CIE202- Mechanics of Materials
(Spring 2014)

Course Description	Review of free-body diagrams and equilibrium principles; types of stresses and linear stress-strain relationship; axial, shear, torsion, and bending deformations; shear force and bending moment diagrams and deflection of beams.
Course Prerequisites:	CIE200 Statics
Courses that require this course as perquisite	CIE302 Structural Analysis I CIE304 Stress Analysis CIE308 Construction Materials CIE444 Soil Mechanics
Textbook:	Mechanics of Materials, 5th Edition, by Beer, Johnston, and DeWolf, McGrawHill.
Course website:	Course material will be available on web: Syllabus, homework, solution of homework, solution of Quizzes, and any other relevant materials.
Instructor	Fatima El Meski, PhD, PE : Office 305, Orme Gray E-mail: fatima.elmeski@lau.edu.lb
Class Hours:	Section 11 Lectures and Problem Sessions TTR 9:30-10:45 (Business Bldg.BB1006)
Office Hours:	TTR: 10:45-11:45
Objectives:	1. Describe the concepts of stress and strain 2. Analyze stresses for a member under axial load, torque, transverse load. 3. Determine principal stresses. 4. Describe the concept of statically indeterminate structures 5. Apply the axial compatibility conditions to solve statically indeterminate problems under axial loads 6. Determine deflections of beams and shafts by integration.

Topics:

1. Concepts of stress and strain
2. Mechanical properties of materials
3. Axial load, torsion, bending and shear, and combined loadings
4. Thermal stresses and strains for axial loading
5. Stress and strain transformations, principal stresses
6. Deflection of beams and shafts
7. Statically indeterminate problems

Contribution of course to meeting requirements of ABET Criterion 5

1. Mathematics and Basic Sciences (0 Credits)
2. Engineering Topics   (3 Credits)
3. General Education   (0 Credits)

Assessment:

1. Individual homework assignments and participation (10%)
2. Three one-hour quizzes and a 3-hour final exam, closed book. (10 % low, 15 % medium, 25 % high + 40%)

No make up tests will be given. For excused students, Final Exam will replace missed tests. Unexcused absentees will be awarded a zero grade for missed tests.

Letter grades will be assigned as follows:

A	90 – 100
A-	87 – 89
B+	83 – 86
B	80 – 82
B-	77– 79
C+	73 – 76
C	70 – 72
C-	67 – 69
D+	63 – 66
D	60– 62
F	0 – 59

Course Outline

CHAPTER 1
CHAPTER 2 Omit Sections 4,13, 16-20
            TEST #1 CHAPTERS 1 and 2

CHAPTER 3 Omit Sections 9-13
CHAPTER 4 Omit Sections 8-15
            TEST #2 CHAPTERS 3 and 4

CHAPTER 5 Omit Sections 5-6
CHAPTER 6 Omit Sections 5-9
CHAPTER 7 Omit Sections 7-13
            TEST #3 CHAPTERS 5,6 and 7

CHAPTER 9 Omit Sections 4,6,9-14

FINAL EXAM CHAPTERS 1,2,3,4,5,6,7 and 9

NOTE: Coverage of the syllabus material is contingent upon the availability of time and student progress in grasping the subjects covered.

Outcomes:

a) An ability to apply knowledge of mathematics, science, and engineering
   - ✓ Apply knowledge of mathematics (calculus) and engineering mechanics (statics) to analyze structural problems by calculating stresses, strain, and deflection.

b) An ability to identify, formulate, and solve engineering problems
   - ✓ Identify, formulate, and solve engineering problems through analysis of problems in the area of structural engineering.

Cheating:

Students caught cheating on an exam receive a grade of zero on the exam in the first cheating attempt and a warning. Students caught cheating for the second time in the same course receive an F grade in the course and a second warning.

Student Responsibilities:

1. LAU expects all students to maintain the highest level of integrity. Cheating or plagiarism will not be tolerated. University policies regarding academic integrity are available in http://www.lau.edu/policies
2. The instructor will adhere to all LAU policies regarding academic integrity as stated.
3. All work must be the result of students' own efforts.
4. Students who are suspected of plagiarism or other violations of academic integrity codes will face investigation. Those found guilty will face disciplinary action. Repeated offenses will result in permanent expulsion from the University.
5. Students are expected to study on a regular basis (after each lecture) and not postpone studying till just before the test.
6. Students are responsible for all the material covered in class. Any material that is in the textbook and not covered in class will not be included in the test.
7. Homework must be neat and legible or it will not be graded, and must be turned in at the beginning of class on the day it is due, with no exceptions.