CEE2040 Syllabus

Dynamics, Section A, 3 Credits

Fall 2026

Instructor Information

Instructor: Donald Webster

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General Course Information

Description

Kinematics and kinetics of particles and rigid bodies in one and two dimensions; principles of work/energy and impulse/momentum.

Prerequisite: COE2001 Statics

Course Learning Outcomes

Outcome 1: The student will develop an understanding of the fundamentals of engineering problem solving, with emphasis on problem identification, formulation, and solution.

Outcome 2: The student will develop schema to apply skills in mathematics and physics to solve engineering dynamics problems.

Outcome 3: The student will identify and apply solution techniques that work effectively for different problem-solving types.

Required Course Materials

Meriam, Kraige and Bolton (2018) Engineering Mechanics: Dynamics, 9th Edition, Wiley – Note that you will need a WileyPlus access code. Digital, Value, or Hardback editions are all acceptable.

Grading Policy:

Your final grade will be based on participation (10%), quizzes (20%), three mid-semester exams (15% each), and final exam (25%). Final semester grades will be assigned as follows: A >90%; B >78%; C >65%; D >55%

Description of Graded Components

A detailed Course Schedule is provided in Canvas. The class meetings will largely consist of interactive team problem solving sessions. You are strongly encouraged to work in teams on the daily problem sets. Teams of 2 or 3 are optimal. Lecture material is provided via on-line videos. You must watch the online lectures and examples prior to arriving at the class meeting in order to be prepared for the problem-solving session.

All course materials are consolidated at: Canvas

Several quiz problems will be assigned and are due each Thursday at 11:59pm. Late quizzes will receive 1/2 credit. Quizzes will be submitted through the WileyPlus online system, in which you have online access to the textbook and other supplemental materials. **YOU MUST REGISTER FOR WileyPlus BY FOLLOWING THE INSTRUCTIONS PROVIDED**. You have 4 attempts for each quiz problem to submit the correct answer (within a tolerance of ±3% to account for round off errors), after which you will have access to the published solution. The assigned problems are algorithmic, which means each student will have unique input parameters.

There will be three mid-semester exams and a final exam. Exams will be conducted in the classroom in hand-written format. All exams are closed book, but one page (8-1/2 by 11) (single side) of equations is allowed.

Course Policies

Attendance and/or Participation

To earn the class participation credit, you must attend every team problem solving session (with up to 2 unexcused absences). Your in-class work will not be checked for correctness, rather the instructor will post his handwritten solutions for your reference. The participation credit is binary: you will receive 10% toward your final grade total if you meet the participation requirement or you will receive 0 if you don't.

Please be respectful of the health and safety of your classmates and instructors. PLEASE DO NOT ATTEND CLASS IF YOU ARE SICK. Lecture and Team Problem content is available in the Canvas page. In the event that you are ill, the instructor will give you an alternate pathway to earn the participation credit.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Collaboration, Group Work, and Use of Generative AI

When working on the online quizzes and in-class assignments, you may work collaboratively with other students in the class. However, since every student has unique parameters, you must submit your own answers.

Unauthorized use of any previous semester course materials, such as tests, quizzes, homework, projects, and any other coursework, other than that provided by the instructor, is prohibited in this course. Using these materials will be considered a direct violation of academic policy and will be dealt with according to the GT Academic Honor Code. Similarly, you may not use Generative AI applications for course assignments.

Additional Course Policies

This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the assistants, and instructor. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com. Find our class signup link at: https://piazza.com/gatech/fall2026/cee2040a/home

Campus Resources for Students

Undergraduate Student Academic Success Resources:

Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being (student-resource-guide (gatech.edu)

Course Topics with Identified Textbook Sections:

Chapter 1: Introduction to Dynamics
Chapter 2: Kinematics of Particles
- 2.1 Introduction
- 2.2 Rectilinear motion
- 2.8 Relative Motion (Translating Axes)
- 2.3 Plane Curvilinear Motion
- 2.4 Rectangular Coordinates (x-y)
- 2.5 Normal and Tangential Coordinates (n-t)
- 2.6 Polar Coordinates (r-□)

Chapter 3: Kinetics of Particles
- 3.1 Introduction
- 3.2 Newton's Second Law
- 3.3 Equations of Motion and Solution of Problems
- 3.4 Rectilinear Motion
- 3.5 Curvilinear Motion
- 3.10 Angular Impulse and Angular Momentum
- 3.6 Work and Kinetic Energy
- 3.7 Potential Energy
- 3.8 Impulse and Momentum - Introduction
- 3.9 Linear Impulse and Linear Momentum