University Press, 448 pp.

Chronic, Halka & Chronic, Lucy (2004) *Pages of Stone: Geology of Grand Canyon & Plateau Country National Parks & Monuments*. Mountaineers Books, 176 pp.

Cowan, Darrel S., Cladouhos, Trenton T., Morgan, Julia K. (2003) Structural geology and kinematic history of rocks formed along low-angle normal faults, Death Valley, California: *Geol Soc Am Bull* 2003 v. 115. p. 1230-1248.

Duffield, Wendell A. (1998) *Volcanoes of Northern Arizona: Sleeping Giants of the Grand Canyon Region*. Grand Canyon Association, 68 pp.

Harris, Ann G., Tuttle, Sherwood D. and Tuttle, Esther (2003) *Geology of National Parks*. Kendall Hunt, 898 pp.

Hildreth, W. (2003) Volcanological perspectives on Long Valley, Mammoth Mountain, and Mono Craters: several contiguous but discrete systems: *Journal of Volcanology and Geothermal Research*, v. 136, iss. 3-4, p. 169-198.

Hill, Mary (2005) *Geology of the Sierra Nevada*. University of California Press, 246 pp.

Huuse, Mads, Shoulders, Simon J., Netoff, Dennis I. and Cartwright, Joe (2005) Giant sandstone pipes record basin-scale liquefaction of buried dune sands in the Middle Jurassic of SE Utah: *Terra Nova*, v. 17, p. 80-85.

Kenkmann, Thomas, Jahn, Andreas and Scherler, Dirk (2005) Structure and formation of a central uplift: A case study at the Upheaval Dome impact crater, Utah: *GSA Special Paper 384: Large Meteorite Impacts III*: pp. 85-115.

McQuarrie, Nadine and Chase, Clement G. (2000) Raising the Colorado Plateau: *Geology* v. 28; no. 1; p. 91-94.

Miller, Marley Bryant (2005) Geological Landscapes of the Death Valley Region. *Earth-Science Reviews*, v. 73, iss. 1-4, p. 17-30.

Powell, James Lawrence (2005) *Grand Canyon: Solving Earth's Grandest Puzzle*. Pi Press, 320 pp.

Swanson, Samuel E, Naney, Michael T. Westrich, H.R. and Eichelberger, J.C. (1989) Crystallization history of Obsidian Dome, Inyo Domes, California: *Journal of Volcanology*, v. 51, p. 161-176.

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 this course cannot be incorporated into an existing course.**
This course is designed as a prerequisite for GEOS 406 American Southwest Field Workshop [currently listed as GEOS 338; 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 406.

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

None.

Part III. Letters of Support or Acknowledgment

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