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| **SYLLABUS**  **CE 366 FOUNDATION ENGINEERING I 2010-2011 FALL SEMESTER**  **PEOPLE**:   |  |  |  | | --- | --- | --- | | SECTION | INSTRUCTORS | TEACHING ASSISTANTS | | 1 | Prof. Dr. Orhan Erol | Yeşim Ünsever | | 2 | Prof. Dr. Kemal Önder Çetin | Sevinç Ünsal | | 3 | Prof. Dr. Sadık Bakır | Selman Sağlam | | 4 | Asst. Prof. Dr. Nejan Huvaj Sarıhan | Abdullah Sandıkkaya | | 5 | Prof. Dr. Erdal Çokça | Volkan Kalpakçı |   **LECTURE HOURS**:   |  |  |  | | --- | --- | --- | | SECTION |  |  | | 1 | Mondays, 13:40-15:30 (TH4) | Thursdays, 13:40-15:30 (TH7) | | 2 | Mondays, 13:40-15:30 (TH5) | Thursdays, 13:40-15:30 (CS1) | | 3 | Mondays, 13:40-15:30 (TH8) | Fridays, 15:40-17:30 (TH8) | | 4 | Wednesdays, 14:40-16:30 (TH5) | Fridays, 10:40-12:30 (TH1) | | 5 | Wednesdays, 14:40-16:30 (TL) | Fridays, 10:40-12:30 (TH2) |     **COURSE CONTENT:**  **1. INTRODUCTION**  **2. STRESS DISTRIBUTION IN SOILS**  **3. SITE INVESTIGATION** Planning of borings, boring methods, sampling, in-situ (field) tests  **4. SETTLEMENT OF STRUCTURES** Initial (elastic) settlement, consolidation settlement, allowable settlement Settlements of footings on granular and cohesive soils  **5. BEARING CAPACITY OF SOILS** Bearing capacity of cohesionless and cohesive soils, allowable bearing capacity of soils, use of field tests  **6. DESIGN OF SHALLOW FOUNDATIONS** Types of shallow foundations, rigid design of shallow foundations on cohesionless and cohesive soils, use of in-situ tests in foundation design  **7. RETAINING STRUCTURES, EXCAVATIONS**  Review of earth pressure theory, earth retaining systems, cantilever and garavity retaining walls, anchored walls, reinforced earth walls, design of retaining structures  **8. PILE FOUNDATIONS** Classification of piles, types of piles, bearing capacity of a single pile in cohesionless and cohesive soils, design of pile groups, settlement of pile groups  **9. GROUND IMPROVEMENT / DEWATERING**  **10. GEOTECHNICAL EARTHQUAKE ENGINEERING**    **PRE-REQUISITE:**CE 363 Soil Mechanics   **GRADING**27% Midterm 1, 27% Midterm 2, 38% Final, 5% Homeworks, 3% Attendance.    **TENTATIVE COURSE PROGRAM**     |  |  |  |  | | --- | --- | --- | --- | | ***Week*** | ***Date*** | ***Subject*** | ***Subject*** | | 1 | 17 Feb - 18 Feb |  | Introduction | | 2 | 21Feb - 25 Feb | Stress Distribution | Stress Distribution | | 3 | 28 Feb - 4 March | Site Investigation | Site Investigation | | 4 | 7 March - 11 March | Site Investigation | Tutorial 1 | | 5 | 14 March - 18March | Settlement | Settlement | | 6 | 21 March - 25 March | Tutorial 2 | Bearing Capacity | | 7 | 18 March - 1 April | Bearing Capacity | Bearing Capacity | | 8 | 4 April - 8 April | Tutorial 3a | Tutorial 3b | | 9 | 11 April - 15 April | **MT 1 @ 17:40** | Shallow Foundations | | 10 | 18 April - 22 April | Shallow Foundations | Tutorial 4 | | 11 | 25 April - 29 April | Retaining Structures | Retaining Structures | | 12 | 2 May - 6 May | Retaining Structures | Tutorial 5a | | 13 | 9 May - 13 May | **MT II @ 17:40** | Pile Foundations | | 14 | 16 May - 20 May | Pile Foundations | Pile Foundations | | 15 | 23 May - 27 May | Tutorial 5b | Tutorial 6 |       **REFERENCE BOOKS :**  **1.** Lecture Notes **2.** Soil Mechanics, R.F. Craig, Van Nostrand Reinhold (UK), 5th Edition, ELBS Low Priced Edt., 1992 **3.** Foundatiıon Design and Construction, M.J. Tomlinson, 6th Ed. A.W. Longman, 1995 **4.** Foundation Engineering, I. Ordemir, METU Publications, 1984 **5.** Pile Foundations, I. Ordemir, METU Publications, 1984 **6.** Kazıklı Temeller, A. Birand, Teknik Yayınevi, 2001  **RECOMMENDED READINGS** The bold numbers in front of the reading pages show the reference book number. For all the subjects below, we recommend you to read your lecture notes first.  ***Stress Distribution***  **2/**163-174 pp **3/**62-63 pp 1.  ***Site Investigation***  **2/** 158-160pp, 314-316pp, 326-327pp, 393-415pp, **3/** 1-27 pp  **4/** 1-6 pp, 13-16 pp, 23-31 pp  ***Settlement*** **2/** 174-179 pp, 252-261 pp, 321-327 pp, 329-332 pp, CE 363 Review 2/244-252 pp, 2/262-284 pp **3/** 41-42 pp, 55-78 pp  ***Bearing Capacity*** **2/** 298-320 pp **3/** 41-49 pp  ***Shallow Foundations***  **3/** 36-37 pp, 130-135 pp, 142-147 pp **4/** 57-58 pp, 63-64 pp, 125-132 pp, 140-150 pp, 155-159 pp, 162-166 pp, 178-187 pp  ***Retaining Structures***  **2/** 206-217 pp, 219-231 pp, 234-237 pp, 310-311 pp **3**/189-197 pp, 402-405 pp, 464-475 pp **4/** 100-123 pp  ***Pile Foundations***  **2/** 332-353 pp(except 346,347) **3/** 265-282 pp, 290-295 pp **5/** 21-53 pp, 79-85 pp, 91-94 pp **6/** 1-84 pp, 256-263 pp |
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