Geologic Field Methods EarthSci3370
University of Northern Iowa – Fall 2022
Dr. C.E. Heinzel

Logistics

Time/s	Monday, Wednesday 2 to 2:50 AND Friday 3 to 5
Location	Latham Rm. 133 and outdoors
Contact	chad.heinzel@uni.edu , 319-273-6168 (office)
Text	Geologic Field Techniques by Angela Coe, SAS Survival Handbook by Lofty Wiseman
Credits	Four - This course meets the Course Credit Hour Expectation outlined in the Course Catalog. You should expect to work approximately TWO hours per week outside of class for every course credit hour, (so at least EIGHT hours per week).

Extended Field Trips

Sept. 23-25	Baraboo, WI Devils Lake - Igneous/Structural Geology
Oct. 21-23	Maquoketa River Canoe Trip
Oct. 28-30	Northeast Iowa

Will leave from Latham Hall at 3pm on Friday's

Course description EarthSci:3370 -
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. (Odd Falls)

Learning objectives -
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, it's 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.

Weekly Schedule
1 – Aug. 22,24,26 – Philosophy, Safety and Organization of Field Study
Lab – Earth materials in review and Field safety
2 – Aug. 29,31,2 – Basic equipment and applications (Measurements physical to digital)
Lab – Equipment skill development
3 – Sept. 5, 7, 9 – Equipment skill development continued
Lab – Digital field techniques
4 – Sept. 12, 14, 16 – Characterizing rock and sediments in the field
Lab – Illustrations, field notes and reports
5 – Sept. 19, 21, 23 – Structural geology and mapping
Lab – Field trip to Baraboo, WI

6 – Sept. 26, 28, 30 – Stratigraphic sections
Lab – Tripoli Quarry
7 – Oct. 3, 5, 7 – Quaternary sediment and soil characterization
Lab – Soil description, identification and taxonomy
8 – Oct. 10, 12, 14 – Glacial, fluvial and eolian environments of the upper Midwest
Lab – Dry Run and/or Black Hawk Creek
9 – Oct. 17, 19, 21 – Watershed/Stream delineation
Lab – Maquoketa Trip
10 – Oct. 24, 26, 28 – Geologic Mapping on a topographic base
Lab – Northeast Iowa Field Trip
11 – Oct. 31, 2, 4 – Glacial environments of the upper Midwest
Lab – Local Quarry TBD
12 – Nov. 7, 9, 11 – Carbonate environments
Lab – Describing a core
13 – Nov. 14, 16, 18 – Open
Lab – Student Work Day
14 – Fall Break
15 – Nov. 28, 30, 2 – Igneous to metamorphic, Field studies
Lab – Igneous and metamorphic rock characterization and mapping
16 – Dec. 5, 7, 9 – Open
Lab – Student work Day
17 – Dec. 12-16 (Finals Week) Final Monday Dec. 12 3 to 5PM – Project presentations

Grading	**Points (subject to change)**	
Labs	12 @ 20 to 40 pts	400
Project	1 @ 100	100
Check-ins and presentation		40
Field trip reports	3 @ 30 to 40	100
Participation*		20
Approx. total		660

*Participation –Points may be earned by attending class, asking questions, and participating in discussions. Points may be lost by having unexcused absences and/or not participating.

Class Attendance and Participation

Course questions will reflect and cover class 1) lectures 2) labs, 3) readings. *Attendance is essential* points are primarily based on weekly in class work. If you do not attend class there is little chance of learning the material you signed up for… 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 info.

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

A. Course materials, accessibility and opportunities for enhanced success

a. Textbooks – 1. Geologic Field Techniques by Angela Coe and
2. SAS Survival Handbook by Lofty Wiseman

b. Computers & data – You will need access to a computer and ArcGIS or ArcPro software.

c. Field trips – Field trips are required unless you have an excused absence.

d. Course webpage – You will have access to some course materials and additional learning resources through the following webpage - https://www.exploreiowageology.org/

e. UNI-E-Learning – https://elearning.uni.edu/, This software will be used to help you keep track of your course progress - primarily scores from homework, fieldwork, tests, etc.

f. Additional resources

1) Geology in the Field by Robert Compton
2) Wiley's Blackwell Field Description of Igneous, Metamorphic and Sedimentary rocks on separate book for each rock type

B. Pro-Tips for doing well in this class

1. Engage the content material through our discussions, search for information related to our discussions beyond what is provided and work to apply our content to your personal environments.
2. If you don't understand something, ask questions and try again to apply your developing knowledge
3. 7P rule: Prior Proper Planning Prevents Piss Poor Performance

You may 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. Not earning enough points or skills,
4. Cheat, Plagiarize, or engage in other dishonest activities.