

Geologic Field Methods, 4 units
University of Northern Iowa – Fall 2020
Dr. C.E. Heinzl

Information:

Time/s = Monday, Friday 11 to 11:50 AND Wednesdays 2 to 5
Location = Latham Rm. 133 and outdoors
Contact = chad.heinzl@uni.edu , 319-273-6168 (office)
Final = Tuesday, Nov. 24, 10 to 11:50, Latham 133
Text - Geological Field Techniques by Angela Coe
SAS Survival Handbook, by John *Lofy* Wiseman

Learning outcomes:

1. Learn how to organize and conduct safe geologic field work
2. Develop an applied knowledge of geologic field tools
3. Apply field observations toward geologic mapping and interpretations
4. Learn to write/draw rock descriptions, field notes/maps, and office reports/maps
5. Obtain basic knowledge of structural geology, its recognition in the field, and relationships to geologic interpretations

Course goals:

You will have opportunities to apply geologic concepts and knowledge towards field observations. Proper field observations, descriptions and reports are the basis of potentially successful laboratory work, interpretations and communication of geologic data. Geologic data should help to inform scientists, miners, policy creators, land-use planners, law enforcement officers, farmers, citizens and many others in the Earth's dynamic processes, resources, hazards, and sustainability.

Course description:

EARTHSCI 3370. Geologic Field Methods — 4 hrs.

Students will be introduced to geological field safety, planning, and work (e.g. mapping, stratigraphy, rock, sediment, and descriptions etc.) Students will collect and record data using common geologic field methods and tools; synthesize geologic data collected in the field by producing geologic maps and cross-sections; and finally develop a justifiable geologic history based on multiple lines of evidence. Prerequisite(s): EARTHSCI 1300 (870:031). (Odd Falls)

UNI COVID Policy =

Protecting our campus from COVID-19 depends on all of us acting with care and responsibility. To protect each other and our campus community, we are required to wear masks or face shields that cover our mouths and noses inside all campus buildings, including throughout the duration of class. We are asked to self-screen for COVID-19 symptoms, stay away from others and seek medical attention if we're not feeling well and/or experience any symptoms such as a fever over 100.4°, and to communicate and plan proactively to make up for missed learning. We will maintain physical distancing by sitting in designated areas in the classroom. Failure to follow these requirements can result in students being referred to the student conduct process and faculty being referred to the Associate Provost for Faculty. We take these steps together recognizing that my mask protects you, your mask protects me, and together wearing masks protects the entire UNI community. Our collective actions will determine our ability to remain together in an in-person learning environment.

Second, Faculty Senate has approved the following addendum to Policy 3.06 on attendance to make COVID-19 related absences excused. When students need to miss class for illness, self-isolation, or quarantine, faculty must provide a means for students to remain current on material or a way to make up work missed.

Absences related to COVID-19 illness, self-isolation, or quarantine. Faculty teaching Face-to-Face must be prepared to also offer online instruction and/or have assignment alternatives for individual students who are unable to attend class due to COVID-related issues. This should also extend to field experiences that students may not be able to attend for the same reasons.

	<u>Class Schedule</u>	<u>Text/Reading</u>
Week One (Aug. 17-21)	Philosophy, Safety and Organization of Field Study Lab: Earth materials and topographic maps in review	Ch. 1
Week Two (Aug. 24-28)	Scale & Basic equipment and its uses Lab: Field safety, reconnaissance, processes	Ch. 2 & 3
Week Three (Aug 31-4)	Describing rock, preparing illustrations & writing Lab: Structure, Strike-Dip, Measurements	Ch. 4
Week Four (Sept. 7-11)	Basic outcrop procedures, sampling <i>Lab: Exam 1</i>	Ch. 12 & 13
Week Five (Sept. 14-18)	Use of GIS, aerial photography, LIDAR... Lab: Applied GIS, Geology & digital resources	
Week Six (Sept. 21-25)	Making a Geologic Map Lab: Sedimentary rock	Ch. 10
Week Seven (Sept. 28-2)	Recording Sedimentary rock features & Stratigraphic sections Lab: Sedimentary rock	Ch. 6
Week Eight (Oct. 5-9)	Recording Paleontological features Lab: Fossils, stratigraphy, environmental clues	Ch. 5
Week Nine (Oct. 12-16)	Recording Igneous and Metamorphic rock features Lab: Igneous and Metamorphic rock	Ch. 7 & 9
Week Ten (Oct. 19-23)	Structural geology features <i>Lab: Exam 2</i>	Ch. 8
Week Eleven (Oct. 26-30)	Quaternary/surficial geologic features Lab: Quaternary materials	
Week Twelve (Nov. 2-9)	Quaternary mapping Lab: Surficial mapping	
Week Thirteen (Nov. 12-16)	Environmental mapping Lab: Open	
Week Fourteen (Nov. 21-25)	<i>Final - Tuesday Nov. 24, 10 to 11:50, Latham 133</i> Comprehensive Project	

<u>Grading</u>	<u>Points (subject to change)</u>
Tests	1 = 100 2 = 100
Labs	10 @ 20 = 200
Final Project	1 = 100
Participation*	20
Approx. total	520: 480 > A, 420 > B, 380 > C, 320 > D

Class Attendance and Participation

Course questions will reflect and cover class 1) discussions, 2) field and lab activities, 3) text/journal readings, and 4) small group activities. Anything I say/discuss is fair game for a quiz or exam. Attendance is essential. If you listen, ask questions, take very good notes, and study for tests chances for earning a good grade are high! And the general guidelines of UNI's attendance policy will be employed, <https://policies.uni.edu/306>).

UNI - Statements for Non-discrimination and Accessibility

A. Office of Compliance and Equity Management

The University of Northern Iowa does not discriminate in employment or education. Visit 13.03 Equal Opportunity & Non-Discrimination Statement (<https://policies.uni.edu/1303>) for additional information.

B. Student Accessibility Services

Non-discrimination based on Disabilities, The University of Northern Iowa (UNI) complies with the Americans with Disabilities Act Amendments Act of 2008 (ADAAA), Section 504 of the Rehabilitation Act of 1973, the Fair Housing Act, and other applicable federal and state laws and regulations that prohibit discrimination on the basis of disability. To request accommodations please contact Student Accessibility Services (SAS), located at ITTC 007, for more information either at (319) 273-2677 or Email accessibility services@uni.edu . Visit Student Accessibility Services (<https://sas.uni.edu/>) for additional information.

C. The Learning Center @ Rod Library

All UNI students are encouraged to take advantage of The Learning Center @ Rod Library (TLC) for assistance with writing, math, science, learning and study strategies, as well as other specific content areas. Due to COVID-19, all tutoring and coaching sessions will be done by appointment only and students will have the option to meet with a tutor in-person at Rod Library or via Zoom. Our hours will remain the same, from 10:00 am to 10:00 pm Monday through Thursday. For more information, go to <https://tlc.uni.edu/> schedule, email TheLearningCenter@uni.edu , call 319-273-6023, or visit the TLC desk located on the main floor of Rod Library. If you are unavailable during normal tutoring hours, online tutoring is also available through Smarthinking. You will need your CATID and passphrase to gain access. To access the Smarthinking platform go to <https://tlc.uni.edu/online> .

Additional recommendations from UNI's Center for Excellence in Teaching & Learning

A. Course materials, accessibility and opportunities for enhanced success

- a. Textbooks – Geological Field Techniques, by Angela Coe and SAS Survival Handbook, by John *Lofty* Wiseman
- b. Computers, Are available throughout campus. Having access to a computer and the internet is important, especially if we are forced to move online.
- c. Course webpage – You will have access to some course materials and additional learning resources through the following webpage - <https://www.exploreiowageology.org>
- d. UNI-E-Learning – <https://elearning.uni.edu/> , This software will be used to help you keep track of your course progress - primarily scores from lab work, tests and participation.

B. Geologic Field Methods classroom civility –

- a. Be respectful to everyone at all times.
- b. Be on time, pay attention (do not hold side conversations during class), and participate.
- c. Represent UNI well when on and off campus.
- d. Reduce use and silence phones in class and during field trips.
- e. Social distancing and masks are required, please be respectful and safe ☐

How to learn and do well

1. Attend class (in person or virtually)
2. Keep up with course reading materials
3. Participate in course activities, discussions and ask questions
4. Study for weekly quizzes (each Friday @20pts) and exams
5. Use graded quizzes to prepare for exams

You will fail if you this class if you degrade our learning experiences by...

1. Directly or indirectly harming your classmates,
2. Indulging in any negative behavior,
3. Earning less than 310 points,
4. Cheat, Plagiarize, or engage in other dishonest activities

UNI services

I encourage you to use the Academic Learning Center's free assistance with writing, math, science, and college reading and learning strategies. UNI's Academic Learning Center tutoring services are located in 008 Innovative Teaching and Technology Center (ITTC). For more information, go to unialc.uni.edu/tutor-services or call 319-273-6023 to set up an appointment.

Quotes to ponder...

To see a World in a Grain of Sand,
And a Heaven in a Wild Flower,
Hold Infinity in the palm of your hand,
And Eternity in an hour.

- **William Blake**, Beginning of Auguries of Innocence

Now, a few words on looking for things. When you go looking for something specific, your chances of finding it are very bad. Because of all the things in the world, you're only looking for one of them. When you go looking for anything at all, your chances of finding it are very good. Because of all the things in the world, you're sure to find some of them." - **Daryl Zero**

Don't let schooling interfere with your education. - **Mark Twain**

Nobody can teach the geography of the undiscovered. All he can do is encourage the will to explore, plus impress upon the inexperienced a few of the dos and don'ts of voyaging. - **Wallace Stegner**, On the Teaching of Creative Writing...