

AE 6372 - Syllabus

Aerospace Systems Engineering- 3 Credits

General Information

Description

Introduction to aerospace systems engineering. Systems engineering and quality engineering methods and tools. Top-down design decision support processes, computer integrated environments, Integrated Product/Process Development (IPPD).

Pre- &/or Co-Requisites

No pre-requisite

Course Goals and Learning Outcomes

Upon completion of this course students will be able to:

- Define all elements of Systems Engineering
- Follow a structured approach to systems thinking
- Identify, understand, and use Systems Engineering tools, including Model Based Systems Engineering
- Apply Systems Engineering thinking and tools, including MBSE, in the context of a complex multi-disciplinary semester long group project

Course Requirements & Grading

Description of Graded Components

Component	Percent	Description
Homework	20%	Weekly individual assignments applying systems engineering tools
Participation	15%	Weekly questions and contributions online or through Canvas discussion board
Quizzes	30%	Weekly assessment of key systems engineering concepts
Team Project	35%	Application of systems engineering thinking and tools in the context of a complex multi-disciplinary semester long group project

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

- Systems Engineering Definitions and Need
- Integrated Product and Process Development
- Project Scoping

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- Quality Function Deployment
- Requirements Definition and Analysis
- Model Based Systems Engineering
- Morphological Analysis
- Trade studies
- Sensitivity Analysis
- Risk Identification and Management
- Design Under Uncertainty, Robust Design and Six Sigma
- Product Life-cycle Management

Course Materials

Course notes

Course notes provided through Canvas