**Ministry Of Higher Education and Scientific Research**

**AL-Mustansiriayah University / College of Engineering / Department of Environmental Engineering**

**الخطة الدراسية للمساق))**

**Course Plan**

**Course No.: EN11101**   **Course Name: Geology**

**Academic Year: 2019-2020**  **Time Division:** 3hr. Theoretical & 1hr. Practical

**Course Description**

( 3 credit hours)

 Engineering geology is the application of geological sciences for engineering problems. Special emphasis will be given to environmental engineering. The course will cover the Earth as a dynamic system. Each system or sphere such as the geosphere will be covered in enough details to help the engineering student understand the geologic processes. Other spheres or systems such as the hydrosphere and the atmosphere will be covered as well. Geological hazardous such as earthquakes, volcanoes, mass movement, and floods will be given special attention. Topics such as water resources, mineral resources, and energy and the environment are of unique and of high importance to environmental engineers.

 ***Course Intended Outcomes:***

 ***At the end of the course, students are expected to learn:***

* Understand the Earth system and its dynamics
* Understand the Solid Earth, minerals, rocks, the rock cycle, tectonics, earthquakes, volcanoes, and hazardous
* Understand soils, erosion, and desertification
* Understand hydrology, hydrologic cycle, hydrologic hazard, fresh water resources (surface and subsurface)
* Understand minerals as resources, effect of energy on the environment, and how geology related to solid waste management

***Course Outline:***

|  |  |
| --- | --- |
| **Week** | **Description depends on the Timing table (Theoretical & Practical)** |
|  | Introduction to engineering geology |
|  | The Solid Earth; Minerals |
|  | The Solid Earth; Rocks and Rock Mechanics, and the Rock Cycle |
|  | **First midterm exam** (one hour),  |
|  | Plate Tectonics (one hour) |
|  | Earthquakes and its Environmental Hazards |
|  | Magma, Volcanoes, and Volcanic Hazards |
|  | Weathering, Soils, and Erosion |
|  | Water Resources |
|  | **Second midterm exam** (one hour),  |
|  | Hydrologic Hazards (Floods), Flood Assignment Handout (one hour) |
|  | Energy and the Environment |
|  | Waste Management and Geology, Flood Assignment Due |
|  | Final Exam Review |
|  | Waste Management and Geology, Flood Assignment Due |
|  | Final exam duration |
|  | Final exam duration |

***Textbooks:***

“GEOLOGY and the ENVIRONMENT” 7e by Pipkin, Trent, Hazlett, and Bierman, 2014

***Suggested references:***

***Marking:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Activity** | **1st Exam** | **2nd Exam** | **Lab** | **Total**  | **Final Exam** |
| **10** | **10** | **10** | **20** | **50** | **50** |

***Assignments and/or Projects:***

***Instructor information:***

 Lecture Room: Time:

Instructor's Name:

 Office No.:

E-Mail:

***NOTES:***

***Office Hours: Other office hours are available by appointment.***

***Not change the content of this syllabus during the current semester.***

**Lecturer Signature Chairman Signature**