GEOL 420: Petroleum Geology
Spring 2014
Syllabus

Professor: Dr. Sally Potter-McIntyre
215C Parkinson
453-7372
pottermcintyre@siu.edu (* best way to reach me)

Class Time: 9:35-10:50, Tuesdays and Thursdays
Class Location: 110 Parkinson Laboratory
Office Hours: M, W, F 9:00-10:00AM

Readings: There is no assigned textbook for this class. Readings will be made available via D2L.

Course Objectives:
This course will examine the fundamental aspects of petroleum geology including:
(1) components of petroleum systems including source, reservoir, migration pathways, traps, seals and timing.
(2) the origin of hydrocarbons in organic-rich source beds, including black shales and other nonconventional source rocks
(3) the geologic framework of deposits in the context of stratigraphy and structure;
(4) reservoir characteristics in terms of porosity and permeability;
(5) exploration methods including sequence and seismic stratigraphy and basin analysis
(6) production methods; and
(7) potential environmental impacts of exploration and production.

Grading Policy:
The grade for the course will be computed from the following components and their respective weights:
Exam 1 25%
Exam 2 25%
Assignments 5%
Basin paper plus summary 10%
Presentation 10%
Final Exam 25%
Letter grades will be assigned based on the final computed grade as follows. We reserve the right to curve (in your favor).
> 90% A
80-89% B
70-79% C
60-69% D
< 60% F
Assignments, Presentations and Reports:
A paper will be assigned to cover a major oil/gas basin (a list of potential basins will be provided). The paper will be 8-10 pages of text (typed, 1.5 spacing, 1" margins, font size 12) (figures and tables would be in addition to this) and must include at least 10 primary (journal) references. Sources of all materials in the text, figures, and tables must be cited appropriately. Additional details on format will be provided.

This paper should include a discussion of at least source rocks (age, stratigraphy, kerogen types, richness, etc), organic maturation and related issues (burial depths, oil/gas window, etc), reservoirs (characteristics, types), and production. Grades will be assigned based on content, organization, grammar, spelling, and appropriate referencing. Please use the standard reference style seen in AAPG Bulletin and be consistent. Further details on the format will be discussed in class. Based on these papers, each student will give an in-class presentation. Grades will be based on content and clarity, as well as presentation style. Grades will be based, in part, on peer review. In addition, a 2-page summary must be provided to all class participants at the time of the presentations. Both the paper and the 2-page summary will be turned in via D2L (including figures, tables, etc.) prior to your presentation. The 2-page summaries should also be sent to all students in the class (email list to be provided). Deadlines will be announced in class.

Exams:
Exams will be short answer/essay format, and will include questions from the entire range of topics covered.

GEOL 420
Spring 2014
Tentative Schedule

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<th>Week</th>
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<th>Topic</th>
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<td>1.</td>
<td>Jan. 20</td>
<td>Introduction, outline of course</td>
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<td>Jan. 22</td>
<td>History of petroleum industry, oil company careers</td>
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<td>3.</td>
<td>Feb. 3-5</td>
<td>Petroleum systems</td>
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<td>4.</td>
<td>Feb. 10-12</td>
<td>Organic carbon accumulation and source</td>
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<td>5.</td>
<td>Feb. 17-19</td>
<td>Reservoirs and reservoir characterization</td>
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<td>6.</td>
<td>Feb. 24</td>
<td>Migration and Explosion: Anderson</td>
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<td>Feb. 26</td>
<td>EXAM 1</td>
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<td>7.</td>
<td>Mar. 3</td>
<td>Structural traps (Ferre)</td>
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<td></td>
<td>Mar. 5</td>
<td>Stratigraphic traps</td>
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<td>8.</td>
<td>Mar. 10-12</td>
<td>SPRING BREAK</td>
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<td>9.</td>
<td>Mar. 17-19</td>
<td>Basin Analysis</td>
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<td>10.</td>
<td>Mar. 24-26</td>
<td>Basin Analysis</td>
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<td>11.</td>
<td>Mar. 31</td>
<td>Sequence stratigraphy</td>
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<td>Apr. 2</td>
<td>EXAM 2</td>
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<td>12.</td>
<td>Apr. 7-9</td>
<td>Unconventional systems and recovery</td>
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<td>Apr. 14-16</td>
<td>Well site geology and core analysis, Devera</td>
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<td>14.</td>
<td>Apr. 21-23</td>
<td>Fracking and environmental issues</td>
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<td>Apr. 28-30</td>
<td>Oral Presentations</td>
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<td>16.</td>
<td>May 5-7</td>
<td>Oral Presentations</td>
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<td>May 14, 8AM</td>
<td>FINAL EXAM</td>
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COURSE POLICY REGARDING PLAGIARISM AND CHEATING

Important: please read SIU policies available online (see link in syllabus attachment below).

Definition of Plagiarism

Plagiarism is the use of another author's language, thoughts, ideas, or expressions and the representation of them as one's own original work. This includes, but is not limited to, word-for-word copying of another author’s text (even if it is another student paper or a previously turned in student paper of your own). It includes, but is not limited to, using another author’s ideas without proper citation, even if you think the idea common knowledge.

Sanctions for Plagiarism

All papers will be turned in to a dropbox on D2L and run through plagiarism detection software. Any student(s) whose paper returns greater or equal to 50% plagiarized material will fail the class and the student(s) will be reported to the dean for ethical violations. THERE WILL BE NO EXCEPTIONS. For papers with <50% plagiarized material, the penalty will be at the discretion of the professor and include: failure of the class or a zero grade on the assignment with or without a report to the dean. In the event of a group project, all students will receive the same penalty.

Sanctions for Cheating

All work on exams is expected to be your own and to be produced at the time of the exam. Any extraneous material (e.g., notes, calculators with memory functions, phones) that is visible during exams will result in a zero grade on the exam. Other methods of cheating (e.g., hacking into D2L to change grades or acquire exams prior to the test date) will be reported to the dean and the sanctions will be in the hands of the administration.
IMPORTANT DATES *

Semester Class Begins: .................................................. 01/20/2015
Last day to add a class (without instructor permission): .......... 01/25/2015
Last day to withdraw completely and receive a 100% refund: .... 02/01/2015
Last day to drop a course using SislinkNet: ......................... 04/05/2015
Last day to file diploma application (for name to appear in Commencement program): ........................................... 03/13/2015
Final examinations: .......................................................... 5/11–5/15/2015

Note: For outreach, internet, and short course drop/add dates, visit Registrar's Academic webpage http://registrar.sin.edu/

SPRING SEMESTER HOLIDAYS

Martin Luther King, Jr’s Birthday: 01/19/2015
Spring Vacation: 03/07–03/13/2015

WITHDRAWAL POLICY – Undergraduate only

Students who officially register for a session may not withdraw merely by the stopping of attendance. An official withdrawal form needs to be initiated by the student and processed by the University. For the proper procedures to follow when dropping courses and when withdrawing from the University, please visit http://registrar.sin.edu/pdf/srad/catalog/n1214.pdf

INCOMPLETE POLICY – Undergraduate only

An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a completed grade within one semester following the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student's grade point average. For more information please visit: http://registrar.sin.edu/grades/incomplete.html

REPEAT POLICY

An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit no more than two times (two total enrollments) unless otherwise noted in the course description. For students receiving a letter grade of A,B,C,D, or F, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. See full policy at http://registrar.sin.edu/pdf/srad/catalog/n1214.pdf

GRADUATE POLICIES

Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please visit http://gradschool.sin.edu/about-us/grad-catalog/index.html

DISABILITY POLICY

Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must come to the DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. http://disabilityservices.sin.edu/

PLAGIARISM CODE


MORRIS LIBRARY HOURS

http://www.lib.sin.edu/about

SAFETY AWARENESS FACTS AND EDUCATION

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.sin.edu

SALUKI CARES

The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For information on Saluki Cares: (618) 453-5714, or sinucare@sin.edu, http://salukicare.sin.edu/index.html

EMERGENCY PROCEDURES

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Please reference the Building Emergency Response Protocols for Syllabus attachments on the following pages. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.

INCLUSIVE EXCELLENCE

SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well as an essential preparation for any career. For more information please visit: http://www.inclusiveexcellence.sin.edu/

LEARNING AND SUPPORT SERVICES

Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:

Tutoring: http://tutoring.sin.edu/
Math Labs http://tutoring.sin.edu/math_tutoring/index.html

WRITING CENTER

The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit http://write.sin.edu/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY

Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.sin.edu/

Additional Resources Available:

SALUKINET: https://salukinet.sin.edu/cp/home/displaylogin

ADVISEMENT: http://advisement.sin.edu/

SIU ONLINE: http://online.sin.edu/