Minnesota State University Moorhead

GEOS 370: Structural Geology and Mapping

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:
GEOS 115 - Physical Geology

Corequisites: None

MnTC Goals: None

This course covers key aspects of structural geology including deformational structures, deformational styles, and material properties. The lab focuses on mapping skills such as interpretation of geological maps and inferring cross-sectional view based on map views.

B. COURSE EFFECTIVE DATES: 08/15/2006 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Brittle deformation: jointing and fractures; faults, normal, thrust, strike-slip; stress and strain, tensors, Mohr circle; types of deformation, experiments
2. Ductile deformation: parts of folds; orientation of folds; style of folds; fold kinematics; foliation and lineation
3. Mapping skills: Horizontal and dipping strata, maps; Three point problems; Unconformities; Folds; Map solution without structure contours); Faults; Igneous features; Field experience

D. LEARNING OUTCOMES (General)

1. Student will be able to explain with words and drawings the important concepts of structural geology.
2. Students will be able to interpret geological maps, infer depth of selected layers, extent and depth of buried horizons.
3. Students will be able to draw cross-sectional views based on map representations of rocks.
4. Students will be able to measure trend of structural features in the field.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted