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| **فصل أول 2013** |
| [طباعة](javascript:print();) |
| |  |  | | --- | --- | | **Department of Civil Engineering** | | | **Soil Mechanics (61331)** | | | **Total Credits** | **3** | | **major compulsory** | | | **Prerequisites** | P1 : Mechanics of Materials (61207) OR Mechanics of Materials (61212)  P2 : Engineering Geology (61230) OR Eng'g Geology (61203) | | **Course Contents** | | | Students will learn the fundamental principles of soil behavior including physical and mechanical properties, as well as the classification, identification, and soil-testing. Students will also be introduced to the principles of permeability and seepage as well as the theory and applications of consolidation. The course ends with a look at shear strength applications on soil and soil bearing for building foundations and other purposes. | | | |  |  |  |  | | --- | --- | --- | --- | | **Intended Learning Outcomes (ILO's)** | | **Student Outcomes  (SO's)** | **Contribution** | | 1 | Have good understanding of the origin of the soil and geological cycle, phase diagram and consistency of soil – Atterberg limits and soil classification. | A | 30 % | | 2 | Able to describe and quantify soil compaction, | A | 15 % | | 3 | Able to describe and quantify soil permeability and to perform seepage analysis including flow net. | A | 15 % | | 4 | Able to estimate soil stresses and settlement under different types of loads. | E | 25 % | | 5 | Understanding and evaluate soil shear strength. | A | 15 % | | | | **Textbook and/ or Refrences** | | | 1. Principles of Geotechnical Engineering, By: Braja M. Das, fifth Edition, 2002, Publisher: Thomson  2. Other references will be furnished during the semester. | | | |  |  | | --- | --- | | **Assessment Criteria** | **Percent (%)** | | First Exam | 20 % | | Second Exam | 20 % | | Homeworks | 10 % | | Final Exam | 50 % | | | | **Course Plan** | | | |  |  | | --- | --- | | **Week** | **Topic** | | 1 | Introduction to Geotechnical Engineering | | 2 | Origin of Soil and Grain Size | | 3 | Origin of Soil and Grain Size | | 4 | Weight – Volume Relationships, Plasticity, and Structure of Soil | | 5 | Engineering Classification of Soil | | 6 | MIDTERM EXAM 1 | | 7 | Soil Compaction | | 8 | Permeability and Seepage | | 9 | Permeability and Seepage | | 10 | Stresses in a Soil Mass | | 11 | Stresses in a Soil Mass | | 12 | MIDTERM EXAM 2 | | 13 | Compressibility of Soil | | 14 | Compressibility of Soil | | 15 | Shear Strength of Soil | | 16 | Final Exam | | | |