



Course Syllabus: Special Topics in ERPE - ERPE 290

Division	Physical Science and Engineering Division
Course Number	ERPE 290
Course Title	Special Topics in ERPE
Academic Semester	Fall
Academic Year	2019/2020
Semester Start Date	08/25/2019
Semester End Date	12/10/2019
Class Schedule (Days & Time)	10:30 AM - 12:00 PM Sun Tue

Instructor(s)				
Name	Email	Phone	Office Location	Office Hours
Abdulkader Musa Alafifi	ABDULKADER.ALAFIFI@KAUST.EDU.SA	+966128087280	L 3, R 3219, 5, Al-Kindi (bldg. 5)	Sundays-Wednesdays, 1-2 pm

Teaching Assistant(s)	
Name	Email
Jakub Ferorik	jakub.fedorik@kaust.edu.sa

Course Information	
Comprehensive Course Description	<p>This course is titled geoscience fundamentals. It is an overview of plate tectonics, igneous, metamorphic and sedimentary rocks, rock deformation, geochronology, planetary geology, geobiology, volcanoes, earthquakes, earth's interior, groundwater, geomorphology, natural resources and human impacts on the earth's environment.</p> <p>This course is suitable for students who lack a basic understanding of geology and as a prerequisite for advanced earth science courses. The course consists of lectures and multimedia exercises, a few laboratory exercises, and a weekend field trip to outcrops nearby.</p>
Course Description from Program Guide	Specialized MS level courses that cover subjects of particular interest, augment 200- or 300-level courses with in-depth coverage of the foundations, or provide computational applications and extended projects. Special Topics may also introduce new scientific fields and research areas, or broaden and challenge the students experience and expertise in other ways.
Goals and Objectives	<p>The goal is for students to gain a basic understanding of geological concepts, processes, and the interactions between earth, atmosphere, hydrosphere, and biosphere</p> <p>Skills: Basic identification of rocks and minerals. Interpretation of geologic maps and cross sections.</p>
Required Knowledge	Sophomore level in chemistry, physics and mathematics.
Reference Texts	Understanding Earth by John Grotzinger and Tom Jordan
Method of evaluation	<p>40.00% - Final exam 15.00% - Quiz(zes) 30.00% - Midterm exam 15.00% - Active participation</p>

Nature of the assignments	Assigned reading from textbook Exercises in rock and mineral identification and interpretation of geologic maps and cross sections.
Course Policies	Attendance required for all class and laboratory sessions Participation in field trip Discuss with instructor any problems/exceptions
Additional Information	

Tentative Course Schedule

(Time, topic/emphasis & resources)

Week	Lectures	Topic
1	Sun 08/25/2019	Introduction to the Earth System Chapter 1 Lecture by Jakub Fedoric
1	Tue 08/27/2019	Plate tectonics Chapter 2
2	Sun 09/01/2019	Minerals and rocks Chapter 3
2	Tue 09/03/2019	Igneous rocks Chapter 4
3	Sun 09/08/2019	Sedimentation Chapter 5
3	Tue 09/10/2019	Metamorphism Chapter 6
4	Sun 09/15/2019	Deformation Chapter 7
4	Tue 09/17/2019	Clocks in rocks chapter 8
5	Sun 09/22/2019	University holiday
5	Tue 09/24/2019	Laboratory session rocks and minerals
6	Sun 09/29/2019	Terrestrial planets Chapter 9
6	Tue 10/01/2019	History of the continents Chapter 10
7	Sun 10/06/2019	Geobiology Chapter 11
7	Tue 10/08/2019	Volcanoes Chapter 12
8	Sun 10/13/2019	Earthquakes Chapter 13
8	Tue 10/15/2019	Earth's interior Chapter 14
9	Sun 10/20/2019	Review session
9	Tue 10/22/2019	Mid Term Exam
10	Sun 10/27/2019	Mid-semester break
10	Tue 10/29/2019	Mid-semester break
11	Sun 11/03/2019	Weathering , erosion and mass wasting Chapter 16
11	Tue 11/05/2019	Hydrologic cycle and groundwater Chapter 17
12	Sun 11/10/2019	Stream transport Chapter 18
12	Tue 11/12/2019	Winds and deserts Chapter 19
13	Sun 11/17/2019	Coastlines and ocean basins Chapter 20
13	Tue 11/19/2019	Glaciers and glacial deposits Chapter 21
14	Sun 11/24/2019	Landscape development chapter 22
14	Tue 11/26/2019	Human impact on Earth's environment chapter 23
15	Sun 12/01/2019	Review session
15	Tue 12/03/2019	Final exam
16	Sun 12/08/2019	Exams
16	Tue 12/10/2019	Exams

Note

The instructor reserves the right to make changes to this syllabus as necessary.