Course Information

<table>
<thead>
<tr>
<th>Required or Elective</th>
<th>Date Prepared</th>
<th>Semester</th>
<th>Class Hours and Classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>January 2016</td>
<td>Spring 2016</td>
<td>Tu. 09:00 – 11:00 Room A116</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wd. 14:00 – 15:00 Room A116</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Credit Hours/ECTS credits</th>
<th>Pre-requisite/Co-requisite</th>
<th>Level of Course</th>
<th>Language of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3+0+0) 3 / 6</td>
<td>CE214</td>
<td>Junior</td>
<td>☑️ English</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>☐️ Turkish</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructors and their office hours</th>
<th>Teaching Assistant(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Dr. Güney Özcebe (All available times. Alternatively you may also take appointment from Selen Dikmenli (312)585-0100)</td>
<td>To be announced later.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Textbook</th>
<th>Recomended Readings</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Course Web Pages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Please register to Moodle page <a href="http://moodle.tedu.edu.tr">http://moodle.tedu.edu.tr</a> and regularly follow this link to have access to course materials.</td>
<td></td>
</tr>
</tbody>
</table>

Course Description


Course Objective

This course aims to establish the basic principles of reinforced concrete structural member and system behavior and to introduce the basic principles of the analytical methods and design procedures.

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. interpret indications of different reinforced concrete structural behavior types to a certain extent (B1, B3)
1.1 interpret the material behavior of concrete and steel under uniaxial and multiaxial states of stress (B3)
1.2 state how the time dependent deformations affect the behavior of R/C members and the structural safety (B1)
2. perform analysis and design computations of structural members subjected to
   2.1 uniaxial stress: uniaxial loading, pure bending, combined bending & axial Load (B5)
   2.2 biaxial stress: shear (B5)
   2.3 and state how the concept of structural safety is employed in the design of R/C members by following different design philosophies (B5)
3. check the validity of computer outcomes using some simple manual approximate methods of computation (B4)

Course Assignments

A. Homework Assignments, Quizzes and Reading Assignments (15%):
   - A number of problems will be assigned for each subject studied. All assignments will be posted and collected via Moodle Page of the course. You will receive an assignment notification e-mail once the assignment is posted. It is your own responsibility to follow all assignment notification e-mails. You are expected to solve all assigned questions and submit them via the same platform. Late homework submissions will be penalized 25 percent for each day.
   - Depending on the performance of the class pop-up quizzes can be given.
   - Besides, reading assignment from the text book will be issued whenever appropriate. The students are responsible from these materials in the exams regardless of the coverage of this material in the lectures.

B. Midterm Exams (55%): Two term tests will be given on the announced dates. Each term test will cover all the material studied from the beginning to that date.

C. Final (30%): There will be a cumulative final.

Course Assessments & Learning Outcomes Matrix

<table>
<thead>
<tr>
<th>Assessment Methods</th>
<th>Course Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>#1 - #3</td>
</tr>
<tr>
<td>Midterm Exam I</td>
<td>#1.1, #1.2, the uniaxial loading part of #2.3</td>
</tr>
<tr>
<td>Midterm Exam II</td>
<td>#1, #2.1, #2.3</td>
</tr>
<tr>
<td>Final Exam</td>
<td>#1, #2</td>
</tr>
</tbody>
</table>

Extended Description
Relationship to Program Outcomes

This course contributes to fulfillment of the following program outcomes:

ii. Apply knowledge of mathematics, science, and engineering to design and implement original, innovative and sustainable civil engineering systems or processes to meet desired needs within a greater societal context

vi. Identify, formulate, and solve engineering problems

xi. Employ state-of-the-art engineering techniques and computing tools necessary for creative engineering solutions

Teaching Methods & Learning Activities

☑ Telling/Explaining
☐ Discussions/Debates
☑ Questioning
☑ Reading
☐ Peer Teaching
☐ Scaffolding/Coaching
☐ Demonstrating
☑ Problem Solving
☑ Inquiry
☑ Collaborating
☐ Think-Pair-Share
☐ Predict-Observe-Explain
☐ Microteaching
☑ Case Study/Scenario Analysis
☐ Simulations & Games
☐ Video Presentations
☐ Oral Presentations/Reports
☐ Concept Mapping
☐ Brainstorming
☐ Drama/Role Playing
☐ Seminars
☐ Field Trips
☑ Guest Speakers
☐ Hands-on Activities
☐ Service Learning
☐ Web Searching
☐ Experiments
☐ Other(s)

Student Workload

☑ Lectures ........................................ 42 hrs
☐ Course Readings ............................. 84 hrs
☐ Workshop ..................................... hrs
☐ Online Discussion ........................... hrs
☐ Debate ........................................ hrs
☐ Work Placement ............................. hrs
☐ Field Trips/Visits ............................ hrs
☐ Observation ................................. hrs
☐ Lab Applications ............................ hrs
☐ Hands-on Work .............................. hrs
☑ Exams/Quizzes .............................. 10 hrs
☐ Resource Review ............................ hrs
☐ Research Review ............................ hrs
☐ Report on a Topic ............................ hrs
☑ Case Study Analysis ....................... 15 hrs
☐ Oral Presentation/Reports ............... 5 hrs
☐ Poster Presentation ........................ hrs
☐ Demonstration .............................. hrs
☐ Web Designs ................................. hrs
☐ Mock Designs ............................... hrs
☐ Team Meetings .............................. hrs
☑ Other: Homework .......................... 15 hrs
Assessment Methods

- Test/Exam
- Quiz
- Oral Questioning
- Performance Project
  - Written
  - Oral
- Observation
- Self-evaluation
- Peer Evaluation
- Portfolio
- Presentation (Oral, Poster)
- Other(s): Homework

Week | Topics
--- | ---
1 - 2 | • Introduction: Materials, Design Philosophies
2 - 3 | • Probabilistic basis of design philosophies
4 - 5 | • Uniaxially Loaded Members
5 - 7 | • Pure Bending
7 | • Midterm Exam #1
8 | • Pure Bending
9-11 | • Combined Bending and Axial Loading
12 | • Midterm Exam #2
12-13 | • Shear
14 | • Bond

Course Policies and Some Remarks

Attendance

As an instructor teaching this course over 30 years, my records indicate that the students with an attendance rate less than 85 percent have a very high chance to get mark over BB. On the contrary, failure rate rapidly increases among those students who attend less than 70 percent of all lectures. In order to get a good grade I strongly advise my students not to miss any course. Benefitting old-wise-men experiences always help.

Calculator Policy

I am using my calculator for more than 40 years now, including the exams. Why shouldn’t you?
Other Devices with Bluetooth, Wi-Fi or GSM Access

You may enjoy these devices outside the exam hall. Your exam table must be free of devices with such abilities. The use of these devices during the exam is strictly not allowed. Failure to obey this policy will be worthy of the necessary action depending on the severity of the disobedience.

Plagiarism

Collaboration on non-collected homework and in studying is strongly encouraged; however, the work you hand in must be solely your own. Sharing written work before it is turned in to be graded is academic dishonesty. For more information on TEDU policy on intellectual integrity see the link http://student.tedu.edu.tr/sites/default/files/content_files/2015-2016ogrencielkitabi.pdf


Don't be someone saying “All my best thoughts were stolen by the ancients, (Ralph Waldo Emerson).” Be yourself, be original and be among those blessed people that never articulated these words.

Disability Support

If you have a disabling condition which may interfere with your ability to successfully complete this module, please contact Dean of Students Ms Pınar Baloş, (email: pinar.balos@tedu.edu.tr, phone: 312-585-0132 ). For more information please see Handbook for Registered Students.

Make Up Exams

Make-up exams for midterm exams for ordinary excuses will not be offered. The possible exceptions are acceptable for serious illness or emergency of high importance (legal proof is required). To tell you the truth, for not-so-serious illnesses such as having a runny nose, sore throat or even low fever, a soft paper tissue, a throat relieving pastille or an antipyretic may help you much better than writing a make-up exam.

Also please read the document given in the link http://www.tedu.edu.tr/tr/main/yonetmelikler-veyonergeler
# Relationship between Course Learning Outcomes and Program Outcomes

## Course Learning Outcomes vs. Program Outcomes

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>PO1: Comprehend science and advanced mathematics subjects fundamental to engineering</th>
<th>PO2: Apply knowledge of mathematics, science, and engineering to design and implement original, innovative and sustainable civil engineering systems or processes to meet desired needs within a greater societal context</th>
<th>PO3: Act professionally and ethically</th>
<th>PO4: Appreciate cultural diversity, respect individual and cultural difference</th>
<th>PO5: Design and conduct experiments; analyze and interpret data</th>
<th>PO6: Identify, formulate, and solve engineering problems</th>
<th>PO7: Demonstrate effective oral and written professional skills in English</th>
<th>PO8: Practice good working habits, time management, and self-discipline</th>
<th>PO9: Display multidisciplinary teamwork skills</th>
<th>PO10: Engage in life-long learning to face the future challenges and to achieve an enduring professional development</th>
<th>PO11: Employ state-of-the-art engineering techniques and computing tools necessary for creative engineering solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE314</td>
<td>Reinforced Concrete Fundamentals</td>
<td>Weight: 2 Through LO#1, LO#2</td>
<td></td>
<td></td>
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</tbody>
</table>
Fill-in your responses to questions related to the learning outcomes associated with this course.

For each major learning outcome listed below indicate the extent to which it has been met. If the topic has not yet been covered, do not score that topic area, leave it blank.

**Learning Outcome:**

Having successfully completed this course, the student will be able to:

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Poor</th>
<th>Fair</th>
<th>Adequate</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) interpret indications of different reinforced concrete structural behavior types to a certain extent, (B1, B3)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(1.1) Interpret the material behavior of steel under uniaxial and multiaxial states of stress (B3)</td>
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</tr>
<tr>
<td>(1.2) state how the time dependent deformations affect the behavior of R/C members and the structural safety (B1)</td>
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<tr>
<td>(2) perform analysis and design computations of structural members subjected to (B5)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2.1) uniaxial stress: uniaxial loading, pure bending, combined bending &amp; axial load</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2.2) biaxial stress: shear</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(2.3) and state how the concept of structural safety is employed in the design of R/C members by following different design philosophies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Check the validity of computer outcomes using some simple manual approximate methods of computation (B4)</td>
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</tr>
</tbody>
</table>
## Assessment of Learning Outcomes

**Course Title:** Reinforced Concrete Fundamentals  
**Course No.:** CE 314  
**Sem/Year:** Spring 2016  
**Instructor:** Güney Özcebe

<table>
<thead>
<tr>
<th>Learning Outcomes¹</th>
<th>Program Outcomes (i-xi)</th>
<th>Measures²</th>
<th>Target Rating³</th>
<th>Actual Rating⁴</th>
<th>Student Survey Score⁵</th>
<th>Instructor Rating (Below Target Rating = Below expectations, Target Rating = meets the criterion, Above Target Rating exceeds the criterion)⁶</th>
<th>Comments/ Recommendation⁷</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) interpret indications of different reinforced concrete structural behavior types to a certain extent, (B2, B5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Taken from the corresponding worksheet, “Relationship between Learning Outcomes and Program Outcomes”.  
² Measures should be selected based on the corresponding matrix, “Course Assessment and Learning Outcomes”.  
³ To be determined and to be filled by the department. This is the goal to be achieved in each respective learning outcome.  
⁴ Arithmetic average of the questions (given in the measures column) can be used. Both arithmetic average of all student grades and grades of best, average and worst student can be given.  
⁵ Based on the average of the “Student Course Evaluation Survey”.  
⁶ Weighted average of Actual Rating and Student Survey Score after expressing both as a grade point.  
⁷ Observations, suggestions and recommendations of the instructor for the ongoing semester.
| (2) Perform analysis and design computations for some basic structural members concerning some basic problems (B2, B5, B6) |
| (3) Check the validity of computer outcomes using some simple manual approximate methods of computation (B6) |
## Assessment of Program Outcomes

**Course Title:** Reinforced Concrete Fundamentals  
**Course No.:** CE 314  
**Semester/Year:** Spring 2016  
**Instructor:** Güney Özcebe  
**Date:**

<table>
<thead>
<tr>
<th>Program Outcomes</th>
<th>Instructor Rating (Below Target Rating = Below expectations, Target Rating = meets the criterion, Above Target Rating exceeds the criterion)</th>
<th>Comments/Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) Apply knowledge of mathematics, science, and engineering to design and implement original, innovative and sustainable civil engineering systems or processes to meet desired needs within a greater societal context.</td>
<td>[Blank]</td>
<td>[Blank]</td>
</tr>
<tr>
<td>(vi) Identify, formulate, and solve engineering problems</td>
<td>[Blank]</td>
<td>[Blank]</td>
</tr>
<tr>
<td>(xi) Employ state-of-the-art engineering techniques and computing tools necessary for creative engineering solutions</td>
<td>[Blank]</td>
<td>[Blank]</td>
</tr>
</tbody>
</table>

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8 Take average of all instructor ratings from the “Assessment of Learning Outcomes” table corresponding to the course learning outcomes contributing the program outcome under consideration.
Rating Scale

To be used when filling the “Assessment of Learning Outcomes” and “Assessment of Program Outcomes” tables.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
<th>Percentage Scores</th>
<th>Student Survey Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>90-100</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>80-89</td>
<td>Good</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>60-79</td>
<td>Adequate</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>50-59</td>
<td>Fair</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0-49</td>
<td>Poor</td>
</tr>
</tbody>
</table>