MECHANICAL BEHAVIOR OF COMPOSITES

Course Information

Instructor: H. Jerry Qi (qih@me.gatech.edu)
Course Prefix and Number: ME 4791 A O Q
Term: Fall 2026

Course Description

To serve as an introductory course for composite materials. Emphasis will be on the understanding of what is a composite material, what it consists of, how it behaves, how to predict its response under thermal and mechanical loadings and use it in design. This is a very broad course that should give to student a good grasp of composites technology. This course serves as a springboard for more advanced courses on the subject.

Course Learning Outcomes

By enrolling in this course, students will:

1. Learn types and manufacturing methods of composites materials.
2. Learn industrial applications of composites materials.
3. Learn mechanics of composites materials.
4. Explore how to design composite materials for applications.

Required Course Materials

Primary:
Fiber-Reinforced Composites Materials, Manufacturing and Design, 3nd Edition by P.K. Mallick

Reference:
Mechanics of Composite Materials, 2nd Edition by Robert Jones

The book by Jones focuses more on mechanics, so it will be used as a supplement to Mallick book. It is also a good book to keep if you want to know more about mechanics or you care about mechanics in your job.

Grading Policy

HW	30%
Exam	35%
Project	35%

Attendance Policy

Students are encouraged to attend the class in person. Attendance will be checked randomly during the semester, but will not be counted toward the final grade.

Academic and Research Honesty/Integrity Statement

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 the Student Code of Conduct and the Academic Honor Code, especially Appendix A: Graduate Addendum to the Academic Honor Code.

Students are expected to perform research in an ethical and responsible manner. All Doctoral and Master's Thesis students are required to take the Responsible Conduct of Research training, and it is expected that students abide by the principles taught in that training while performing research for this thesis course.

Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct.

Core IMPACTS

Not applicable.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services 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.

Expectations of Advisors and Advisees

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 Expectations of Advisors and Advisees articulates 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.