

Elementary Oceanography: Syllabus

GEOL 3030 (CRN 22475) University of Georgia Spring Semester, 2022
8:00-9:15 Tu-Th Room 200A GG

Professor: Dr. L. Bruce Railsback email: rlsbk@uga.edu Office: 133 GG Phone: 706-542-2652 (GEOL Dept)

Office Hours: 9:20-... Tu&Th; 2:10-4:15 Tuesday. Railsback will also meet with students at times of mutual convenience, as arranged via email to him at rlsbk@uga.edu.

Teaching Assistant: David Richards (david.richards25@uga.edu)

Textbook: Trujillo, A.P., and Thurman, H.V., 2014/2017, *Essentials of Oceanography*, 11th or 12 edn., or Thurman, H.V., and Trujillo, A.P., 2004, *Introductory Oceanography*, 10th edn. On reserve at Sci. Lib.

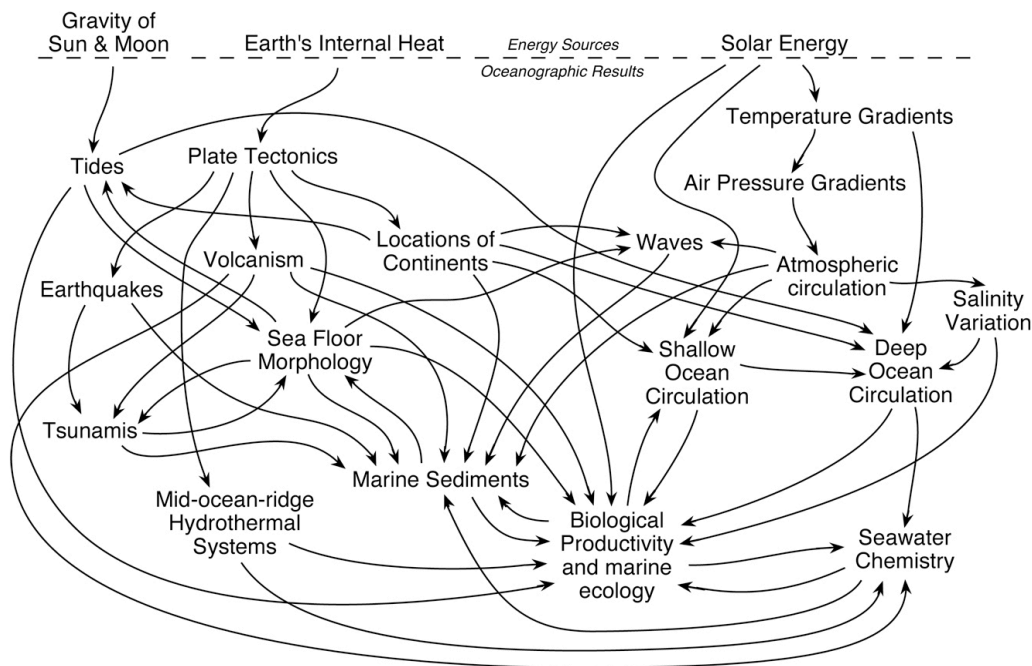
Web Site: The course web site is at railsback.org/railsback_GEOL3030base.html . This syllabus, including the attached schedule, is subject to change as posted there. Many essential course materials will be posted on the course web site. eLC will be used to allow access to lecture illustrations.

Official UGA course description: Basic aspects of oceanography: ocean basins and plate tectonics, shallow and deep ocean circulation, waves and tides, marine biology and ecology, marine sediments, chemistry of seawater, paleoceanography, and environmental oceanography

Course Objectives: To acquaint students with the fundamentals of marine geology, of physical, biological, and chemical oceanography, of paleoceanography, and of the environmental aspects of oceanography; to increase their awareness of environmental issues, and to improve their skills in problem-solving.

By the end of the course, students should recognize the oceans as an interactive system in which chemical, physical, and biological factors are inter-related (see below), and for which budgets of water, chemical substances, sediments, and even organisms can be constructed. Throughout their lives, students will enter systems or organizations and have to discern patterns and relationships in those systems, whether those systems are universities, corporations, countries, or families. Students will do the same here by organizing what at first seems like a vast bowl of water into an intelligible inter-related framework.

A diagram that looks like spaghetti at the beginning of the course, but a roadmap at the end:



Oceanographic inter-relationships

Expectations: The professor assumes only a high-school level of knowledge of science, so that students from all majors can take the course and do well. The professor also assumes that the students want to learn and are willing to work in order to learn. Learning at the college level requires focused reading, daily review of lecture notes, and assimilation of the material covered. Students who want to learn and are willing to work will do well in the course.

<u>Course Requirements and Grading:</u>		<u>Proportion of</u>
<u>Requirement</u>	<u>Tentative Time / Date Due</u>	<u>course grade</u>
Exam 1 (Day 18/13)	Tuesday February 22, 2022 8:00-9:15 am 200A GG	21%
Exam 2 (Day 37/27)	Tuesday April 19, 2022 8:00-9:15 am 200A GG	24%
Final Exam	Tuesday, May 10, 2022 8:00 - 11:00 am 200A GG	30%
Ninne (±) Exercises	As appropriate	25%

Students who make or have made other commitments scheduled so that they cannot take an exam on the days and at the times listed above have chosen to not be present for that exam and to receive a grade of zero for that exam. Actual dates and times of exams may change as the UGA administration announces its revisions of the semester's schedule.

Exams: Mid-term exams will consist of short-answer questions, matching questions, and multiple choice questions. The first part of the final exam will resemble the mid-term exams and will deal with material covered after the second mid-term. The second part of the exam will be an essay question over any part of the course. The possible essay questions will be available before the exam via the course Web page; one question will be selected for the exam at the time of the exam by means of a random process. Copies of last year's exams are available on the course web page.

Exams must be written with non-red ink or sharp dark pencil. Use of computers, cell phones, and other communications or information-storage devices during an exam is prohibited.

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 or death in family 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.

Attendance: Records of attendance will not be kept, and attendance is not a factor in the grading scheme. However, previous experience has shown that students who do not attend class regularly will not be able to do well in the course. Students who do not attend class are choosing to receive low grades. Failure to have made the acquaintance of another student is not grounds for an exception to this policy.

Exercises: Exercises are intended to develop further understanding of material discussed in lecture or covered in the textbook. Discussion and comparison of exercises among students is acceptable, but completed 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.

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.

Course grades:

All exam grades and other grades are recorded as numbers, not letter grades. At the end of the course, final numerical averages are used to determine final letter grades. Percentages used to divide letter grades will be at or below the following values: A 92.00%, A- 90.00%, B+ 87.00%, B 83.0%, B- 80.0%, C+ 77.0%, C 73%, C- 70%, D+ 67%, D 63%, D- 60%. The actual dividing points vary from year to year because the dividing points are often lowered to allow a reasonable distribution of letter grades. There is always at least one "A", and there are usually several. Previous grade distributions are available from the course web page.

Withdrawal: The instructor reserves the right to submit statements of withdrawal for students who do not take the first mid-term examination. Students withdrawing before the midterm withdrawal deadline will be given grades of WP, if that the grade and a decision about it are relevant in Spring 2022.

Non-native speakers of English: Any GEOL 3030 student who is not a native speaker of English can ask for access to the professor's lecture files before lectures are given, so that the student can read the files in advance, look up new words in advance, and generally better understand the lecture. On GEOL 3030 exams, any student who is not a native speaker of English will be allowed to use a bilingual (e.g., French-English / English-French) dictionary in hard copy (but not on an electronic device). In the interest of fair practice, all such dictionaries will be examined at the beginning of the exam.

Accommodations for students with learning disabilities: Students with learning disabilities must inform the professor of measures needed to account for those disabilities by the end of the third class meeting. Students for whom the University provides a note-taker are reminded that note-takers are required to not deliver notes for any lecture that the disabled student does not attend.

Student Athletes: Students wishing that their course grades be released to advisors in the UGA athletics program must give the professor a signed dated letter indicating that wish and indicating the name and address of the person to whom the grades should be sent. The course web page has a sample letter.

Students whose religions hold sacred some days on which UGA holds classes: UGA policy states "Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. . . . It is the obligation of students to provide faculty with reasonable notice of the dates of religious holidays on which they plan to be absent." In Spring 2022, "reasonable notice" means "no later than January 27".

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. Seating may be assigned as needed.

Closing notebooks, putting on coats, and talking while the lecture or discussion ends are rude behaviors. Many students will still be trying to follow the lecture or discussion that they have paid to attend.

Cellular telephones should be deactivated during class time to avoid disturbing students who are trying to listen to class activities. Students using texting devices or other quiet communication devices, or who otherwise demonstrably ignore class business, are required to sit in the seats on the aisles nearest the side walls of Room 200A; failure to do so will result in lowering of the course grade by one letter grade (e.g., from B+ to C+) per occurrence. A diagram on the following page illustrates those seats.

Schedule and Readings:

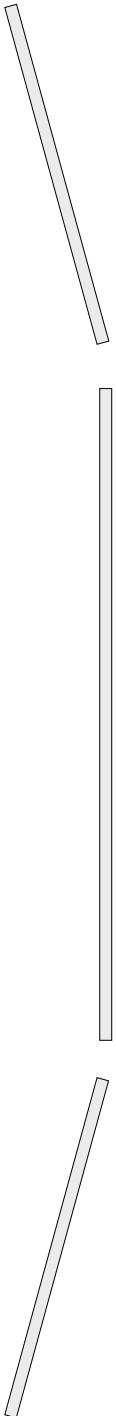
Topic	Thurman & Trujillo (10th) ¹ or	Trujillo & Thurman (11 th or 12 th) ²	Tentative Dates
Introduction	Syllabus; pp. 1-7; Ch. 1	Syllabus; 11 th edn: Ch. 1.1, 1.2, & 1.5 12 th edn: Ch. 1.1, 1.2, & 1.6	Jan 11-13
Geography & Geology of the Oceans	Ch. 3 & 4	Ch. 2 & 3	Jan 18-Feb 3
Physical Oceanography: Ocean Circ'n	Ch. 6 pp. 164-177 & 183-191; Ch. 7 & 8	Ch. 5, 6, & 7	February 3-17
Exam 1 ----- >			February 22, 2022
Physical Oceanography: Waves & Tides	Ch. 9 & 10	Ch. 8 & 9	Feb 17-Feb March 3
Biological Oceanography	Ch. 13 to 16	Ch. 12 to 15	March 15-April 12
Exam 2 ----- >			April 19, 2022
Chemical Oceanography	pp. 177-183; pages linked from course page	11 th edn: pp. 148-150; 12 th edn: pp.156-157; pages linked from course page	April 14-21
Three weird seas			April 21
Deep-sea sediments	Ch. 5	Ch. 4	April 26
Paleoceanography & the Future	Material on course web page	Material on course web page	April 28-May 3
Final Examination ----- >			8:00-11:00a Tuesday, May 10, 2022 in 200A GG

¹ Thurman, H.V. & Trujillo, A.P., 2004, *Introductory Oceanography*, 10th edn, Pearson Prentice Hall, 608 p.

² Trujillo, A.P., & Thurman, H.V., 2014, *Essentials of Oceanography*, 11th edn, Pearson, 578 p.

Trujillo, A.P., & Thurman, H.V., 2017, *Essentials of Oceanography*, 12th edn, Pearson, 597 p.

UGA required verbiage: All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about those standards before performing any academic work. The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.



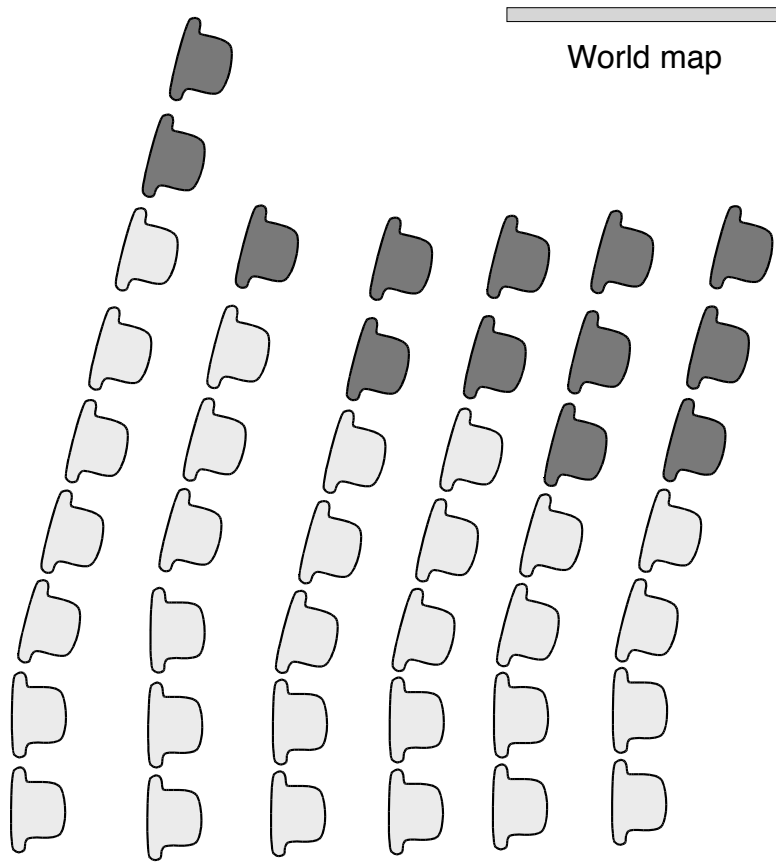
Table

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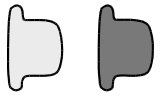
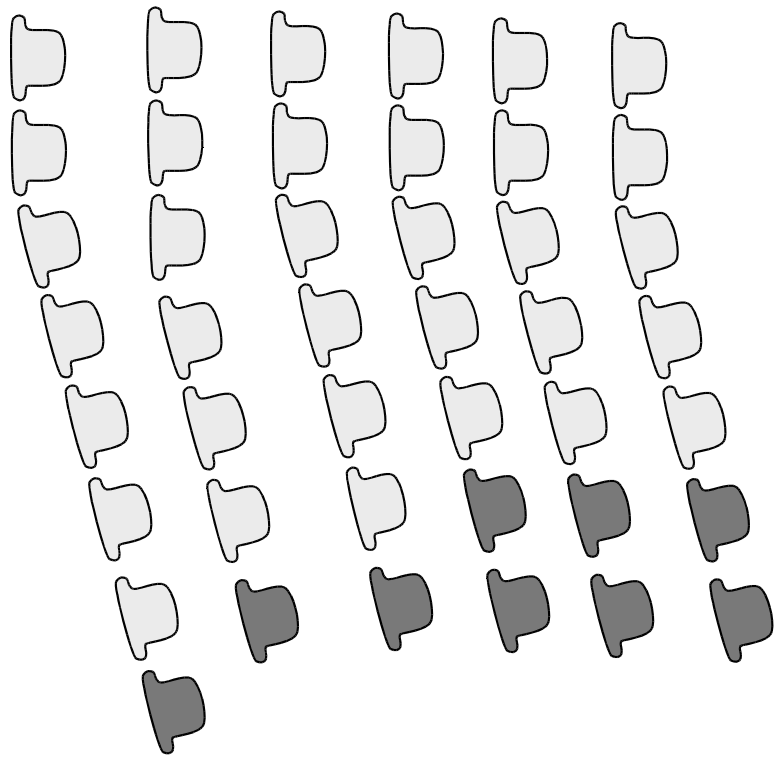
This seat is a poor choice for anyone attending Railsback's lectures because he commonly blocks the view of the projection screen from this seat.



World map



Periodic table



Seats reserved for students who will use texting devices, read newspapers or books, do cross-word puzzles, watch videos, or otherwise demonstrably ignore class business. Seats reserved for students who will not demonstrably ignore class business.

GEOL 3030 students using texting devices, reading newspapers, reading books, doing crossword puzzles, watching videos, or otherwise demonstrably ignoring class business are required to sit in the seats on the aisles nearest the side walls of Room 200A as shown above; failure to do so will result in lowering of the student's course grade by one letter grade (e.g., from B+ to C+) per occurrence.