

SYLLABUS

COURSE # AND TITLE: GEOL 271, Petrology
OF CREDITS: 4 (3+2P)

CATALOG DESCRIPTION

The origin, classification, and identification of igneous, sedimentary, and metamorphic rocks.

Semester Offered: On Demand
Prerequisites: GEOL 270

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will...

<i>Learn</i>	<i>Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.</i>
<i>Think</i>	<i>Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.</i>
<i>Communicate</i>	<i>Students will exchange ideas and information with clarity and originality in multiple contexts.</i>
<i>Integrate</i>	<i>Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.</i>
<i>Act</i>	<i>Students will act purposefully, reflectively, and respectfully in diverse and complex environments.</i>

GENERAL LEARNING OBJECTIVES

Upon completion of the course, the student should understand the following content areas:

1. Structure, texture, composition, classification, and formation of igneous rocks, including both volcanic and plutonic forms.
2. Structure, texture, composition, and classification of sedimentary rocks, including weathering, transport, deposition, provenance, diagenesis, and types of sedimentary environments.
3. Metamorphism and metamorphic texture, composition, and classification of metamorphic rocks.

SPECIFIC LEARNING OUTCOMES

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

1. Differentiate structures in extrusive vs. intrusive igneous rocks
2. Recognize and identify textures in igneous rocks
3. Recognize major igneous minerals, and classify igneous rocks based on their composition
4. Use igneous phase diagrams and the phase rule

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

Syllabus developed by _____ Date: _____

Syllabus reviewed by _____ Date: _____

A current syllabus must be on file in the dean's office for every course being taught during a given semester.