

# Geology 100L THE EARTH: LAB

## Spring 2019



### Syllabus

**WHERE:** Lab Room 157, Science Hall, unless otherwise instructed

#### LAB SECTION INFORMATION

Day	Section	Instructor	Office and Office Hours
Tues 10 am-11:50 am	<b>1</b>	Nathan Young nlyoung@iastate.edu	165 Science Hall By appointment
Tues 1:10 pm-3 pm	<b>2</b>	Anna Maher amaher@iastate.edu	0008 Science Hall By appointment
Thurs 1:10 pm-3 pm	<b>3</b>	Anna Maher amaher@iastate.edu	0008 Science Hall By appointment

**Faculty-in-charge:** Aaron R. Wood  
**Office:** 360 Science Hall

**Email:** awood@iastate.edu  
**Office hours:** M & T (2:30 - 4 pm) or by appt.

This syllabus outlines the course requirements and provides details on assignments, grading procedures and general policies for this class. Included is a tentative schedule of lab activities, a description of what each lab will cover, and assignment due dates and times. It is also an agreement with regard to what is required for you to successfully complete this lab and what rules apply. Please refer to this syllabus as needed throughout the semester. Additional information and instructions concerning assignments will be provided in class through email and handouts throughout the semester.

#### COURSE GOALS

This lab course is designed to help you gain an understanding of Earth processes, Earth materials, and the methods used by geologists to study them. Most importantly, you will learn about the Earth through studying real-life questions during this lab. The skills you will develop throughout the semester will help you in unexpected ways in the future and include the ability to measure groundwater properties, identify minerals and rocks, and interpret scientific data related to plate tectonics, earthquakes, streams, etc.

#### MATERIALS

Each student is required to purchase the course packet (Lab Manual) available at the ISU bookstore. The course packet contains most of the lab assignments with instructions. You are *required* to bring the course packet to lab every week starting on Week 2.

#### ATTENDANCE

**Students are expected to attend all lab meetings.** You will be working in groups for the majority of the semester. Your group will be incomplete if you do not attend. If you need to miss class, you must contact your TA via e-mail. It is also recommended that you contact your group members.

### LAB ASSIGNMENTS

This course includes ten (10) lab activities (see the **Schedule** for details). Each lab involves collecting, analyzing, interpreting, and summarizing data in some capacity, and every student will be required to submit completed lab sheets for each of these exercises. Unless otherwise stated, lab sheets are due the following week at the beginning of the lab period but may be turned in earlier. Without extenuating circumstances, lab assignments may be turned in one week late for 50% credit. After that, you will receive a zero on the lab. Keep in mind that your lowest lab score will be dropped at the end of the semester.

### QUIZZES

Quizzes will be administered online through Canvas and/or in class. The purpose of quizzes is to gauge your understanding of the concepts presented in the lab. It is important that you do your own work for these quizzes. Copying another student, a web-page, or your lab manual for answers is not acceptable and is considered academic misconduct. Students who plagiarize will receive an automatic ZERO for that quiz grade and will be reported to the Dean of Students. Quizzes can be found in the "Quizzes" page on Canvas.

Quiz due dates are as follows:

*January 22/24 on Canvas before class*

*March 12/14 on Canvas before class*

*April 9/11 in class*

*May 9 on Canvas by 5 pm*

*Quiz 1: Syllabus Quiz*

*Quiz 2: Streams and Groundwater*

*Quiz 3: Minerals and Rocks*

*Final Quiz: Cumulative*

### FIELD TRIP

There will be a field trip on **Saturday, April 27<sup>th</sup>** to Dolliver State Park. Students will receive 15 points for attending the field trip and completing a short assignment. Students who do not attend the field trip will be required to complete a make-up assignment. The make up assignment will include writing a 3-5 page paper on water quality issues. It is to your benefit and the TAs benefit to attend the field trip! Transportation to Dolliver will be provided. Vans will leave from the loading dock of Science Hall at 8:30 am, be there at least 5 minutes early! We should return to Science Hall by 2 pm at the latest.

### RESEARCH PROJECT

This course will include a group project in which you will study water quality and processes in the Ames area using the scientific process. Your group will plan, implement, and present a research project using the equipment provided in the lab room or at our groundwater wells at Stuart Smith Park. The goal here is to give you an authentic research experience. More details can be found in the project overview document on Canvas and in the lab manual.

### CURRICULAR MODULE PILOT TEST

Students will be invited to participate in a pilot test of a new curricular module regarding GPS data and societally-relevant issues in the geosciences. Data on the efficacy of the curricular module will be collected from anonymized surveys and lab exercises. Students who participate will only be identified by the last four digits of the university ID numbers and no personal information will be passed on to the module evaluators. Students may opt out at any time, and opting out will not affect a students' grade or workload in the lab.

### CANVAS

Canvas will be used frequently in this course. Grades will be posted on Canvas, and some assignments will be submitted on Canvas. The syllabus and research project material will also be posted on Canvas. It is your responsibility to read what is posted on Canvas. Please let your TA know if you have questions or concerns.

### KEYS TO SUCCESS

This lab will only be successful if you put effort into it. There will be NUMEROUS class discussions and activities. It is vital you participate. Speak up! Share your ideas and your questions. Furthermore, we do not provide extensive outside reference material (i.e. textbooks) for many topics discussed in class. It is therefore necessary that you **take notes** on the information given to you by your instructor during the class period.

**ACADEMIC DISHONESTY**

The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office. Details can be found here: <http://www.dso.iastate.edu/ja/academic/misconduct.html>

**ACCESSIBILITY STATEMENT**

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to meet with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes. Eligible students will be provided with a Notification Letter for each course and reasonable accommodations will be arranged after timely delivery of the Notification Letter to the instructor. Students are encouraged to deliver Notification Letters as early in the semester as possible. SAS, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at [www.sas.dso.iastate.edu](http://www.sas.dso.iastate.edu). Contact SAS by email at [accessibility@iastate.edu](mailto:accessibility@iastate.edu) or by phone at 515-294-7220 for additional information.

**DEAD WEEK**

This class follows the Iowa State University Dead Week policy as noted in section 10.6.4 of the Faculty Handbook <http://www.provost.iastate.edu/resources/faculty-handbook>.

**INCLUSIVE, PROFESSIONALISM AND MUTUAL RESPECT STATEMENTS**

Students are expected to treat the instructors and all other participants in the course with courtesy and respect. Students' comments to others should be factual, constructive, and free from harassing statements. Students are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities). It is the instructor's goal to promote an atmosphere of mutual respect in the classroom.

Overall, students are responsible for living the tenets established in ISU's Principles of Community. Visit ISU's Principles of Community website (<http://www.diversity.iastate.edu/principles-of-community>) for more information. Students are also responsible for being familiar with the University's student rules and policies. Visit the ISU Policy Library website (<http://www.policy.iastate.edu/>) for more information.

Iowa State University is committed to proactively facilitating the well-being of all students. We welcome and encourage students to contact the following on-campus services for assistance regarding their physical, intellectual, occupational, spiritual, environmental, financial, social, and/or emotional needs:

- Student Wellness call (515) 294-1099 or via website (<http://studentwellness.iastate.edu>);
- Thielen Student Health Center call (515) 294-5801 (24/7 Medical Advice) or via website (<http://www.cyclonehealth.org>);
- Student Counseling Services call (515) 294-5056 or via website (<https://counseling.iastate.edu>);

Students dealing with heightened feelings of sadness or hopelessness, thoughts of harm or suicide, or increased anxiety may contact the ISU Crisis Text Line (Text ISU to 741-741) or contact the ISU Police Dept. (515) 294-4428.

The instructors are committed to creating a course that is inclusive in its design. If you encounter barriers, please let the instructors know immediately so that we can determine if there is a design adjustment that can be made or if an accommodation might be needed to overcome the limitations of the design. We are always happy to consider creative solutions as long as they do not compromise the intent of the assessment or learning activity. You are also welcome to contact the Student Accessibility Services (515-294-7220) to begin this conversation or to establish accommodations for this or other courses. The instructors welcome feedback that will assist us in improving the usability and experience for all students.

Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester.

**HARASSMENT AND DISCRIMINATION**

Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding non-discrimination policies may be directed to Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. 515-294-7612, email [eooffice@iastate.edu](mailto:eooffice@iastate.edu).

**RELIGIOUS ACCOMMODATION**

Iowa State University welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request reasonable accommodation for religious practices. In all cases, you must put your request in writing. The instructor will review the situation in an effort to provide a reasonable accommodation when possible to do so without fundamentally altering a course. For students, you should first discuss the conflict and your requested accommodation with your professor at the earliest possible time. You or your instructor may also seek assistance from the Dean of Students Office at 515-294-1020 or the Office of Equal Opportunity at 515-294-7612.

**CONTACT INFORMATION**

If you are experiencing, or have experienced, a problem with any of the above issues at the university level, email [academicissues@iastate.edu](mailto:academicissues@iastate.edu).

## SCHEDULE

This schedule is subject to change. Changes will be announced in class, by email, and/or on Canvas.

Week	Date	Activity	Due at beginning of class	Due on Canvas before class
1	Jan 15/17	Plate Tectonics		
2	Jan 22/24	Introduction to GPS	Plate Tectonics pg. 5-10	<b>Syllabus QUIZ</b>
3	Jan 29/31	Earthquakes & GPS	Intro to GPS pg. 12-18	
4	Feb 5/7	Glaciers, Sea Level, & GPS	Earthquakes & GPS pg. 20-37	
5	Feb 12/14	Groundwater & GPS	Glaciers & GPS pg. 40-52	
6	Feb 19/21	Stream & Groundwater Models 1	Groundwater & GPS pg. 54-71	
7	Feb 26/28	Stream & Groundwater Models 2	Stream/Groundwater pg. 83 &	Brainstorm 2 research questions
8	Mar 5/7	Field Data Collection (meet at Stuart Smith Park)	Process Map (see page 82)	
9	Mar 12/14	Research Project Help Session 1	Field Data Collection pg. 77-79 (due at end of class)	1) <b>Water QUIZ</b> 2) 1 <sup>st</sup> draft project proposal
March 18 - 22		Spring Break!		
10	Mar 26/28	Minerals		Project proposal final draft
11	Apr 2/4	Rock ID & Rock Cycle (1 <sup>st</sup> week)	Minerals pg. 86-87	
12	Apr 9/11	Rock ID & Rock Cycle (2 <sup>nd</sup> week) <b>Mineral &amp; Rock QUIZ</b> (in-class)		
13	Apr 16/18	Research Project Help Session 2	1) 4 copies of abstract 2) Rocks pg. 94-101	
April 21 (Sunday)		1 <sup>st</sup> Draft Research Poster due at 11:59 pm on Canvas		
14	Apr 23/25	Topographic Maps		
April 27 (Saturday)		Field trip to Dolliver State Park (8:30 am – 2 pm), transportation provided from ISU campus		
April 28 (Sunday)		Final Draft Research Poster due at 11:59 pm on Canvas		
15	Apr 30/May 2	Poster Presentations	Topo maps pg. 119-126	Field trip alternative assignment
May 2 (Thursday)		Poster Session 5-6:30 pm in Science Hall (mandatory attendance)		
May 9 (Thursday)		<b>Final Quiz &amp; Group Evaluations due at 5:00 pm on Canvas</b>		

## SCORING

Lab Assignments: 10 @ 10 pts each (Lowest lab score dropped)	90
Quiz 1: Syllabus; Open January 15 to January 24	5
Quiz 2: Water; Open March 5 to March 14	20
Quiz 3: Rocks; In class, April 9 & April 11	20
Final Quiz: Cumulative; Open May 2 to May 9	30
Field Trip (or make-up assignment)	15
Research Project (Detailed point distribution in Research Project Overview)	120
<b>Total</b>	<b>300</b>

## GRADING SCALE

Percentages for lower grade boundaries are as follows:

A	92%	B-	79%	D+	66%
A -	89%	C+	76%	D	62%
B+	86%	C	72%	D-	59%
B	82%	C-	69%	F	< 59