

# North Hennepin Community College

## EEVS 1130: Rocky Mountain Field Study

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course is designed for people interested in learning about basic principles of astronomy, geology, and meteorology in an applied setting. This course is offered as a component of our Outdoor Education Program, usually during summer session. Classes meet on campus for several weeks followed by 7-10 days in the Rocky Mountains and surrounding areas. Topics include: rock and mineral identification, geologic history of the area, geologic time, plate tectonics, topographic maps, surficial processes, physical processes of weather and astronomical features.

**B. COURSE EFFECTIVE DATES:** 10/19/2017 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Students will be introduced to and work with the tools that geoscientists have used in their scientific practice to unravel our understanding of: 1) how the earth and solar system were formed, 2) the internal structure of the earth and the earth as a system and 3) the internal and external processes that shape the earth's surface and that can be natural hazards. 4) meteorologic concepts such as cloud formation and recognition, physical processes of weather and storms and climate change.

#### Course Outline

The course outline contains a description of the content, student competencies, MnTC goal

2. In addition to the topics of origin & evolution of the solar system and earth, students will be introduced to and practice using the scientific process and basic geologic concepts and content along with topographic and geologic maps to explore such topics as plate tectonics, rock and mineral identification, geologic time, earth system and cycles, landform development.

## **D. LEARNING OUTCOMES (General)**

1. Describe and use the scientific method; explain what science is, how it works and the role of science in society; and discriminate/recognize science from pseudoscience by evaluating examples (MnTC G-3a; MnTC G-9c; NHCC ELO #1, 2)
2. Practice making observations, formulating scientific questions, developing hypotheses and means to test them, and predict outcomes related to their hypotheses (MnTC G-3a,b,c; NHCC ELO #1, 2)
3. Describe/explain, using words and pictures: a) commonly accepted theories on the origin of our solar system, b) the subsequent development of and controls on the layered structure of earth, and c) the data/observations scientists used in support of such (MnTC G-3a,c,d; NHCC ELO #1, 2)
4. Demonstrate, using words and pictures: a) an understanding of plate tectonic theory; b) how and why plate tectonics is considered the unifying theory in geology; and c) recognize its influence, by way of example, in formation of earth materials and landscape construction related to western North America (MnTC G-3a,c,d; NHCC ELO #1, 2)
5. Explain and apply, using words and pictures, basic astronomic, geologic and meteorologic principles in a field setting (MnTC G-3a,c; NHCC ELO #1, 2)
6. Develop an understanding of cyclicity and interaction in earth-atmosphere systems with emphasis on influence of terrane on meteorologic conditions and climate change (MnTC G-3a,c,d; NHCC ELO #1, 2)
7. Recognize landforms common to Rocky Mountains in model, diagram, photographic and map form in preparation for field trip and will relate them to the surficial or internal processes that created them (MnTC G-3a,c,d; NHCC ELO #1, 2)
8. Identify celestial bodies such as stars, constellations and planets appropriate to the time of year and latitude of field excursion (MnTC G-3a,c, NHCC ELO #1,2)
9. Recognize and explain the significant of and show and appreciation for geologic time, the geologic time scale and the methods with which geologists determine the ages of rock layers and the geologic events they represent (MnTC G3a,c,d; NHCC ELO #1,2)
10. Demonstrate an understanding of the concept of classification; with emphasis on the relationship between rock classification schemes, the origin of various rocks and plate tectonic theory (MnTC G-3a, c; NHCC ELO #1,2)
11. Recognize patters in geologic information.data and relate these patterns to geologic processes, features and/or earth materials (MnTC G-3a,c,d; NHCC ELO #1,2)
12. Use comprehension skills such as translation, interpretation, and extrapolation to interpret geologic data presented in written, graphic, or pictorial form (MnTC G-3a, c, d; NHCC ELO #1,2)

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

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

None noted