MSE 3225 Syllabus

Rheology, Section A, 3 credit hours

Fall 2026

Instructor Information

Instructor: Meisha Shofner

General Course Information

Description

Introduction to non-Newtonian fluid mechanics and rheology.

Course Learning Outcomes

By the end of this course, a student should be able to:

1) Mathematically describe fluid flows and apply the appropriate simplifying assumptions
2) Construct tensors to describe flows
3) Explain how rheological properties are measured
4) Critically assess experimentally measured data
5) Apply viscoelastic property data to explain material behavior
6) Choose and apply constitutive models to flows and experimental data
7) Identify how rheology is used outside of an academic setting

Required Course Materials

Understanding Rheology, Faith A. Morrison, Oxford University Press (2001).

Grading Policy:

In this course the following graded assessments and assignments are used to determine the course grade:

Participation Activities	10%
Homework	25%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	20%

Your final grade will be assigned as a letter grade according to the following scale:

90-100%	not less than A
80-89%	not less than B
70-79%	not less than C
60-69%	not less than D

Course Policies

Attendance and/or Participation

Your academic success will depend strongly on the level of engagement with the course material. Actively participating in all lectures and taking advantage of other learning opportunities offered (e.g. assignments, office hours) is critical for successful attainment of the learning outcomes. The participation activities portion of the grade will be assessed using exercises that are either embedded in the lectures, assigned as pre-work, or assigned as post-work. These activities can be completed asynchronously, but they will only be available for specified time blocks. The Georgia Tech Catalog describes policies around "approved Institute activities" (e.g., field trips and athletic events) and accommodations around religious observances.

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.

Cases of suspected 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

Not applicable for this 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.