Philadelphia University

Faculty of Engineering - Department of Renewable Energy Engineering

First Semester 2024/2025

Course Information

Title:	Oil shale (615442)
Prerequisite:	Physics (211102)
Credit Hours:	2 credit hours (16 weeks per semester, approximately 32 contact hours)
Textbook:	Oil shale developments by Ike S. Bussell
References:	https://emrc.gov.jo/Default.aspx
Catalog Description:	This course will cover an introduction to the oil shale. The geology aspects of oil shale will be explained describing its organic and chemical composition. The information for history, worldwide potential, and current industry statues will also be coved. The course will emphasize the topic of different oil shale extraction techniques and utilization processes. The environmental consequences of utilizing oil shale either by direct use or after processing will be discussed.
Website:	https://www.philadelphia.edu.jo/academics/zalmuala/
Instructor:	Dr. Zaid Al Muala **Email**: zalmuala@philadelphia.edu.jo **Office**: Engineering building, room 6714, ext:2450. **Office hours**: Sat.: 09:10 - 11:10 Sun.: 10:10 - 11:10 & 12:40 - 13:40 Mon.: 10:10 - 11:10 & 14:00 - 15:00 Tues.: 10:10 - 11:10 & 12:40 - 13:40

Course Topics

Week	Topic
1	Introduction to oil shale
2	Geology of the oil shale
3	Resource; worldwide potential
4	History of utilizing oil shale
5	Industry and the current status
6,7,8	Extraction and processing
9,10	Applications and products
11,12	Environmental consideration
13,14	Economics
15	Oil shale in Jordan
16	Review and final exam

Course Learning Outcomes and Relation to ABET Student Outcomes: Upon successful completion of this course, a student should:

1.	Recognize the importance of alternative technologies and fuels	[K1,K2]
2.	Describe the geology of oil shale	[K1,K2]
3.	Describe the resource potential worldwide	[K2,K4]
4.	Understand the different techniques for oil shale extraction and processing	[K3,K4]
5.	Understand the economics of the oil shale industry	[K2,K4]
6.	Be aware of the environmental concerns related to oil shale	[K2,S2]
7.	Understand all aspects related to the oil shale in Jordan	[K2,S2]

Assessment Instruments:

Evaluation of students' performance (final grade) will be based on the following categories:

Exams:	Two written exams will be given. Each will cover about 3-weeks of lectures
Quizzes:	10-minute quizzes will be given to the students during the semester. These quizzes will cover material discussed during the previous lecture(s).
Homework:	Problem sets will be given to students. Homework should be solved individually and submitted before the due date.
	Copying homework is forbidden, any student caught copying the homework or any part of the homework will receive a zero mark for that homework
Participation:	Questions will be asked during lectures and the student will be assessedbased on his/her response
Final Exam:	The final exam will cover all the class material.

Grading policy:

First Exam	20%
Second Exam	20%
Homework	5%
Quizzes	15%
Final Exam	40%
Total:	100%

Attendance policy:

Absence from classes and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse, acceptable to and approved by the Dean of the relevant college/faculty, shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

October, 2024