AE 8803 - Syllabus

Topics in Engineering Practice. 3 Credit Hours.

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General Information

Description

Graduate-level topics of current importance offered in collaboration with an approved partner of Georgia Tech's Distance Learning Program.

Pre- &/or Co-Requisites

Co-Requisite AE 4753. Cannot receive credit for AE 6744 and ME 6744 or ECE 6744.

Course Goals and Learning Outcomes

By the end of this course, students will be able to:

- Bridge the gap between graduate engineering education and applied methods used in industry.
- Deploy graduate-level technical competence and problem solving skills in aerospace engineering to solve complex engineering problems of relevance to industry.
- Communicate engineering and research solutions in a manner appropriate for an industrial setting.

Course Requirements & Grading

Note: Graded components of a course may vary with each offering. The example below is typical but subject to change.

Description of Graded Components

Homework assignments, approximately weekly, are to be completed and submitted electronically prior to the next class. Homework assignments consist of a complex technical problem to be solved by the student and documented in either a formal technical report, a design study summary, or a problem set, as specified on the class schedule. Weekly assignments typically require between 12 and 15 hours of effort to complete the technical solution and report.

Typical Homework Report Rubric Weighting:

- Abstract 10%
- Assumptions 5%
- Results 25%
- Analysis 30%
- Discussion 20%
- Report Quality 10%

In addition, each week, a team of 2-3 students will be assigned on a rotating basis to present a 30-minute report-out of the homework solution to the class, instructors, staff, and other invited subject matter experts.

Grading Scale

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

A	90-100%
B	80-89%
C	70-79%

D	60-69%
F	0-59%

Topics Covered

This course covers common applied methods and tools that are used by industry in real engineering applications. The topics vary by course offering, but some sample topics may include:

- Advanced fluid and thermodynamics, incl. 3D, unsteady, and supersonic flows
- Aerospace engine cycle analysis, incl. off-design and transient performance
- Material behavior, selection, processing, and manufacturing
- Robust design and optimization
- Structural elements, elasticity, stress concentrations
- Cycle fatigue, failure modes, probabilistic lifting
- Reliability engineering and testing
- Fracture mechanics
- Vibrations and seismic performance

Weekly lecture presentations and homework assignments will be made available. There are no textbooks required for this course, but students are free to utilize any texts or other outside resources they wish, unless specifically directed otherwise by instructor or course staff.

Course Materials

All required classroom/lab materials, computer equipment, software, and other course supplies are provided by the instructor. Students are free to use any other learning aids, textbooks, or supplies as they wish, unless specifically directed otherwise by instructor/staff and provided it does not violate policy.

Attendance Policy

Attendance policy varies with course offering and partner organization.

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.