AE427 Aerospace System Design

Course Objectives:

1. To equip students with state-of-the-art knowledge and techniques to enable them to formulate, design, integrate and solve problems involving aerospace system design.
2. To provide students with an opportunity to the use of software programs specific to aerospace system design as well as devise and implement their own numerical techniques for the analysis and design of an aerospace system.
3. To enable students to develop high communication skills and the ability to function well in multidisciplinary teams.

Students Learning Outcomes:

For Course Objective 1:

1. Apply their knowledge of aerodynamics and astrodynamics related fields in the conceptual design of an aerospace system.
2. Make intelligent and informed decisions based on available choices in design that help realize a conceptual design.
3. Ability to perform trade studies using state-of-the-art techniques such as carpet plots and sizing matrix
4. Ability to analyze results and draw meaningful conclusions within a team workframe.

For Course Objective 2:

1. Use a programming language (MATLAB, FORTRAN, C++, etc.) to accomplish various design issues.
2. Ability to use state-of-the-art software programs specific to aerospace system design as well as their own numerical techniques to solve design related problems.

For Course Objective 3:

1. Function well in team projects through mutual organization, coordination and integration.
2. Ability to effectively express and apply various ideas and techniques.
3. Improved communication and organizational skills through high level of professional presentation and well-organized written project report.