BC 3640 Syllabus

Construction Mechanics BC 3640, Section BC, 3 Credits

Fall 2026

Instructor Information

Instructor: Ebenezer Fanijo

Email: ebenfanijo@gatech.edu

General Course Information

Description

Evaluation of behavior of buildings, structural behavior of loads resisting members in buildings and properties of structural materials.

Course Learning Outcomes

Analyze force systems and equilibrium (concurrent, non-concurrent, and parallel) to evaluate the behavior of structural elements and construction materials.

Apply principles of structural mechanics to determine reactions, internal forces (axial, shear, bending), and deflections in beams, columns, trusses, walls, and footings under various loading conditions.

Quantify and interpret stresses and deformations using key mechanical properties (e.g., modulus of elasticity, moment of inertia, section modulus, radius of gyration).

Evaluate structural systems (beams, frames, trusses, columns, footings) using fundamental equilibrium and behavior principles.

Differentiate material properties of concrete, steel, and timber to inform appropriate selection and application in structural systems.

Required Course Materials

Applied Statics and Strength of Materials, 7th Edition, Limbrunner and D'Allaird, Pearson Education, Inc. available at Georgia Tech Barnes and Noble Bookstore.

Grading Policy:

Quiz (~9 short in-class quizzes) 20%; Mid Term Exam 30%; Final 30%; Homework 20%.

A>90; B>80; C>70; D>60.

Assignments

- Quiz, 20%
- Test, 30%
- Mid Term Exam, 20%
- Final Exam, 30%

Description of Graded Components

The quiz and all exams are in class and open book and notes. Equation sheet provided

Course Policies

Attendance and/or Participation

This is an active learning classroom where your participation is expected. Regular attendance and engagement are essential to your success and will be assessed through short in-class quizzes. In addition, I will count attendance in determining your final grade.

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.

Core IMPACTS

Core IMPACTS is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated career competencies. This resource developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

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.

Pre- &/or Co-Requisites

PHYS 2211 Intro Physics I.

Collaboration, Group Work, and Use of Generative AI

You are allowed to work in groups on all homework and out-of-class assignments (and you may use my solutions), but any work you turn in must be written in your own hand. In- class tests and exams are to be your own work. All in-class tests and exams will be open book and notes, but I will provide an equation sheet.

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Late homework will be penalized accordingly. Make-up exams are given for illness, approved Institute activities or religious observances.