



Glacial Stratigraphy & Geophysics – Autumn 2015 EEES 6100-001 (59935)

Instructor: Dr. Don Stierman – dstierm@utnet.utoledo.edu

Office Hours: **W 11 – 2, R 11 – 1 in BO 3045A 419-530-2860 Autumn 2015**

Laboratory door (hallway door) should be unlocked. Please do not knock, just come in.

Instructor: Dr. David Krantz - david.krantz@Utoledo.edu

Office Hours:

Class meets in WO 1234 from 8 to noon Fridays. Extensive field work.

3 credit hours.

CATALOG DESCRIPTION: To integrate glacial sedimentology and stratigraphy, with near-surface, geophysical methodologies. Field work to collect a variety of field data to analyze in the lab is mandatory. Data to be presented as posters.

COURSE OVERVIEW: Field work will involve collecting a variety of field data using ground-penetrating radar (GPR), seismic refractions and electrical resistivity, core and outcrop data in order to solve a research problem. Data worked up in the lab will then be presented as posters and in talks. Early in the semester, we will read background material and learn basic operations of geophysical instruments in field settings. We will identify a research target by the end of the third week and spend the next month collecting field data. The last third of the semester will involve data analysis, interpretation, poster and oral presentations. Students will download elevation data and generate DEMs in an effort to identify promising projects.

Tentative Schedule: (subject to revision!)

August 28: Introduction, glacial history of northwest Ohio and southeastern Michigan

September 4: Field excursion to visit previous project sites and key exposures

September 11 & 18: GPR, electrical resistivity, seismic refraction: basic field procedures and data interpretation.

September 25: scouting field trip (Presidential inauguration in PM!)

October 2, 9, 16 & 23: collecting field data

October 30 & November: Data analysis, poster and talk preparation

December 4 and 11: poster and oral presentations

STUDENT LEARNING OUTCOMES

Students will learn to state a hypothesis that can be answered ‘yes’ or ‘no’, and then collect data that will test that hypothesis.

TEACHING STRATEGIES

Frank Press, Caltech Professor of Geophysics and the man who taught my¹ mentors, said ‘*We learn best by doing.*’ The instructors do not know the answers to the questions we will investigate.

PREREQUISITES AND COREQUISITES

Enrolled in the Master of Science (Geology) program.

TECHNOLOGY REQUIREMENTS

Students will find readings posted on Blackboard.

COURSE EXPECTATIONS

Talk & Poster Presentation

Each student will be responsible for presenting a poster and a talk on a topic selected with the approval of the instructors. Integral to the poster will be a well-written abstract, and the student will be expected to give a 15 minute oral presentation on their topic and be prepared to answer questions on its content.

Class time will be used to discuss what makes a good poster and a good talk.

¹ D. Stierman

Field Work

Because the purpose of this course is to collect field data and work it up into presentable interpretations, the first half of the semester will have numerous excursions to familiarize students with the geophysical instruments and glacial stratigraphy.

Disclaimer

This course evolves as the semester unrolls, and is a significant departure from the standard lecture/lab course. This is a good thing because this course gets you involved in actual research. You will be developing a hypothesis, come up with a methodology to test that hypothesis, and to the field research to collect data toward testing that hypothesis. As a result, parts of the course will not run smoothly. Do not get discouraged. Realize that you are getting experience into the real world of research. Similarly, the time required for this course will most likely not be a consistent 3 – 6 hours per week, but will likely follow a binge and purge cycle. Again, this is a real world experience. A good attitude, willingness to try new things, and the ability to improvise and ‘think outside the box’ will be welcomed!

GRADING

A through F. Grade will be based on your participation during field work, lab work, data work-up, poster and oral presentations.

COMMUNICATION GUIDELINES

Please check your Rocket email daily. We use Rocket email for official communications. Please text 419-376-8305 (my cell phone) from your mobile phone so I can get in touch with you if the need arises. If you get caught at a RR crossing on your way to the 8 AM field class, please let us know that you are in transit.



UNIVERSITY POLICIES *The University is an equal opportunity educational institution. Please read [The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.](#))*

Academic Accommodations *The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the [Student Disability Services Office.](#))*
