**Northeastern University**

**Department of Civil and Environmental Engineering**

Instructor’s Assessment

CIVE 4542 Foundation Engineering

**Semester / Year:** Spring / 2016 **Instructor: Prof. Yegian Date:** 05/27/2016

Expectations regarding this course assessment:

1. Before the start of the course, review the most recent instructor assessment for recommendations on how to improve the course.
2. Grade summaries will be based on exams, the public meeting assignment, and the project, which may have grades for different aspects.
3. *Questions to be asked on the in-class evaluation:*  Listed in item 3 below.
4. This assessment form is based on the set of topics and learning outcomes listed in the course syllabus. Do not change this part of the syllabus without action from the discipline group. If there is a change, notify the Undergraduate Studies Committee so that this form can be modified.
5. Complete the form and save it as a Word document with filename like this: IAssess\_4542 \_2016\_Spring

**1. What course improvements did you make? How successful were they? Relate them to recommendations made in previous course assessments.** *Expand the table as necessary.*

|  |  |
| --- | --- |
| 1. | Solved more problems on the board, per student requests |
| 2. | More of the lectures were explained on the board, per student requests |
| 3. | Prepared and provided students class notes. (less reliance on the book) |

**2. Your response to student comments and/or TRACE evaluation:** *Respond to serious criticisms and suggestions. Expand table as necessary.*

|  |  |  |
| --- | --- | --- |
|  | **Student Comment** | **Your Comment(s)** |
| 1. | Include retaining walls | Done |
| 2. | Write more on the board | Done |
| 3. | Provide more details and expectations re Projects | Done |

**3. Student questionnaire summary**

*Does not apply*

**4. Grade Summary (Project-based course. Grades were based on 6 Homeworks, 1 large project with 3 parts, 1 presentation, and a final examination. The grade sheet is attached)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Public Meeting assignment** | **Average score** (0 to 100) | **% students with adequate achievement** | **Comment on any item with poor achievement** |
| PM |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exam 1 question #** | **Topic** | **Average score** (0 to 100) | **% students with adequate achievement** | **Comment on any item with poor achievement** |
| M.1 |  |  |  |  |
| M.2 |  |  |  |  |
| M.3 |  |  |  |  |
| M.4 |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exam 2 question #** | **Topic** | **Average score** (0 to 100) | **% students with adequate achievement** | **Comment on any item with poor achievement** |
| F.1 |  |  |  |  |
| F.2 |  |  |  |  |
| F.3 |  |  |  |  |
| F.4 |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Component** | **Average score** (0 to 100) | **% students with adequate achievement** | **Comment on any item with poor achievement** |
| P.1 |  |  |  |
| P.2 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**5. Here are the topics listed on your syllabus.** Based on your grade summaries, report the fraction of students that showed ability to apply knowledge and to identify, formulate, and solve problems. In the column “Basis for assessment” report the particular item(s) in the grade summary that support this assessment; or if the topic is not covered in the grade summary, state the basis of your assessment.

**(Final Exam grade sheet and analysis of the grades is attached)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic**  | **Percentage of students showing ability to apply knowledge and solve problems** | **Basis for assessment** | **Comments** |
| 1. Introduction to foundation engineering / historical perspective
 |  |  |  |
| 1. Soil mechanics review
 | 70%-80% | Questions in the Final Exam |  |
| 1. Shallow foundation bearing capacity, including bearing capacity theory, the concept of ultimate bearing capacity, the influence of shape, inclination, eccentricity and soil/groundwater conditions, drainage conditions, and foundation dimensioning.
 | 70$ | Questions in the Final Exam and Projects |  |
| 1. Shallow foundation settlement, including settlement in sand based on elastic theory and field tests, and settlements in clay based on stress distributions used in conjunction with compression curves.
 | 80% | Questions in the Final Exam and Projects |  |
| 1. Mat foundation analysis design
 | 85% | Questions in the Final Exam and Projects |  |
| 1. Deep foundations: types, conditions for their use as a design option, installation methods. Bearing capacity in end bearing and due to frictional resistance. Settlement of piles, lateral loading of piles and pile groups
 | 75% | Questions in the Final Exam and Projects |  |
| 1. Lateral earth pressure theory, including the assumptions and limitations of Rankine and Coulomb analyses, the effect of different soil types and groundwater conditions, and drainage conditions.
 | 75% | Questions in the Final Exam |  |
| 1. Use of lateral earth pressure theory to design retaining walls and evaluate wall stability.
 | 75% | Questions in the Final Exam |  |

**6. Assessment of Program-Level Outcomes not Covered in Topic Assessment**

What percentage of students achieved the following learning outcomes?

|  |  |  |  |
| --- | --- | --- | --- |
| **Learning Outcome** | **Percentage achieving** | **Basis for this rating**  | **Comments?** |
| an ability to design a system, component, or process to meet desired needs within within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability | 90% | Project Report grades |  |
| an ability to ability to communicate effectively in writing | 90% | Project Report and Presentation |  |
| a knowledge of historical and contemporary issues |  |  | Included in the class lectures but not assessed |
| an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice | 90% | Project Report and Final Exam |  |
| an ability to formulate and compare alternatives using appropriate methodologies | 90% | Project Reports |  |

**7. Recommendations for improving this course.** Expand the table as needed.

|  |  |
| --- | --- |
| 1. | Rely more on class notes and have the book as a reference text |
| 2. | Do not schedule the course in the Spring and compete with the capstone for student time and computer needs |
| 3. |  |



