



STEM

COURSE: *EGS-230*

COURSE TITLE: Statics and Dynamics

Credits: 4

INSTRUCTOR:

TERM:

DAY(S) AND TIME(S):

LOCATION:

OFFICE HOURS:

OFF. LOCATION:

EMAIL:

TELEPHONE:

COURSE DESCRIPTION: Extension of the introductory engineering physics course on mechanics. Topics covered include the equilibrium of particles and rigid body systems subject to concentrated and distributed forces, the motion of particles and rigid bodies, the relation of motion of particles to various force distributions and torques, work energy relations, impulse momentum relations, and conservation principles.

COURSE PREREQUISITE: PHY111 and MAT112 or higher

STUDENT LEARNING OUTCOMES

Upon successfully completing this course, students will be able to

1. Apply the conditions necessary for equilibrium of both particle and rigid body systems.
2. Extend equilibrium of rigid body principles to simple structural analysis.
3. Discuss the concepts of center of gravity and moment of inertia and their use and compute for simple symmetries.
4. Analyze the basic kinematical relations within the context of a frame of reference and be able to interpret graphical representation of motion.
5. Employ Newton's laws of motion and explain how the second law is the foundations of all classical dynamics.
6. Discuss motion of particles and rigid bodies from force linear acceleration and torque angular acceleration relations.

7. Develop work and energy relations and apply them in situations involving particle systems and rigid body systems.
8. Analyze the concept of a conservation principle and identify situations in which these are applicable.
9. Employ conservation of mechanical energy to particle and rigid body systems and modify when dissipation is present.
10. Explain the concept of impulse and momentum principle for particle and rigid body systems. Employ conservation of momentum in general two dimensional collision and in recoil propulsion processes.
11. Use library skills to prepare reports on course related topics and to supplement tests.

TEXTBOOK & SUPPLEMENTAL MATERIALS

Textbook: Engineering Mechanics - Statics, 14th edition

Author: R. C. Hibbeler

Supplemental Materials:

- **The online quiz is obligatory, and due by the next class meeting.**

GRADING POLICY

BREAKDOWN OF GRADING:

Midterm #1:-----20%
 Midterm #2: -----20%
 Weekly Quizzes-----30%
 Final Exam-----30%
Total 100%

The grade scale for this class will be as follows:

93 – 100 = A
 90-92.9 = A-
 87-89.9 = B+
 84-86.9 = B
 80-83.9 = B-
 76-79.9 = C+
 70-75.9 = C
 65-69.9 = D
 Below 65 = F

TENTATIVE COURSE SCHEDULE

Week	Topic
1	Introduction / Force Vectors
2	Equilibrium of a Particle
3	Equilibrium of a Particle (continue)
4	Force System Resultants
5	Resultants (continue)

6	Midterm#1 and Equilibrium of a Rigid Body
7	Equilibrium of a Rigid Body (continue)
8	Structural Analysis-Joint Method
9	Structural Analysis-Section Method
10	Internal Forces
11	Friction and Midterm#2
12	Center of Gravity
13	Dynamics
14	Dynamics
15	Review and Final test
Note	

CELL PHONE USE POLICY

Cell phones are not allowed during exams.

MANDATORY USE OF HCCC EMAIL ADDRESS

Mandatory Use of HCCC Email Address: Members of the HCCC community are required to check their official HCCC email address to stay current with college and course communications. All college business communication between faculty, students, and staff must be sent via an official HCCC email address. If an employee or student elects to forward or link his/her HCCC email to a separate and private account, that individual remains responsible for all material transmitted to that account. Employees of HCCC shall not be responsible for any material that remains undelivered, due to defects in the private non-HCCC accounts. Failure in the operations of private email accounts shall not be cause for excuse from communications between the student and the HCCC employee. Students that encounter difficulty with HCCC email should view the FAQ's section on the Website.

INCOMPLETE

An INCOMPLETE grade for the course is given under specific conditions when a student, because of serious and unexpected reasons, cannot complete the requirements of the course. For example, if a student did not attend the final because of illness his or her excuse must be verified by a physician. Other absences from other assigned activities must be made up at another appointed time. To arrange for an incomplete grade, the student must see the instructor before final exam, so proper documentations could established and submitted to Division and The office of Academic Affairs.

DISABILITY SUPPORT SERVICES:

Hudson County Community College is committed to the creation of an inclusive and safe learning environment for all students. The Office of Accessibility Services is responsible for determining reasonable accommodations for students who encounter barriers due to disability (conditions can include but are not limited to mental health, attention-related, learning, cognitive/developmental, vision, hearing, physical or health impacts). When the student completes the request process and reasonable accommodations are determined to be necessary and appropriate, an Accommodation Letter (Letter) will be provided. The student must provide the Letter to each course instructor. This should be done as early in the semester as possible as

accommodations are not retroactive. You can contact Accessibility Services by phone at 201-360-4157, by email at as@hccc.edu; visit their website at <http://www.hccc.edu/accessibility-services/> or visit them at 71 Sip Avenue, L011, Jersey City, NJ and all information provided will be kept confidential.

ACADEMIC INTEGRITY

Academic integrity is central to the pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students earn college credits by their honest efforts. When they are awarded a certificate or degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

Violations of the principle of academic integrity include:

- Cheating on exams.
- Reporting false research data or experimental results.
- Allowing other students to copy one's work to submit to instructors.
- Communicating the contents of an exam to other students who will be taking the same test.
- Submitting the same project in more than one course, without discussing this first with instructors.
- Submitting plagiarized work. Plagiarism is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work.

When students act dishonestly in meeting their course requirements, they lower the value of education for all students. Students who violate the college's policy on academic integrity are subject to failing grades on exams or projects, or for the entire course. Serious cases may be reported to a division dean or director for further disciplinary action, including suspension or dismissal from HCCC.

Detailed information on the College's Academic Integrity policy may be found in the HCCC Student Handbook. The handbook also contains useful information for students on completing research projects and avoiding plagiarism

Audio-Visual Recording

Hudson County Community College prohibits the audio-visual recording, transmission, and distribution of classroom sessions. Classes may only be recorded with the advance written permission of the instructor. The complete classroom recording policy is listed in the student handbook.

Diversity, Equity, & Inclusion Statement

Hudson County Community College (HCCC) fosters a welcoming environment that celebrates and encourages culturally responsive curricula, respects diverse viewpoints, and values discussions without censure or hostility. Our classrooms are strengthened by embracing all student voices and identities. The President's Advisory Council on Diversity, Equity, and Inclusion (PACDEI) encourages students to review DEI resources and initiatives at the following link: <https://www.hccc.edu/abouthccc/dei/pacdei.html>

Emergency Notifications

In case Hudson County Community College is closed due to unforeseen circumstances such as inclement weather, loss of power, etc., students are to call or check the college website and check email accounts for instructions and updates, when possible. HCCC main# (201) 714-7100 or <http://www.hccc.edu>. Alternatively, please check Canvas and your college email for important posts regarding classes and the College.

Financial Aid & Attendance

Federal regulations require that students earn their financial aid funds by attending class. Professors collect and report attendance information to verify financial aid eligibility. Failure to begin attending a course may negatively impact the student's financial aid enrollment level and eligibility. If you have any questions, please contact the Financial Aid office at financial_aid@hccc.edu or 201-360-4200.

HCCC Mission

Hudson County Community College provides its diverse communities with inclusive, high-quality educational programs and services that promote student success and upward social and economic mobility.

Hudson Helps

HCCC is committed to supporting students who face non-academic barriers to success. If you are experiencing challenges outside of the classroom that is impacting your academic performance, please visit <https://www.hccc.edu/student-success/personal-support/hudsonhelps/index.html> to access additional student supports and resources.

Remote Class - Camera Policy

As a college, we strive to be student-centered and therefore encourage faculty to consider a student's individual circumstances (need for privacy, technological problems, etc.) when requiring that they turn on cameras during class. There is no legal prohibition on faculty requiring cameras be turned on during classes or college policy prohibiting such requests. If students are unable to turn their cameras on, they should communicate the circumstances to the faculty member. On-campus spaces are also available to students as an alternative to home or off campus online and remote instruction. The on-campus spaces include: Gabert Library L219, L221, L222, L419, STEM Building S217, and North Hudson Campus N224, N303D. Within these rooms, students will have access to computers, web cameras, and headsets. If there are any issues with space capacity, there are additional rooms that can be utilized.

Hudson County Community College has many supportive services available to help meet your goals. Below are resources available to you:

SECURITY: Main Campus: 201-360-4080 North Hudson Campus: 201-360-4777	NATIONAL SUICIDE PREVENTION LIFELINE: 1-800-273-8255 CRISIS TEXT LINE: Text “HELLO” to 741-741	
IN AN EMERGENCY, PLEASE CONTACT SECURITY OR 911.		
Department	Journal Square Campus	North Hudson Campus
Counseling Services counseling@hccc.edu	201-360-4150 A Building, 2 nd Floor https://my.hccc.edu/advisement	201-360-4627 1 st Floor, Enrollment Center https://my.hccc.edu/advisement
Advising Services advising@live.hccc.edu		
Accessibility Services as@hccc.edu	201-360-4163 A Building, 2 nd Floor https://my.hccc.edu/as	201-360-4163 1 st Floor, Enrollment Center https://my.hccc.edu/as
Career Services career@hccc.edu	201-360-4184 A Building, 3 rd Floor https://my.hccc.edu/career-services	201-360-4138 2 nd Floor, Room 204 https://my.hccc.edu/career-services
Food Pantry foodpantry@hccc.edu	201-360-4701 J Building, Lower Level Room 002 my.hccc.edu/hudson-helps	201-360-4709 5 th Floor, Room 513A my.hccc.edu/hudson-helps
Financial Aid financial_aid@hccc.edu	201-360-4200 A Building, 2 nd Floor https://my.hccc.edu/fa	201-360-4214 1 st Floor, Enrollment Center https://my.hccc.edu/fa
Information Technology Services itshelp@hccc.edu	201-360-4310 A Building, Lower Level https://my.hccc.edu/its	201-360-4309 3 rd Floor, Room 309 https://my.hccc.edu/its
Library Journal Square librarian@hccc.edu North Hudson librarynhc@hccc.edu	201-360-4360 L Building, 1 st Floor http://www.hccclibrary.net/	201-360-4623 3 rd Floor http://www.hccclibrary.net/
Tutoring Center tc@hccc.edu	201-360-4187 L Building, Lower Level https://my.hccc.edu/tutoring	201-360-4779 7 th Floor, Room 704 https://my.hccc.edu/tutoring/
Writing Center wc@hccc.edu	201-360-4370 J Building, Room 204 https://my.hccc.edu/tutoring	201-360-4779 7 th Floor, Room 704 https://my.hccc.edu/tutoring/