

Igneous & Metamorphic Petrology Lecture Notes

Igneous & Metamorphic Petrology Lecture Notes By David T Allison Earth's Internal Layers 2 Criteria - Composition (ie mineralogy and geochemistry) - Seismic (mechanical behavior) Earth's Layering by Composition Depth Thick Layer 7-50km Crust Basalt (30) Diorite (27) 650km Upper mantle 700km

GY303 Igneous & Metamorphic Petrology

Outline of this Presentation • Graphical Representation of Metamorphic Reactions and Mineral Assemblages • Types of Metamorphic Reactions • Metamorphism of Mafic and Ultramafic Igneous Rocks • Metamorphism of Aluminous Clastic Sedimentary Rocks • ...

Principles of Igneous and Metamorphic Petrology Second ...

Principles of Igneous and Metamorphic Petrology Second Edition This textbook provides a basic understanding of the formative processes of igneous and metamorphic rocks through quantitative applications of simple physical and chemical principles The book encourages a deeper comprehension of the subject by explaining the

METAMORPHIC PETROLOGY METAMORPHISM: Process of ...

METAMORPHIC PETROLOGY METAMORPHISM: Process of mineralogical and structural (textural) changes of rocks in the ALL METAMORPHIC ROCKS WERE ONCE IGNEOUS OR SEDIMENTARY LOWER AND UPPER LIMITS OF METAMORPHISM: DEFINITIONS OF METAMORPHIC ROCKS Prefixes: Ortho- Igneous Protolith Para- Sedimentary Protolith Examples: orthogneiss, paragneiss

15. Petrology of Associated Igneous Rocks

232 15 Petrology of Associated Igneous Rocks Oman, Troodos, and Turner-Albright In the modern oceans, the mafic association is found in two specific settings: mid-ocean ridges and mature back-arc basins Hydrothermal activity spatially associated with ultramafic rocks, usually serpentinites, has been observed at several localities proximal

EESC 4701: Igneous and Metamorphic Petrology IGNEOUS ...

rock groups based on their texture; igneous, sedimentary or metamorphic rocks Recognition of the texture of a rock allows one to properly place the rock into its appropriate rock group Igneous rocks form from the cooling and crystallization of molten rock When minerals grow

Origin, Texture, and Classification of Metamorphic Rocks

Metamorphic rocks are igneous, sedimentary, or other metamorphic rocks that have been changed by heat, pressure, and chemical reactions with fluids and gases (see Igneous and Metamorphic Petrology; Pressure, Temperature, Fluid Pressure Conditions of Metamorphism) The textures and composition of the original rock are changed during metamorphism

EESC 4701: Igneous and Metamorphic Petrology ...

EESC 4701: Igneous and Metamorphic Petrology METAMORPHIC ROCKS LAB 8 HANDOUT Sources: Caltech, Cornell, UCSC, TAMIU Introduction Metamorphism is the process by which physical and chemical changes in a rock are brought about by changes in geologic pressures and temperatures, often in combination with chemically active fluids

Petrology on Mars

lower geothermal gradient in its interior The petrology of Mars is intriguingly different from Earth, but the tried-and-true methods of petrography and geochemistry are clearly translatable to another world Keywords: Mars, petrology, igneous, sedimentary, metamorphic, rock cycle, Invited Centennial article, Review article Introduction

ESS 439 Lecture 1 slides

Igneous and Metamorphic Petrology Prentice Hall 2 Lower mantle (55%) At 660 km spinel transforms to a denser structure (similar to the structure of perovskite) with Si in 6-fold coordination Associated with magnesio-wüstite Average composition: mantle is variable in comp: Upper mantle is depleted and the lower mantle is "primitive"

SYLLABUS: PETROLOGY OF IGNEOUS AND METAMORPHIC ...

Petrology: Igneous, Sedimentary, and Metamorphic rd(3 edition) by Harvey Blatt, Robert J Tracy, and Brent E Owens New York: W H Freeman and Company, 2006 The Blackboard site for this course provides essential resources for this course Check your Towson e-mail account daily for possible course-related announcements

Sigma Xi, The Scientific Research Society

it would include igneous, metamorphic and sedimentary aspects, which are basi? cally different fields of inquiry The classification of igneous rock has had a controversial and often hilarious history Nearly every petrology book seems to feature a different scheme, and those that have tried to honor the logic in

Geology 375: Petrology

AR Philpotts, 2003, Petrography of Igneous and Metamorphic Rocks, Waveland, ISBN 1577662954 A bound lab/field notebook Other readings/materials will be provided on Moodle (eg selected journal articles) or via hand-outs Also useful (copies may be available in S307/308): Petrology: Igneous, Sedimentary, and Metamorphic by

Geology 307 Igneous and Metamorphic Petrology Spring 2017

Petrology is the study of rocks: their origins and evolution In this course, you will thoroughly investigate the lifecycle of igneous and metamorphic rocks using many converging lines of evidence You will ask, and learn to answer, questions like: • Know basic igneous, metamorphic and sedimentary rock processes and types

Course Syllabus GEL 4050 Intro to Igneous & Metamorphic ...

4 Construct the mineralogy of igneous rocks using multi-phase solid solution diagrams 5 Correctly estimate igneous classifications from hand samples and optical microscopy 6 Differentiate between various minerals, both in igneous and metamorphic samples 7 Diagram the mineral diagenesis in appropriate metamorphic P/T systems 8