

GEO 202 Environmental Geology

Spring 2009

GEO 202 is a lecture/lab course involving the study and identification of commonly occurring minerals, rocks, and fossils. The chemistry, structure, and geological occurrence of minerals and rocks will be discussed as well as their economic importance and contribution to the growth of modern civilization. Some environmental problems regarding the use of minerals and rocks will also be discussed. Fossils will be discussed in the content of geologic time. Their importance in the interpretation of the earth's geologic history will be stressed.

INSTRUCTOR: Frederick DeGroot

OFFICE: Earth & Resource Science (ERS)
516 Murchie Science Building

PHONE: (810) 762-3355

OFFICE HOURS: 7:30-8:00 AM - M, T, W, R
Or by appointment

E-MAIL FDeGroot@umflint.edu

Text:

Required: 1.) Essentials of Geology (9th edition)
By: Frederick L. Lutgens and Edward J. Tarbuck.

2.) Lab Packet

Optional: Rock Cards

OR

A mineral/rock field guide such as Simon and Schuster's Guide to Rocks and Minerals, The Audubon Society Field Guide to North American Rocks and Minerals, etc.

GRADING POLICY:

The course is graded A, B, C, D, and E. There will be four (4) tests (2 lecture tests and 2 lab tests). The percentage of the total grade (100%) provided by the tests will be distributed as followed:

$$\begin{array}{rcl} \text{Mineral lecture and lab tests @ 25\% each} & = & 50\% \\ \text{Rock lecture and lab tests @ 25\% each} & = & \underline{50\%} \\ & & 100\% \end{array}$$

There is no provision for extra credit, such as additional papers, etc. The grade for the course will be based entirely on the test grades.

GRADING SCALE:	90 – 100%	=	A
	80 – 89 %	=	B
	70 – 79 %	=	C
	60 – 69 %	=	D
	0 – 59 %	=	E

An incomplete (I) will only be given at the instructors discretion if the student is passing the course with a 70% (C) or better.

ATTENDANCE:

Attendance is expected and will be taken regularly. Attending class (lecture and Lab) is extremely important with respect to gaining a complete understanding of the course material. Good performance in class appears to be closely linked to attendance and the quality of notes taken. Even though you may have notes from students who previously had the class, these notes are usually poor substitutes for hearing the material first hand.

The weekly lab portion of the course consists of learning to identify minerals, rocks, and fossils based on observable physical properties and/ or characteristics. The only way to be successful at this is to spend time studying the samples provided and the scheduled lab labs are ample time to do so. **Plan to use the scheduled lab time.** If you have a course or job time conflict be aware that the lab hours outside of those scheduled are very limited and may not fit your schedule Open lab hours will be posted. **The lab will not be open weekends.**

LECTURE EXAMS:

Lecture exams will be a mixture of multiple choice, true/false, and short answer questions based upon classroom lecture, assigned readings, and text material. An answer sheet will be provided for the exams.

LAB EXAMS:

Lab exams will consist essentially of two parts; identification of the minerals, rocks, and fossils studied in lab, and a second part dealing with properties, uses, characteristics, etc. as discussed in lab.

MISSED/MAKE-UP EXAM POLICY:

You must call the ERS office at 762-3355 before 5:00 p.m. if you are unable to attend an exam. Missed exams must be made up within 1 week after the scheduled exam is given. Failure to do so will result in a grade of 0 for the missed exam.

Arrangements to take a make-up exam must be made with the instructor. If more than one exam is missed documentation will be required (note from doctor, emergency room, mechanic, undertaker, etc.). Make-up exams may not be the same as those given in class. Lecture exams may be essay or short definitions. Lab exams will cover the same lab material but may be structured somewhat different from the classroom exam.

LECTURE SCHEDULE – Spring 2009

<u>Date</u>	<u>Topic</u>
May 4 May 6 May 11 May 13 May 18 May 20	<u>Mineral Topics Covered Include:</u> minerals in society; introduction to mineral chemistry (atomic structure, periodic table, chemical bonds in minerals); mineral chemistry and classification; mineral properties related to chemical bonds; the silicates (rock-forming minerals/structure and composition); crystal growth and structure; environments of mineral formation.
May 25	No Class- Monday (Memorial Day)
May 27	Lecture Exam I (MINERALS)
June 1 June 3 June 8 June 10 June 15 June 17 June 22	<u>Rock, Fossil, and Geologic History Topics Covered Include:</u> texture of igneous rocks; magma compositions and mineral compositions of igneous rocks; igneous rock classification; igneous rock formation and earth structure. Weathering processes and sediment rock classification and interpretation; fossil definition; geologic time scale; Michigan geologic history; metamorphic rock forming agents; contact and regional metamorphic rocks; metamorphic rock classification.
June 24	Lecture Exam II (Rocks, Fossils and Geologic History)