COURSE DETAIL

EARTH MATERIALS: FROM ATOMS TO PLANETS
Country United Kingdom - Scotland
Host Institution University of Edinburgh
Program(s) University of Edinburgh
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Earth & Space Sciences
UCEAP Course Number 129
UCEAP Course Suffix
UCEAP Official Title EARTH MATERIALS: FROM ATOMS TO PLANETS
UCEAP Transcript Title EARTH MATERIALS
UCEAP Quarter Units 8.00
UCEAP Semester Units 5.30

Course Description

This course explores the fundamental nature of the main groups of materials which constitute planets such as the Earth, and develops an understanding of how atomic structure of materials ultimately defines planetary processes. In Part A: From atoms to minerals, students briefly review atomic theory, consider how atoms are arranged in crystalline materials and how this, ultimately, controls material properties. Interaction of crystalline materials with light, X-rays, and electrons are used to introduce the theoretical and practical basis behind analytical techniques used to study Earth and planetary materials. In Part B: Planetary building blocks, students review the main groups of solid materials which constitute planets such as the Earth, considering how structure, chemistry, physical properties, and occurrence are interrelated. In Part C: Modelling chemical processes, students consider how the stability and occurrence of materials can be predicted and determined numerically, and consider factors governing the rates at which natural processes occur.

Language(s) of Instruction
English

Host Institution Course Number
EASC08031

Host Institution Course Title
EARTH MATERIALS: FROM ATOMS TO PLANETS

Host Institution Course Details
http://www.drps.ed.ac.uk/25-26/dpt/cxeasc08031.htm

Host Institution Campus

Host Institution Faculty
School of Geosciences

Host Institution Degree

Host Institution Department

Course Last Reviewed
2025-2026

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