New Course Proposal

Date Submitted: 12/05/14 3:22 pm

Viewing: GEOL 5500 : Petroleum Geology

Last edit: 12/05/14 3:22 pm

Changes proposed by: LEWISRD

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<tr>
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Proposing College/School: Coll of Sciences & Mathematics

Department: Geology & Geography

Effective Term: Fall 2015

Subject Code: Geology (GEOL)

Course Number: 5500

The Geology program has junior- and senior-level courses dealing with sedimentary petrology, stratigraphy, paleontology, geophysics, and geochemistry. In light of the recent increase in job opportunities in the petroleum industry for our students, a petroleum geology course is justified and timely. The downside of this increase in company hiring is that more students across the country go into geology as a profession and this increases competition. Many universities have one or more courses in petroleum geology. If we are to continue to serve our majors well, we also need to provide such a course.

Justification for new course:

Geology 5500 will be taught in conjunction with the companion graduate course, Geology 6500. We have found that having graduate students in the classroom adds materially to the undergraduate experience. Additionally, for the last four years, Auburn geology graduate students have been taking part at an international competition (Imperial Barrel Award) every spring dealing with petroleum exploration at a frontier basin, organized by the American Association of Petroleum Geologists (AAPG) and Gulf Coast Association of Geological Societies (GCAGS). This proposed course will directly help in preparation for competition at the Imperial Barrel Award coordinated by AAPG and GCAGS.

In Workflow

1. GEOL Editor
2. GEOL Chair
3. SM Undergraduate Curriculum Committee Chair
4. SM Editor
5. SM Associate Dean
6. Coordinator Curriculum Management
7. University Curriculum Committee Chair
8. Coordinator Curriculum Management

Approval Path

1. 12/08/14 7:39 am
   HOLLIAS: Approved for GEOL Editor
2. 12/08/14 8:04 am
   STELTMG: Approved for GEOL Chair
3. 12/16/14 10:52 am
   CAMMAVI: Approved for SM Undergraduate Curriculum Committee Chair
4. 12/16/14 11:36 am
   YARBREL: Approved for SM Editor
5. 12/16/14 11:41 am
   CAMMAVI: Approved for SM Associate Dean
Course Title: Petroleum Geology

Abbreviated Title: Petroleum Geology

<table>
<thead>
<tr>
<th>Schedule Type</th>
<th>Contact/Group Hours</th>
<th>Weekly or Per Term?</th>
<th>Credit Hours</th>
<th>Anticipated Enrollment</th>
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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>Weekly</td>
<td>3</td>
<td>25</td>
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Can the course be repeated? No  Total Credit Hours: 3

Grading Type: Standard Grades

Prerequisites:

Prerequisite Courses: GEOL 4010 - Sedimentary Petrology

Corequisites:

Restrictions:

Other Restrictions: Geology or geography majors

Admin Restrictions:

Course Description: Coverage of petroleum source rocks, migration, reservoir rock characters, and trapping mechanics. Overview of exploration methods including well-log analysis and seismic interpretation.

May Count Either:

Affected Program(s):

Overlapping or Duplication of Other Units' Offerings: No

Resources

Available facilities in Petrie Hall and the Haley Center are sufficient for this course.

Course Objectives/Outcomes

1. Search library and Web resources effectively and retrieve useful literature from credible sources.
2. Demonstrate familiarity with the format and content of articles in professional journals.
3. Express themselves in text in a professional manner by writing a paper (8-10 pages) on a topic related to petroleum deposits, their tectonic origin, tools of exploration, and exploitation.
4. Produce and deliver oral presentations, including illustrations, in a professional manner.

Is this course considered University Core?

No

Main readings:


Supplemental readings are mainly from the following books:


Week 1 (Aug 17-24, 2015) Orientation and Objectives of Course; Introduction/History of Oil Exploration
Week 2 (Aug 25-31) Description of Hydrocarbons
Week 3 (Sep 1-8) Generation of Hydrocarbons; Petroleum Source Rocks
Week 4 (Sep 9-16) Migration of Hydrocarbons; both Primary and Secondary
Week 5 (Sep 17-24) Reservoirs; Sedimentology of Reservoir Rocks, including Porosity and Permeability
Week 6 (Sep 25-31) Traps and Seals; Trapping Mechanism; Petrophysics of Seal Rocks
Week 7 (Oct 1-8) Sedimentary Basins and Petroleum Systems
Week 8 (Oct 9-16) Mid-term; FALL BREAK (Oct. 15-Oct.16)
Week 9 (Oct 19-26) Exploration Methods: Drilling/Seismics
Week 10 (Oct 27-Nov 4) Exploration Methods: Seismic Problem
Week 11 (Nov 5-12) Exploration Methods: Well logs
Week 12 (Nov 13-20) Introduction of Imperial Barrel Award (IBA) Competition; Term Papers due
Week 13 (Nov 21-Nov 26) THANKSGIVING BREAK; No classes.
Week 14 (Nov 30-Dec 3) Class Presentation of Term Papers (Graduate students)
Week 15 (Dec 7-Dec 11) Class Presentation of Term Papers

Assignments/Projects

1. Readings of Journal Papers and Discussion in Class 20 points
2. Mid-Term 30 points
3. Class Term Paper 30 points
4. Class Oral Presentation and Answer Questions 20 points

Total 100 points

Points per project: See above for points assigned to each graded project.

Grading Scale
A: 90 -100 points
B: 80 - 89 points
C: 70-79 points
D: 60-69 points
F: <60 points

Additional instructions for students:

STANDARD FORM FOR EXERCISES
Unless informed otherwise, students will submit typed notes on journal papers using 11- or 12-point font, double spaced, and with 1-inch margins. All assignments will be due at class time, but will be accepted later that day. Any assignments more than one day late may not be accepted. In addition to a paper copy, please submit an electronic version to the instructor in Word as an e-mail attachment.

MID-TERM EXAMINATION
This will be an in-class closed-book and closed-note examination on the contents of the syllabus covered prior to the mid-term date.

INSTRUCTIONS FOR TERM PAPERS AND CLASS PRESENTATION
The research term paper will be on a subject of Students' own choosing, once approved by the instructor, in the areas of any aspect of lecture. The final written paper must be 8-10 pages long, including illustrations, and should include the standard sections found in published papers in geology. It must be typed using 12-point font and one-inch margins. Refer to 8 or more references (exclusive of Web sites), and list these in the standard format at the end of the paper. The oral presentation on the same topic will be a Power-Point talk of approximately 12-15 minutes duration.

Points per project: See above for points assigned to each graded project.

Grading Scale
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F: <60 points

Rubric and Grading Scale

Attachments

Course reviewer comments