



## Course Syllabus Engineering Statics ENGR 2301 (Fall 2016)

**Instructor:** Salomeh Tabatabaei

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**Course Location  
And Time:** Science and Technology NE  
Sat. 12:00-3:50PM

**Course CRN:** 11758

**Course Semester  
Credit Hours:** Credit Hours: 3  
Lecture Hours: 3  
Laboratory Hours: 1

**Total Course  
Contact Hours:** 64.0

**Type of Instruction:** Lecture

**Course  
Description:** Composition and resolution of forces, free body diagrams, analysis of forces acting on structures and machines, friction, centroids, and moments of inertia.

**Course  
Prerequisite(s):**

- PHYS 2425
- MATH 2414

**Course Textbook:** Vector Mechanics for Engineers – Statics, 10th Edition Beer, Johnston, Mazurek, McGraw-Hill Publishers (2013)  
ISBN-13 9780077889708,  
(Statics only), ISBN-13 9780073398136, (Statics + Dynamics)

**Course Objectives:** Upon completion of this course students should be able to

1. Analyze forces and find out the resultant forces in two and three dimensions.
2. Demonstrate qualitative and quantitative understanding of equilibrium of a particle and rigid bodies.
3. Differentiate between various type of supports and draw free-body diagrams
4. Obtain center of mass and centroid for different engineering shapes

5. Give analysis of structures, friction, and calculation of moment of inertia in two and three dimensional objects.

**Grading:**

<b>Exam 1:</b>	25%
<b>Exam 2:</b>	25%
<b>Final Exam:</b>	40%
<b>Home Work:</b>	10%

**Grading Scale:** For final grade percentage x:

$x > 90.000$	A
$80.000 < x < 90.000$	B
$70.000 < x < 80.000$	C
$60.000 < x < 70.000$	D
$x < 60.000$	F

**Attendance:** Class attendance will be enforced on the random bases and if you missed four sessions during this course, you may be administratively withdrawn (an Fx will be issued after the final drop date). Attendance count will begin with the first class. **If you are absent from class, it is your responsibility to obtain the lecture material from one of your classmates.**

**Withdrawal:** HCC policy provides that students may be dropped after missing more than eight hours of class time. A grade of FX will be issued in this case.

Withdrawal from the course is the responsibility of the student and must be done by the drop date. If the student stops attending, and does not drop the class, an "FX" will be recorded for the course.

Students who take a course for the third time or more must now pay significant tuition/fee increases at HCC and other Texas public colleges and universities. At HCC it is an additional \$50 per credit hour. Also, the state of Texas has passed a new law limiting new students (as of Fall 2007) to no more than six withdrawals throughout their academic career in obtaining a baccalaureate degree.

**Homework:** Problem sets will be provided. From each homework set, random students will be selected for grading each session. You may call for several times or may not call at all. If you missed any homework, you will not receive any grade. These problem sets are essential for learning the course material. Late homework will not be accepted. Homework will be solved in the class in the next session.

### **Exams and Makeup Exam Policy**

If a student must miss an exam for any reason, the lowest grade among other two other exams will count for your missed exam.

Exam Rules:

- No talking or discussion is allowed.
- You must bring your own calculator and make sure it has adequate batteries.
- No cell phone or any other electronics may be used.
- No books or other references allowed unless otherwise instructed.
- If you must use the restroom during the exam, only one student at a time may leave the room, and you must leave your cell phone with me.

**Student Responsibilities and Roles:**

- Student is responsible to understand the syllabus.
- Student is responsible to read the textbook and/or course material without instructor explicitly assigning reading.
- Student is responsible to attend all lecture sections.
- It is the student's responsibility to properly withdraw from the class.
- Student is responsible to finish all homework on time.
- Student is responsible to ask questions on any material or homework he/she is having difficulty to understand.
- Student is responsible to take the exams and final on the assigned dates.
- Student need to be active and engaged with the instructor.
- Student handbook: <http://www.hccs.edu/district/students/student-handbook/>

**Students with Disabilities:**

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Service Office (713-718-5422) at the beginning of each semester. Faculty members are authorized to provide only the accommodations requested by the Disability Support Services Office.

**Student Discipline:**

As students studying for the engineering profession, adult and professional behavior is expected. Disruptive behavior/ activities, which interfere with teaching and /or learning will not be tolerated, and may result in an administrative withdrawal without refund.

**Academic Honesty, Plagiarism, and Collusion**

HCC Policy: "Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. Cheating on a test includes copying from another student's test paper; using, during a test, materials not authorized by the person giving the test; collaborating with another student during a test without authority; knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an unadministered test; or bribing another person to obtain a test that is to be administered. 'Plagiarism' means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work for credit. 'Collusion' means the unauthorized collaboration with another person in preparing written work offered for credit."

In simplified terms, cheating is: (1) taking unchanged passages (or slightly edited) from another person's writing and portraying them as one's own; (2) submitting a paper that includes paraphrases of another person's writing without giving credit; (3) having someone else write your paper for you; (4) copying or using another person's work during in-class writing or testing; and (5) the unauthorized use of electronic devices during in-class writing or testing. Keep in mind also that whether you are cheating or not, not following testing or writing rules properly, such as communicating with your neighbor or using a cell phone during a test will be construed as cheating. This is not an exhaustive list of the forms of scholastic dishonesty. If you are in doubt, consult your instructor.

**Topics to be Covered (\*Tentative)**

- Introduction (Chapter 1)
- Statics of Particles (Chapter 2)
- Rigid Bodies: Equivalent Systems of Forces Equilibrium of Rigid Bodies (Chapter 3 & 4)
- Distributed Forces: Centroids and Centers of Gravity Analysis of Structures (Chapter 5)
- Analysis of Structures (Chapter 6)
- Forces in Beams and Cables (Chapter 7)
- Friction (Chapter 8)

- Distributed Forces: Moments of Inertia (Chapter 9)

**Title IX Statement:** HCC is committed to provide a learning and working environment that is free from discrimination on the basis of sex which includes all forms of sexual misconduct. Title IX of the Education Amendments of 1972 requires that when a complaint is filed, a prompt and thorough investigation is initiated. Complaints may be filed with the HCC Title IX coordinator available at 713 718-8271 or email at [ois@hccs.edu](mailto:ois@hccs.edu).

**HCC Anti-Discrimination Policy**

<http://www.hccs.edu/district/students/anti-discrimination/>