This course is a core course in the E&ES major. It is not a gateway or general education for non-majors type course. I expect you to have an AP level of Chemistry and some E&ES type course in high school or college as prerequisites. This course is designed to introduce the E&ES major to the solid materials of the world we live in. An old miner’s saying is: “If it’s not grown, it’s mined”. We will learn about these materials that make up the solid world, as well as how we use them in our everyday lives. The lab is an integral part of the course and the two will be taught in a cohesive fashion, and not as two separate classes. We will use the lab for our ‘hands-on’ learning as well as for homework and problem sets. The Monday lecture will be tied intimately to that day’s lab as well. My expectation is that you will attend every class and lab unless you have extenuating circumstances.

**GRADING:** 2 in class exams and 1 final exam, 13 lab/hw assignments, and 2 lab quizzes. There will be a composite grade for the lab and class. Also class participation (not attendance (which is expected), but active participation.

- Exam 1: 20%
- Exam 2: 20%
- Final: 20%
- Labs: 30%
- Lab quizzes: 5%
- Class participation: 5%

**SYLLABUS E&ES 250 & 252 Earth Materials Spring 2014**

- **F Jan. 24** Intro-Origins of Earth Materials Ch1
- **M Jan. 27** Introduction to Rocks and Minerals Ch2
- **M Jan. 27 LAB 1** Introduction to Rocks and Minerals
- **W Jan. 29** Internal structure of Earth and plate tectonics
- **F Jan. 31** Fundamentals of crystal structures Ch4
- **M Feb. 3** Mineral properties Ch3
- **M Feb. 3 LAB 2** Hand sample mineral identification techniques
- **W Feb. 5** Intro to crystallography Ch5
- **R Feb. 6** E&ES Colloquium-medicine and earth materials- 12 NOON SCI405
- **F Feb. 7** Crystallography con’t
- **M Feb. 10** Minerals under the microscope Ch6
M Feb. 10 LAB 3 Intro to Optical microscopy
W Feb. 12 Intro to Igneous minerals
F Feb. 14 NO CLASS
M Feb. 17 Igneous rock-forming minerals
M Feb. 17 LAB 4 Igneous Rock-forming minerals
W Feb. 19 EXAM 1
F Feb. 21 Intro to Igneous rocks-why rocks melt; comp. of upper mantle 8.1,8.2
M Feb. 24 Igneous rock classification 9.1,9.3
M Feb. 24 LAB 5 Intro to igneous rocks
W Feb. 26 Melting processes in rocks 8.3,8.4
F Feb. 28 Igneous rocks and their settings 9.4
M Mar. 3 Physical properties of magmas 8.5,8.6
M Mar. 3 LAB 6 Magma properties
W Mar. 5 Melting of igneous rocks and plate tectonics
F Mar. 7 Magma chamber processes 8.7
SPRING BREAK Mar. 8-23
M Mar. 24 Igneous rocks under the microscope Philpotts
M Mar. 24 LAB 7 Igneous Rocks 2
W Mar. 26 Strange igneous rocks
F Mar. 28 Economics of igneous rocks
M Mar. 31 Intrusive and extrusive igneous rocks 9.2
M Mar. 31 LAB 8 Field Trip-Magmas in CT
W Apr. 2 EXAM 2
R Apr. 3 E&ES Colloquium-Magmatic processes on planets 12 NOON SCI 405
F Apr. 4 Intro to Sedimentary rock-forming processes 10.1,11
M Apr. 7 Sedimentary minerals Ch10
M Apr. 7 LAB 9 Sedimentary minerals
W Apr. 9 Formation of sediment 11.2-11.5
F Apr. 11 Transport and lithification of sediment 11.6-11.9
M Apr. 14 Sedimentary rocks ch12
M Apr. 14 LAB 10 Sedimentary rocks
W Apr. 16 Economics of sedimentary rocks 12.3-12.7
F Apr. 18 Intro to Metamorphic processes ch14
M Apr. 21 Metamorphic minerals ch13
M Apr. 21 LAB 11 Metamorphic rocks
W Apr. 23 Metamorphic processes ch14
F Apr. 25 Metamorphic processes
M Apr. 28 Metamorphic processes
M Apr. 28 LAB 12 Field Trip-Metamorphic Rocks and minerals
W Apr. 30 Economic Minerals ch15
F May 2 Guest Lecture-Earth and Art-Pigments under microscope
M May 5 Economic materials
M May 5 LAB 13 Field Trip-Building materials
W May 7 Economic materials