AE 8900 Special Topics

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Class Objectives

The main objective of this course is to have students fully explore a problem of interest. By doing this, students will be able to further develop their problem solving, critical thinking, and managerial skills to the standards of an M.S. graduate from the School of Aerospace, Georgia Tech. To accomplish this, the student will identify, research, model, and analyze a relevant problem of interest to be defined in collaboration with their instructor. There are several secondary objectives for this course, including: developing presentation and writing skills, submitting deliverables in a timely manner, and successfully interacting with your instructor. Also, students are encouraged to publish their work at the end of the term at a conference or in a journal.

Class Structure

There is no official lecture time for this course. The instructor and student will arrange frequent interactions (minimum weekly) as needed.

Grade Breakdown

Final Report	50%
Final Presentation	40%
Weekly Updates	10%

Expectations of Students

Students are expected to commit a level of effort to the course equivalent to the number of credit hours it provides. A report and a presentation documenting the work performed are due at the end of the academic term in which the student has enrolled in this class. The student is expected to do all the research work individually and without the external assistance of others unless otherwise approved. The student is expected to abide by Georgia Tech's honor code. The research performed must:

- Demonstrate knowledge of the research area selected
- Contribute knowledge, tools or methods to the research area selected
- Be applicable to other aerospace applications beyond that demonstrated in the research
- Be of interest to the student
- Be of interest to the instructor
- Challenge the student and push the research envelope

Expectations of the Instructor

The instructor will provide guidance and review the work performed. The instructor will interact with the student on a regular basis.

Report Details

Abstract

The report itself must include a 100 to 300 word abstract after author name and before the nomenclature. The abstract is significantly shorter than the executive summary and is part of the report (the executive summary is a separate document).

Literature Review

Your report must include a thorough review of relevant work in the literature. An average report is expected to have no less than 15 quality, vetted sources (not websites!)

Report Expectations

There is no strict requirement or constraint on the length of the paper. Although adequate length varies slightly from project to project reports are typically between 10 and 15 pages, including images and references, using a conference style paper template, AIAA conference style is suggested. Like all technical reports, your paper should balance conciseness versus detail so as to convey the ideas of your Special Problems project succinctly. Avoid verbose and repetitive language. The paper must address the following creatively in an order that makes sense:

- What is the problem to be addressed?
- What motivates interest? Why is it important? Why is it hard?
- How is it done today, by whom, and what is wrong with it?
- How do you propose to address it?
- What is the new idea here, and why can we succeed now but not before?
- Who cares and what is the quantified value if successful?
- What was your plan, organization, and approach?
- What were the biggest challenges and why?
- Describe the research achievements.
- What were the outcomes of your research?
- What are the lessons learnt from this research effort?
- What are suggestions for furthering this research?

Presentation Details

You must provide a 25-minute presentation at the end of the academic term. The presentations are usually scheduled to take place before final's week. The presentation should cover all the main elements of your work, and should answer the questions provided above.