

GEOL 1040: Physical Geology

Instructor Information:

Name
Office phone
Office location
Office hours
E-mail address

I. Course Description

This course is an introduction to the principles of modern Geology, emphasizing the origin, composition, and evolution of the solid earth. Rock-forming minerals, igneous, sedimentary, and metamorphic rocks, rock and hydrologic cycles, plate tectonics, earthquakes, landform development and geologic times are covered. The course includes identification and description of minerals and rock samples, and use of topographic and geological maps.

Credit Hours: 4 Credits 3 Class Hours, 3 Lab Hours

Prerequisite: Level 2 placement in Math and Reading.

II. Course Outcomes and Topics

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

- Discuss the physical features and processes of running water, ground water, wind, and glaciation that shape the Earth's surface through erosion and weathering.
- Explain the structure and interior composition of the Earth.
- Identify the tools and techniques used by geologists to study the Earth
- Analyze the origin, textures, and composition of common minerals and rocks.
- Compare and contrast the forces of volcanism, earthquakes, tsunamis, and other geological hazards.
- Analyze the theory of plate tectonics and its relationship to volcanoes, earthquakes, folded and faulted strata, and mountain building.
- Compare the geology of the Nashville area including the Nashville Dome, the Appalachian mountains, and the New Madrid fault zone.
- Explain the concept of geologic time and analyze the history of life forms on Earth.

Topics

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| <ul style="list-style-type: none"> • Foundations of Geology • The Scientific Method and the Formation of Theories • Atomic theory and the composition of matter • Bonding and compounds • The Elements and the periodic table | <ul style="list-style-type: none"> • Physical characteristics of minerals and mineral identification • Mineral groups • Intrusive and extrusive igneous rocks • Types and characteristics of volcanoes and prediction of eruptions • Magmatic differentiation and igneous structures |
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- Sedimentary and metamorphic rocks
- Weathering, erosion, and soils
- The Earth's interior layers
- Plate tectonic theory
- Types of plate boundaries and their characteristics
- Earthquakes and faults in the United States
- Mountain building
- Agents of erosion and environments of deposition (Running water, ground water, glaciers, wind, beaches, ocean basins)
- Geologic history

Laboratory Topics

- Mineral properties and identification
- Intrusive igneous rock identification
- Extrusive igneous rock identification
- Sedimentary rock identification
- Metamorphic rock identification
- Topographic maps, contouring, and interpretation
- Stream processes
- Groundwater processes and caverns
- Glacial processes and landforms
- Eolian processes and landforms
- Costal processes and landforms
- Earthquake epicenters
- Structures and geologic maps
- Oil exploration exercise
- Relative and absolute age dating
- Fossil identification

III. Required Materials

- Textbook: Tarbuck & Lutgen: Earth: An Introduction to Physical Geology, 10th edition, Publisher: Pearson Prentice Hall, ISBN 0-321-66304-7
- AND
- Lab Manual: American Geological Institute: Laboratory Manual In Physical Geology, 9th edition, Publisher: Pearson, ISBN 0321689577.

IV. Course Policies

Attendance

Each Instructor will provide information regarding his/her attendance policy. Failure to attend class will result in a final course grade of "FA" or "FN" (see explanation below) depending on the individual instructor's course policy.

FA= failure, attendance-related (unofficial withdrawal) Last recorded date of attendance required

FN= failure, never attended class (unofficial withdrawal)

Please be advised that instructors also may have a more specific class policy.

Method of Assessment & Evaluation: Subject to change at instructor's discretion

Learning Activities: Tentative. May change at the discretion of the instructor.

Lecture

The first half of class will consist of lectures and discussion of concepts. Two or

more chapters in the textbook will be covered each week. There are five exams covering lectures and related chapters in the textbook. Exams will include multiple choice questions, true-false, matching, fill in the blanks or short discussion questions. Each exam is worth 100 points. A comprehensive final exam will be worth 200 points.

Lab

The second half of the class is devoted to group work involving practical applications of the material covered in lecture. The 15 lab exercises are worth 10 points each, 150 points total. There are three practical lab exams worth 50 points each on identification of minerals, rocks and fossils. There are 300 total points for lab, approximately 30% of your total grade.

Assessment

There are 1000 points possible for the course, and final grades will be based on the following:

900-1000 points A, 800-899 points B, 700-799 points C, 650-699 points D, below 650 points F.

Please make every effort to be on time, come to every class and try not to miss a regularly scheduled exam. Make up exams must be done within one week (7 days) of the regularly scheduled exam. **You are responsible for scheduling a time for make up exams with the instructor. Lab exercises are due the day they are assigned unless otherwise specified. There are no make ups for the lab exercises. Expect to lose 10 points if you are absent from labs.**

Optional Extra Credit: 10 points

You may research published articles, books or the internet, on any topic related to the course and give a brief (10 minute) presentation in class. The topic can be informational or controversial. It may cover a global concept such as global warming or plate tectonics, or may be a specific topic of interest such as gold mining in Alaska, volcanoes or earthquakes. Your presentation should include visual displays. Get approval from the instructor when you have selected a topic, or if you have trouble deciding on one. **Copies of articles you use must be turned in. Presentations will be given the last week of class.**

Safety

The instructor will go over new regulations regarding safety in lab classes. You must turn in a signed copy of the regulations, and you will have a copy to keep.

Student Communication Channels

It is the student's responsibility to check NS Online (D2L) and MyNSCC email on a regular basis. These are the official communication channels between the college and students. Students are responsible for the information communicated through those channels. NS Online contains specific course information and MyNSCC contains information important for other purposes.

V. ADA Statement

Nashville State Technical Community College complies with the Americans with Disabilities Act. If you wish to request any special accommodations for any courses in which you are enrolled, contact the Disability Coordinator at 353-3721 in the Student Services building. Such services must have proof of documentation that is not over three years old.

VI. Classroom Behavior

Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions.

The instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. He/she can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or in conduct which violates the general rules and regulations of the College. Disruptive behavior in the classroom may be defined as, but is not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.).

Please be aware that children are not allowed in class or unattended on campus.

Academic Dishonesty (Honor Code)

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. "Plagiarism may result from: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words" (A Writer's Reference 331). Academic dishonesty may be defined as, but is not limited to, intentionally trying to deceive by claiming credit for the work of another person, using information from a web page or source without citing the reference, fraudulently using someone else's work on an exam, paper, or assignment, recycling your own work from another course, purchasing papers or materials from another source and presenting them as your own, attempting to obtain exams/materials/assignments in advance of the date of administration by the instructor, impersonating someone else in a testing situation, providing confidential test information to someone else, submitting the same assignment in two different classes without requesting both instructor's permission, allowing

someone else to copy or use your work, using someone else's work to complete your own, altering documents, transcripts or grades, and forging a faculty/staff member's signature.

In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an "F" or a "Zero" for the exercise, paper, or examination or to assign an "F" for the course.

NOTE: This syllabus is meant simply as a guide and overview of the course, the topics, the objectives, the general assessments, and some standard college policies. Some items are subject to change or revision at the instructor's discretion. Each instructor will further clarify their criteria for grading, classroom procedures, attendance, exams and dates, etc.