LONDON'S GLOBAL UNIVERSITY

Chemical Engineering

Minerals Usage, Extraction and Processing (CENG0035)

Description

Aims:

The aim of this module is to equip the students with a broad understanding of the unit operations (reactors, separations, pumping, cooling/heating, etc.) that are part of a plant used to process minerals, including those plants that are used to produce energy from minerals (e.g., a nuclear plant used to generate electricity). The students will be exposed to the concepts of dwindling natural resources (which will be developed further in other courses within this programme), and they will have ample discussions regarding safety. The students will also be exposed to the need of interacting within a social context.

Learning Outcomes:

Upon successful completion of this module the students will be able to:

- select the minerals used in a few key technologies (nuclear power, aluminum synthesis, coal, and a few others);
- appraise the unit operations critical for minerals processing;
- formulate important processes such as aluminum manufacturing;
- manage sample industrial processes;
- defend the importance of safety

Synopsis:

This module will provide an overview on the impact of minerals on our society, their extraction processes, and some of the unit operations typically adopted for the refining and commercialization of the raw materials. The course includes elements of historical and current usage, international dependencies of natural resources extractions and utilization, economics analysis, the typologies of mining operations, the description of a few unit operations essential for the mining industry, the economic analysis of chemical processes involved, in particular with the

Key information

Year	2020/21
Credit value	15 (150 study hours)
Delivery	PGT L7, Campus-based
Reading List	View on UCL website
Tutor	Dr Alex Norori-McCormac
Term	Term 1
Timetable	View on UCL website

Assessment

- Written examination (departmentally managed): 50.0%
- Coursework: 30.0%
- Coursework: 20.0%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk

production of aluminum, and the relation between minerals and energy, with emphasis on coal and nuclear.

The module will consider:

- Minerals and the energy sector: nuclear energy
- The nuclear plant for energy production
- Management of a nuclear energy plant construction and operation
- An introduction to mining
- Unit operations in the mining industry (flotation, smelting, etc.)
- Processes of relevance to the mining industry
- Minerals and the energy sector: coal and oil
- Aluminum production: from mining to chemical processes
- Mining operations management
- Case studies and possibly field trips

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