Syllabus
GEOL 4320/6320 Petroleum Geology
Fall 2015 – 3:30 to 4:45 Tu-Th – Room 142 GG – University of Georgia (25551 & 25552)

Instructor: L. Bruce Railsback    Rooms 133 & 202 GG     rlsbk@gly.uga.edu    706-542-3453
Office Hours: Anytime except 8:00 am to 9:30 am Tu-Th or 2:00 to 3:30 pm Tu-Th.

Course web page: www.gly.uga.edu/railsback/4320/4320main.html. The course schedule will be
maintained on the course webpage, and many exercises, lecture presentations, and other important
resources will be available from it. The webpage is not always accessible from off-campus locations, a
feature that UGA’s IT staff have not been able to change.

Textbook: The textbook is an electronic resource available through the UGA Libraries. It is Knut

UGA Course Description: Geological understanding of petroleum, including its origin, its migration,
the reservoir rocks in which it is found, the mechanisms by which it is trapped in the subsurface, the
techniques by which it is found and extracted, and its geochemical and physical properties.

UGA Course Objectives (with additional comments): By the end of this course, students should
understand the current scientific understanding of: 1) the physical and chemical properties of
petroleum, 2) the origin of petroleum, and 3) how petroleum comes to reside in the accumulations from
which humans extract it; and they should know 1) how exploration for petroleum is conducted and 2)
how wells are drilled and managed so as to extract petroleum from the Earth. Performance in hands-on
projects, in in-class presentations, and on examinations will evaluate students’ progress.
At the end of the course, students should be prepared to enter the petroleum industry acquainted
with the bare fundamentals of petroleum geology, and/or prepared to use geological data acquired in
petroleum exploration and production, to the extent that a one-semester course can prepare them.
With regard to the former, geologists with B.S. degrees commonly enter the petroleum industry as mud
loggers who do dirty work in trailers in remote settings, whereas geologists with M.S. degrees
specializing in stratigraphy or structural geology enter the petroleum industry as geologists doing more
conceptual work, most commonly in office buildings in cities.

UGA Honor Code statement: Every student must abide by UGA’s academic honesty policy and
procedures, which are collectively known as "A Culture of Honesty". UGA’s student honor code requires
of students that "I will be academically honest in all of my academic work and will not tolerate academic
dishonesty of others." Further information can be found at www.uga.edu/honesty/. Students in this
class are of course expected to abide by these policies, procedures, and code.

Classroom etiquette: Class meetings are intended for lecture on and discussion of the subject
matter, and for students to ask questions about that material. Students are strongly encouraged to ask
questions and to remember that there are no stupid questions.
To allow the students to hear all the lectures and participate in all the discussions for which
they are paying, no private personal conversations can take place during class. Failure to adhere to this
basic maxim of civilized behavior, or repeated disruption of the class by some other means, will result in
removal from the class. Similarly, closing notebooks, putting on coats, and talking while the lecture or
discussion ends are rude behaviors, because many students will still be trying to follow the lecture or
discussion that they have paid to attend. Likewise, pagers and cellular telephones should be deactivated
during class time to avoid disturbing students who are trying to listen to class activities. Seating may
be assigned as needed.

Make-up exams: Make-up exams are usually essay exams, because essay exams can be much more
easily prepared on short notice. Exams can be made up in the documented event of illness, death in
family, or jury duty. Car trouble, visits by friends and relatives, weddings, travel plans, and other
exigencies beyond serious illness, death in family, or jury duty will not be treated as reasonable excuses
for missing exams. The meeting to schedule a make-up exam typically takes place at the end of the
next class meeting after the exam, and any student wishing to take the make-up exam must justify
doing so at least two hours before that class meeting and must be present at that scheduling meeting
unless absent for reasons that justify missing an exam.
Determination of course score:

<table>
<thead>
<tr>
<th>Item (see below for more about each)</th>
<th>Date</th>
<th>4320</th>
<th>6320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>Tuesday, October 6, 2015</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>Exam II</td>
<td>Tuesday, December 1, 2015</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Field Presentation</td>
<td>Last meetings of semester</td>
<td>--</td>
<td>10</td>
</tr>
<tr>
<td>Exercises</td>
<td>See below</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Presentation of exercise(s)</td>
<td>See below</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Exam III</td>
<td>Tuesday, December 15, 2015</td>
<td>25</td>
<td>23</td>
</tr>
</tbody>
</table>

All grades will be recorded as numbers, and each student’s final course score will be calculated using the weightings shown above. Percentages used to divide letter course grades will be at or below the following values: A 92%, A- 90%, B+ 87%, B 83%, B- 80%, C+ 77%, C 73%, C- 70%, D+ 67%, D 63%, D- 60%. Railsback has never taught a course in which there was not a least one A, and there are usually several.

Exams:

Exams I and II examine students’ knowledge of material covered in lecture or in readings to that point. Each exam will consist largely of questions selected by the instructor from a list of questions distributed prior to the exam. Use of computers, cell phones, and other communications or information-storage devices during that exam, or any quiz or exam, is prohibited.

Exam III will consist of (1) questions drawing on presentations, and (2) a small exercise. The exam will thus be analogous to a laboratory exam.

Field presentations:

Each graduate student will give a presentation to the class characterizing a large oil or gas field or play chosen from a list provided by the instructor. The presentation will include electronic illustrations using presentation software, such as Powerpoint. Each presentation will be accompanied by a one-page or two-page paper handout distributed to the class. The presentation and handout should include at least the field’s name, location, date of discovery, reservoir type, age of reservoir, trap type, range of depths, and type of petroleum. Other useful information would include, but not be limited to, the type of seal, age and/or type of source, detailed nature of reservoirs, migration pathways, recoverably and in-place reserves, etc. Representative logs, cross-sections, and maps taken from publications will add much to a presentation.

Preparation of a presentation will require a bibliographic search using bibliographic databases like GEOREF; requests via interlibrary loan may be necessary. Deadlines leading toward the presentation include submission to the instructor of the name of the field (5:00 pm September 3), submission to the instructor of a bibliography (5:00 pm September 24), and submission to the instructor of a draft of the electronic presentation (5:00 pm November 10).

Exercises

Exercises will be distributed throughout the course. Each exercise will have a due date; grades of exercises handed in late will suffer deduction; some or all exercises will have dates after which submission will not be accepted. An exercise may not be handed in, even for reduced credit, after that exercise has been reviewed in class by the instructor. In a few cases, that review may happen on the day that the exercise is due, thereby precluding any late submission at all of that exercise.

Submitted exercises that are essentially identical in content will be treated as evidence of excessive collaboration. On the first offense, such exercises will be given half credit (if submitted by two people), one-third credit (if submitted by three people), etc. Further offenses will be treated as violations of the University’s code of academic honesty. Submission of exercises drawing on previous year’s submissions will be treated as violations of the University’s code of academic honesty and will, regardless of any University process, result in a grade of zero on that exercise.

Presentation(s) of exercise(s):

When graded exercises are returned, specific students may be asked to present their understanding of the exercise as a means of reviewing the exercise for the entire class.