Georgia Institute of Technology
George W.Woodruff School of Mechanical Engineering
ME3017, SYSTEM DYNAMICS
Fall 2026

Professor:	**Dr. Nader Sadegh** Office: MARC 475, Tel: (404) 894-8172 Office Hours: M11am-12pm, W3pm-4pm, or by appointment
Grader:	TBD grader@gatech.edu Office Hours TBD
Prerequisite:	Prerequisites: MATH 2403, ME2202, and ECE3710.
Scope:	Mathematical modeling and simulation of dynamic systems with mechanical, hydraulic, thermal and/or electrical elements. Frequency response analysis, stability, and feedback control design of dynamic systems.
Required Text:	*System Dynamics* by Palm, William J., III, 3rd Edition, McGraw-Hill College, 2009.
Additional References:	[1] *System Dynamics* by K. Ogata, 4/ed, Prentice-Hall, 2004. [2] J.L. Shearer and B.T. Kulakowski, *Dynamic Modeling and Control of Engineering Systems*, Mcmillan Publishing Company, 1990. [3] Kuo, B.C., *Automatic Control Systems*, 7/ed, Prentice Hall, 1995. [4] Nise, S. N., Control Systems Engineering, 6th Edition, Wiley, 2010. [5] *Solving Control Engineering Problems with MATLAB* by K. Ogata, Prentice-Hall, 1994 (MATLAB Reference).
Computer Usage:	The MATLAB program will be used as a supplementary software program for this course.
Grading Policy:	Weekly Online Quizzes……..…….....….. ..30% Class Participation…….5% Midterm Exam…….20% Final Exam…….....……..…. ..35% Homework……..…….…. ..10%

Tests: There will be weekly online quizzes every Friday. The Quiz will be timed (<20 minutes) and will be available for 12 hours after the class. There will be an online Midterm exam on. The midterm will be timed (60 minutes long) and available for 12 hours on Canvas. Both quizzes and midterm are open-book and notes.

Homework: The homework sets will be assigned weekly and constitute roughly 10% of your total course grade. Solutions to the selected problems will be posted on Canvas. Some homework assignments may require usage of MATLAB.

Final Exam: The final exam will be given during the institute's scheduled day. The final exam will be comprehensive and constitutes 35% of your total grade. It will be offered online and will be available for at least 12 hours.

Letter Grades: The following grades are guaranteed based on your overall score out of 100:

90.0% +	A
80.0% +	B
70.0% +	C
65.0% +	D
< 65%	F

Academic Honesty

The Student Conduct Code is described in the current Georgia Tech General Catalog. All items in the Honor Code under the topic of Academic Misconduct apply to this class. In particular, the following items are considered to be cheating:

- Submission of a computer program that is copied from another student
- Communicating with classmates or others during the online quizzes and exams.
- Copying from another student's paper during an exam
- Alteration of graded tests submitted for regarding.

Academic misconduct will be reported to the Vice President for Student Affairs as described in the General Catalog.

Course Homeworks/Assignments/Papers
All course assignments will be submitted electronically via Canvas. *Point students to where these can be found in Canvas. If your students are expected to submit physical artifacts, share information on how they will be able to do this.*

Exam Proctoring *(if applicable)*
This course will use digital proctoring for exams (*indicate all or some of the exams)*. The following are required of students:

- Include important Honorlock technical requirements.
- Students must have a broadband internet connection
- Students must have a webcam and microphone
- Students must have a secure private location to take an exam
- Students will be asked to provide a picture ID and take a picture of themselves via a webcam as part of the exam process
- Honorlock is not compatible with Linux OS, Virtual Machines, tablets, or smartphones
- Honorlock requires the installation of Google Chrome and the Honorlock Chrome extension

Course Attendance Structure:
Communicate to your students how class sessions will take place (synchronously, asynchronously or in-person). In case of in-class attendance, communicate your schema with which students are expected to attend in person (unless you have a large enough classroom space that can hold all your students in a physically distanced manner.) When students are not attending class in person, how should they engage in the course (e.g. remotely through live synchronous broadcast, complete specific course work asynchronously)