

Introduction to Geochemistry

Earth Sciences 208

Section: D100

Term: 2011 Spring

Instructor: Dr. Dan Marshall

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Discussion Topics: General: REQUIREMENT DESIGNATION: Q

- Introductory concepts of geochemical systems:
Nucleosynthesis, Atomic structure, Periodic Table, Cosmic Evolution

- Global Chemical Differentiation

- Chemical Bonds

- Ionic Substitution in Crystals

- Thermodynamics

- Isotope Geology

- Stable Mineral Assemblages, Phase Diagrams

- Geothermobarometry

- Atmospheric/Oceanic Evolution and Chemistry

- Geochemical Cycles

- Crustal Fluids

- Simple and Multicomponent Mixing

- Geochemistry of the Major Rock Types: Sedimentary Rocks, Igneous Rocks, Metamorphic Rocks

Grading:

Midterm examination: 15%

Laboratory assignments 15%

Final lab examination 25%

Presentation/paper 15%

Introduction to Geochemistry

Final theory examination 30%

Required Texts: Principles and Applications of Geochemistry, 2nd edition, Gunter Faure, Prentice-Hall Inc., 1998, ISBN 978-0-02-336450-5

Recommended Texts: None.

Materials/Supplies: Calculator

Prerequisite/Corequisite: EASC 101, CHEM 121, CHEM 122, CHEM 126.

Notes:

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