

**Geologic Mapping – Gly 212**  
**Prerequisite: GLY 110, 200 or 201**  
**Dewey D. Sanderson**

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**Office Hours:** M,W, F, 11-12:30 and T, 10-2; other times by appointment

**Grade Scale:** 90's –A, 80's-B, 70's-C, 60's-D, <60-F

**Text:** none

**Course Objectives:** To develop a basic understanding and working knowledge of trigonometry as it relates to mapping. To learn operation of the Brunton compass, theodolite and GPS instruments and the presentation of their data in map and profile form. The software program SURFER will be used for most of the presentation of mapping information.

**Grading:** The course is taught primarily as a lab type course with much of the work being done outside. Each exercise is worth a possible 10 points. An exercise is normally introduced one week and submitted for grading the following week. Credit will be lost for assignments not turned in on time (0.5 point/day). There may or may not be a final for the course depending on the performance of the class during the semester. If there is a test, it would be the last regularly scheduled class period and will be the equivalent of three lab exercises. Your course grade will be the average of all exercises and the test, if there is one.

**Attendance:** No regular attendance will be taken and if you are absent, it is your responsibility to find out what was covered and assigned during your absence. If an absence, which is documented as university excused, prevents you from turning an assignment in on time, no late penalty will be assessed.

**Learner Outcome:** To be able to collect, compile, reduce various mapping data and present it in numerical and/or graphical form.

**Outline of Course**

Some exercises are done individually, some in pairs or teams.

A. Basic Trigonometry for Mapping

Exercise #1, Applied Mapping Trigonometry

Exercise #2, Coordinate Determination

Exercise #3, Site Map by Coordinates

B. The Brunton Compass

Exercise #4, Applied Trigonometry with the Brunton Compass

Exercise #5, Preparing a Property Map

C. The Theodolite

Exercise #6, XYZ Data Reduction

Exercise #7, Vertical/Horizontal Loop Survey

Exercise #8, Theodolite Profile Survey

Exercise #9, Global Positioning(GPS)

Exercise #10, ArcGIS 1

Exercise #11, ArcGIS 2

D. Laboratory Exam (instructor's option)