

CIVE210 – STATICS

(Fall 2015-16)

- Course Summary:** CIVE210 – Statics- 3 Credits – Undergraduate (Sections 1 to 6)
The course seeks to impart an understanding of the principles of static equilibrium and introduction to structural analysis to serve as a basis for the design of engineering systems.
- Description:** Vector mechanics of forces and moments; free-body diagrams; equilibrium of particles and rigid bodies in two and three dimensions; plane and space trusses; frames and machines; axial, shear, and moment diagrams of beams and simple frames; friction; center of gravity and centroid; area moment of inertia; computer applications.
- Topic Prerequisite:** Trigonometry and elementary calculus.
- Textbook:** Hibbeler, *Engineering Mechanics: Statics*, Pearson, 13th Edition (available in the bookstore, but any older edition will do – Note that homeworks will be assigned and posted on Moodle from 12th Edition).
- Moodle:** Course material will be available on Moodle via AUB website.
- Instructors:** Fatima El Meski (Sections 1 & 3, SRB202; fme09@mail.aub.edu)
Amer Elsouiri (Section 5, SRB202; ae54@aub.edu.lb)
Hiam Khoury (Section 6; Bechtel 528, hk50@aub.edu.lb)
Mounir Mabsout (Sections 2 & 4, CEE Dept; mounir@aub.edu.lb)
Graduate Assistants: **TO BE ASSIGNED**
- Class Hours/
Problem Sessions:**
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|------------|---|
| Section 1: | Lectures MW 8:00-9:00
Problem Session M 16:00–17:30 |
| Section 2: | Lectures MW 9:00–10:00
Problem Session W 16:00–17:30 |
| Section 3: | Lectures MW 10:00–11:00
Problem Session M 17:30–19:00 |
| Section 4: | Lectures MW 11:00–12:00
Problem Session W 17:30–19:00 |
| Section 5: | Lectures MW 8:00-9:00
Problem Session M 16:00–17:30 |
| Section 6: | Lectures TuTh 8:00-9:00
Problem Session Th 17:00–18:30 |
- Office Hours:** MW: 9:00-10:00 M: 15:00-16:00 (El Meski, SRB202)
MW: 10:15-11:00 (Elsouiri, SRB202)
Th: 15:30-17:00 (Khoury, Bechtel 528)
MW: 10:00-11:00 W: 15:00-16:00 (Mabsout, CEE Dept)
You can see either instructor for help in any of the office hours above.
- Assistance Hours:** MWTh: During Problem Sessions (All Assistants)
You can get personal assistance from any of the Graduate Assistants (GAs) during problem sessions, who will do their best to address your questions.

Objectives:

This course is designed to be an introduction to engineering mechanics for static systems. The main objectives of the course are to (1) provide the student with tools for manipulating forces and moments using vector analysis in two and three-dimensional problems; (2) develop in the engineering student the ability to analyze any static problem in a simple and logical manner; (3) make the student understand the physical principles required for static equilibrium; and (4) enable the student to calculate forces, shears, and bending moments in members such as cables, trusses, beams, and frames.

Topics:

1. Introduction to Statics; Fundamental Concepts; Units
2. Vector Algebra: Forces in Plane and in Space.
3. Equilibrium of a Particle: Plane and Space Equilibrium.
4. Analysis of Moments due to Force Systems.
5. Equilibrium of a Rigid Body.
6. Internal Actions: Axial Force, Shear Force, and Bending Moment Diagrams.
7. Structural Analysis of Trusses.
8. Center of Gravity and Centroid.
9. Friction.
10. Moment of Inertia

Problem Session:

Regular weekly problem solving sessions supervised by course instructors and graduate assistants. Purpose is to enhance understanding of material and allow students to follow up consistently, through monitored practical exercises.

Assessment:

1. Attendance (as below).
2. Individual homework assignments. (5%)
3. Two 1.5-hour quizzes and a 3-hour final exam. (25+25+45%)
4. **ZERO-TOLERANCE** policy on cheating and plagiarism.

Attendance:

Attendance is **mandatory**. Class attendance will be taken and students will be penalized for absences according to the following rules:

- A total of three absences for the semester will be permitted w/o penalty. These **include** instances of sicknesses and other valid excuses. For every absence beyond the third, **1 point** will be deducted from the final course grade. The student may seek to reverse the above, by presenting a petition along with a documented valid excuse explaining the absences, to the FEA Academic Committee.
- As set by AUB Catalogue/regulations or in your Student Manual, students who miss more than one-fifth of the sessions of any course in the first ten weeks of the semester will be required to withdraw from the course with a grade of "W".

Please note that the attendance rules listed above will be strictly enforced.

Exam Dates:

TO BE ANNOUNCED

ADDITIONAL IMPORTANT NOTES

In addition to what is set/specified on the syllabus, these are guidelines/rules meant to run classes smoothly, for the benefit of all.

On Office Hours and Assistance:

Office hours for both teachers are available on the syllabus (info posted on Syllabus/Moodle). Additional one-to-one assistance is also available from any of the five Graduate assistants assigned to the course (info posted on Syllabus/Moodle).

On Attendance:

Mandatory, and rules specified in syllabus.

Do not sign for anyone who is absent. This will cause you and/or your colleague to be dropped out from the class (NO EXCEPTIONS!).

On Homeworks (HW):

Follow the instructions on the HW sheets. Use cover folder, FE paper, staple and write all information as instructed.

HWs should be submitted IN CLASS on the day specified, and NOT anywhere else.

HWs will be returned in class, usually during problem sessions.

On Problem Sessions (PS):

You should print the PS sheets and bring them to the session; if you do not have the sheets with you, you will be considered absent.

Write directly on the PS sheets and do not use scratch/draft paper and copy later. This is part of the exercise for your professional training.

The PS will be checked/assessed for work before you leave, but not graded, i.e. those not checked, or not done on the PS sheets, or assessed not satisfactory (i.e. you were doing “nothing” during the session) will make you absent.

Bring a calculator; cells are not to replace calculators.

Other:

Any rule set by your teacher in class will apply and be strictly enforced.

