



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

|  |   |  |            |   |   |                                 |   |            |   |
|--|---|--|------------|---|---|---------------------------------|---|------------|---|
| Course Title                                     |   | Soil Mechanics   |            |   |   |                                 |   |            |   |
| Course Code                                      |   | BSM214   |            | Course Level  |   | First Cycle (Bachelor's Degree) |   |            |   |
| ECTS Credit                                      | 2 | Workload   | 50 (Hours) | Theory  | 2 | Practice                        | 0 | Laboratory | 0 |
| Objectives of the Course                         |   | Teaching the basic information about ground structure on agricultural engineering applications, soil reaction and stability.<br>The presence of load on the floor of the building, to calculate the shear strength of the ground.  |            |   |   |                                 |   |            |   |
| Course Content                                   |   | Definition and content of soil mechanic, physical characteristics of soil, soil classification according to different classification systems, atterberg limits, water flows on soil, soil consolidation and compaction, slip resistance, slope stability, retaining walls, foundations and soil improvement. |            |   |   |                                 |   |            |   |
| Work Placement                                   |   | N/A  |            |   |   |                                 |   |            |   |
| Planned Learning Activities and Teaching Methods |   |  |            | Explanation (Presentation), Demonstration, Discussion, Project Based Study, Individual Study, Problem Solving |   |                                 |   |            |   |
| Name of Lecturer(s)                              |   | Assoc. Prof. Ersel YILMAZ  |            |   |   |                                 |   |            |   |

### Assessment Methods and Criteria

| Method              | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1        | 40             |
| Final Examination   | 1        | 70             |

### Recommended or Required Reading

|   |   |
|---|---|
| 1 | FİLİZ, M., 1998. Zemin Mekaniği. E.Ü. Ziraat Fakültesi Yayınları, Ders Notları, 6-4. E.Ü.Z.F. Ofset Basımevi. Bornova-İzmir. Ofset Baskı Ders Notları |
| 2 | Berry, P.L and Reid, D., 1987. An Introduction to Soil Mechanics, McGraw-Hill Book Company, London  |
| 3 | Demirbaş, S., 1988. Şevlerin Dengesi. Köy Hizmetleri Genel Müdürlüğü Yayınları, Ankara  |
| 4 | Okman, C., 1998. Zemin Mekaniği. A.Ü. Ziraat Fakültesi Yayın No.1502, Ankara  |
| 5 | Tunç, A., 2001. Yol Malzemeleri ve Uygulamaları. Atlas Yayın Ltd. Şti. Yayın No:1, İstanbul   |
| 6 | Uzuner, B.A., 1998. Çözümlü Problemlerle Temel Zemin Mekaniği. Teknik Yayınevi, Mühendislik Mimarlık Yayınları, Ankara                                |

| Week | Weekly Detailed Course Contents |  |
|------|---------------------------------|--|
| 1    | Theoretical                     | Definition and content of soil mechanics                   |
| 2    | Theoretical                     | Physical characteristics of soil.                          |
| 3    | Theoretical                     | Identification and assessment of the distribution of grain |
| 4    | Theoretical                     | Soil classification systems                                |
| 5    | Theoretical                     | Atterberg limits   |
| 6    | Theoretical                     | Water flows  |
| 7    | Theoretical                     | Soil compaction  |
| 8    | Theoretical                     | Soil consolidation   |
| 9    | Theoretical                     | Soil consolidation   |
| 10   | Theoretical                     | Slip resistance of soil.                                   |
| 11   | Theoretical                     | Mohr-Coulomb failure theory                                |
| 12   | Theoretical                     | Ground pressure and retaining walls                        |
| 13   | Theoretical                     | Safety tension and settlement of foundations               |
| 14   | Theoretical                     | Soil improvement   |
| 15   | Theoretical                     | Soil improvement   |
| 16   | Final Exam                      | Final exam   |

### Workload Calculation

| Activity            | Quantity | Preparation | Duration | Total Workload |
|---------------------|----------|-------------|----------|----------------|
| Lecture - Theory    | 14       | 2           | 1        | 42             |
| Midterm Examination | 1        | 2           | 1        | 3              |



|  |   |   |   |    |
|--|---|---|---|----|
| Final Examination                            | 1 | 4 | 1 | 5  |
| Total Workload (Hours)                       |   |   |   | 50 |
| [Total Workload (Hours) / 25*] = <b>ECTS</b> |   |   |   | 2  |
| *25 hour workload is accepted as 1 ECTS      |   |   |   |    |

### Learning Outcomes

|   |  |
|---|--|
| 1 | 1. To use the basic principles of soil mechanic to solve the soil problems.  |
| 2 | 2. To research data required and study with different disciplines for applications about soil mechanic.                    |
| 3 | 3. To make etude, plan and project on subjects about soil mechanic such as slope stability, retaining wall and foundation. |
| 4 | Mohr-Coulomb failure theory  |
| 5 | Safety tension and settlement of foundations   |

