

GEOLOGY 222b: PETROLOGY
Schedule - Spring 2002

CLASSES: T Th 9:00–10:20
LAB: Th 1:10–4:00
E-MAIL: mbrandri@science.smith.edu

INSTRUCTOR: Mark Brandriss
OFFICE: Burton B15A
PHONE: x3585

OFFICE HOURS: Drop-in or by appointment.

TEXT: Blatt, H. & Tracy, R.J. (1996) Petrology: Igneous, Sedimentary, and Metamorphic (2nd ed.)

Other useful books are available in the petrology lab and, of course, in the library.

GRADES:

Most of your grade (70%) will be based on labs, take-home assignments and projects that will be done at home or in the laboratory. This will include a major final project at the end of the semester.

Part of your grade (25%) will be based on: a) quizzes that will be scheduled at various times during the semester; b) a mid-semester exam. The main purpose of the quizzes and exam is to motivate you to keep up with the readings and lectures and to put in the mental effort required to understand the concepts that we'll cover

The remainder of your grade (5%) is based on participation, including attendance on field trips.

LABS:

You are encouraged to work together on labs. You can expect to spend extra time on all of the labs, and you will have access to the lab room during all regular building hours.

DUE DATES:

Due dates for projects and assignments will be announced when the work is assigned. Late work will be accepted, but with the following penalties:

by the next class period: 15% penalty

up to 1 week late: 25% penalty

more than 1 week late: 35% penalty

If you have any questions about any aspect of the course or your performance, **PLEASE COME SEE ME.**

PROVISIONAL SCHEDULE (SUBJECT TO CHANGE)

Dates	Topic
Jan. 29-31	Introduction: The settings of igneous and metamorphic activity; igneous rock classification <i>Lab: Review of minerals in thin section; igneous textures</i>
Feb. 5-7	Igneous rocks: the relationship between chemical composition and mineral content <i>Lab: Granites</i>
Feb. 12-14	Crystallization and melting: binary phase diagrams <i>Lab: Granites (cont.)</i>
Feb. 19-21	Crystallization and melting: ternary phase diagrams <i>Lab: Basalts</i>
Feb. 26-28	Trace elements and isotopes in igneous processes <i>Lab: Basalts (cont.)</i>
March 5-7	More isotopes; layered mafic intrusions <i>Lab: Layered intrusions</i>
March 12-14	Igneous activity in various tectonic settings <i>Lab: Igneous rocks of Cape Ann</i>
March 16-24 Spring break	
March 26-28	Metamorphic petrology: concepts of metamorphism and metamorphic reactions <i>Lab: Last gasp of the igneous rocks</i>
April 2-4	Metamorphic reactions: metamorphic phase diagrams and application to metabasalts <i>Lab: Metabasalts</i>
Sunday, April 7: Field trip to Cape Ann, igneous rocks	
April 9-11	Metamorphic reactions: metapelites and geothermometry <i>Lab: Metapelites</i>
April 16-18	Metamorphic reactions: metacarbonate rocks and metamorphic fluids <i>Lab: Metacarbonates</i>
Friday April 19-Sunday, April 21: Field trip to Vermont, metamorphic rocks	
April 23-25	Metamorphic histories of regions: isotopes and pressure-temperature-time paths <i>Lab: Final lab project</i>
April 30-May 1	More metamorphic processes: metasomatism, ore formation, and everything else <i>Lab: OPEN</i>