



## CATALOG DESCRIPTION

The origin, classification, and identification of igneous, sedimentary, and metamorphic rocks. This class includes a field trip.

Prerequisites: GEOL 270

Semester Offered: Spring

### **Common Student Learning Outcomes**

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

#### **BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

#### **CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

#### **CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

#### **EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

#### **INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

#### **INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

*Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.*

## Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Understand the structure, texture, composition, classification, and formation of igneous rocks, including both volcanic and plutonic forms.
2. Understand the structure, texture, composition, and classification of sedimentary rocks, including weathering, transport, deposition, provenance, diagenesis, and types of sedimentary environments.
3. Understand metamorphism and metamorphic texture, composition, and classification of metamorphic rocks.
4. Differentiate structures in extrusive vs. intrusive igneous rocks.
5. Recognize and identify textures in igneous rocks.
6. Recognize major igneous minerals, and classify igneous rocks based on their composition.

7. Use igneous phase diagrams and the phase rule.
8. Identify and describe igneous rocks using appropriate rock names.
9. Recognize and describe sedimentary structures and textures.
10. Recognize major sedimentary minerals for both clastic and chemical rocks.
11. Describe the products of weathering, the transportation of sediments, and diagenesis.
12. Describe the major continental, transitional, and marine environments, along with their characteristic sedimentary deposits.
13. Identify and describe sedimentary rocks using appropriate rock names.
14. Describe the agents and types of metamorphism, including pressure, temperature, and chemically active fluids.
15. Recognize metamorphic textures and structures.
16. Recognize major metamorphic minerals, and apply the metamorphic facies concept.
17. Use metamorphic phase diagrams.
18. Describe metamorphic environments and identify and describe their characteristic metamorphic rocks.