MEC 260: Engineering Statics
Department of Mechanical Engineering   Spring 2025

1. **Teaching Team**

Instructor: Prof. Jeff Ge
                Office: 171 Light Engineering   Office Hours: MW 10-11:30AM
                Email: Qiadoe.Ge@stonybrook.edu
Teaching Assistant: Huan Liu: Huan.Liu.1@stonybrook.edu
                                                Office Hours: TUTH 2-2:30PM

2. **Scheduled Class Meeting Times**

Lecture: MW 3:30PM – 4:50PM, Frey Hall 317
Recitation: M 2PM-2:55PM, Frey Hall 313

3. **Course Description:** A review of vector algebra. Concept of force. Equilibrium of particles. Moments about points and lines, couples and equivalent force systems. Equilibrium of rigid bodies. Analysis of simple structures such as trusses, frames, and beams. Centroids, centers of gravity, and moments of inertia. Dry friction with applications to wedges, screws, and belts. Method of virtual work, potential energy, and stability. Prerequisites: PHY 131/133 or 141 or 125, Co-requisites: AMS 261 or MAT 203.

4. **Textbook:** Vector Mechanics for Engineer: Statics 12th Ed., by Beer, Johnson, Mazurek, Cornwell, and Eisenberg, McGraw-Hill Higher Education, ISBNL9781260689570. Online version with Connect is required and available in the bookstore or directly from McGraw-Hill (via Brightspace).

    Please use this link to register for the course in Connect:
    https://connect.mheducation.com/class/j-ge-spring-2025-1
    Instructions can be found here:
    https://www.mheducation.com/highered/support/connect/first-day-of-class/d2l.html

5. **Course Objective:** Provide the necessary background for further study of MEC 262 Dynamics, MEC 363 Mechanics of Solids, and MEC 364 Fluid Mechanics.

6. **Grading:** Homework and Quizzes (25%), Two Midterm Exams (20% each), Final Exam (35%). Note: A grade of C or higher is required to take MEC 262 and MEC 363. The grading scale is
    $92 \leq A \leq 100$ $88 \leq A- < 92$ $85 \leq B+ < 88$ $81 \leq B < 85$ $78 \leq B- < 81$
    $74 \leq C+ \leq 78$ $70 \leq C < 74$ $67 \leq C- < 70$ $64 \leq D+ < 67$ $60 \leq D < 64$

7. **Exams**: Closed book/notes. You must coordinate and receive permission for a planned exam absence one-week prior to the exam date. An unexcused exam absence will be scored as a zero, unless it is unexpected and a valid excuse with appropriate documentation is presented to Professor Jeff Ge within three days following the exam. Sleeping late is not a valid excuse. If you are sick, see your doctor and get a note. You must bring your SBU ID, two or more pencils, and an approved scientific calculator to each exam. Our department follows NCEES policy on calculators, which can be found at https://ncees.org/exams/. The only acceptable calculators are as follows:
    Casio: Must contain **fx-115** in its model name
    HP: Only **HP 33s** and **HP 35s** models
    TI: Must contain either **TI-30X** or **TI-36X** in its model name.

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8.   <u>**Homework Assignments**</u>: Homework is to be completed in McGraw-Hill Connect via Brightspace. Please contact McGraw-Hill support if you have problems with Connect.

9.   <u>**Course Learning Objectives**</u>: Represent force and moments as vectors; Algebraically analyze the effect of systems of forces on rigid bodies; Draw free body diagrams of rigid bodies and systems; Apply vector-based systematic procedures for determining forces; Calculate centroids, second moments of areas, and moments of inertia.

10. <u>**Tentative Schedule**</u>

Week	Chapter
1	Introduction, Chapter 2: Statics of Particles
2	Chapter 2: Statics of Particles
3,4	Chapter 3: Rigid Bodies: Equivalent System of Forces
5	Chapter 4: Equilibrium of Rigid Bodies – Free body diagrams
6	Chapter 5: Distributed Forces: Centroids and moments of areas and lines
7	Review; Midterm #1 (Wed 3/12 in class)
8	Spring recess (3/11-15)
9,10	Chapter 6: Analysis of Structures
11	Chapter 7: Forces in Beams and Cables
12	Chapter 8: Friction
13	Review; Midterm #2 (Wed 4/16 in class)
14	Chapter 9: Distributed forces: moments of inertia
15	Chapter 10: Method of Virtual Work; Review
16	**Final Exam (5:30pm-8pm, Monday 5/19, Comprehensive)**

11. <u>**CEAS Tutoring Service:**</u> Experiencing challenges understanding lectures? Having trouble getting started on class assignments? You may need to brush up on some of your foundation knowledge. The College of Engineering & Applied Sciences offers FREE in-person group tutoring for this class! A full schedule of available tutoring times and locations can be found on their website: stonybrook.edu/ceas/tutoring

12. <u>**Academic Policies**</u>

Student Accessibility Support Center Statement

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: https://ehs.stonybrook.edu//programs/fire-safety/emergency-evacuation/evacuation-guide-disabilities and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.