



Advanced Space Propulsion

AEROENG 5752

Credit Hours:

3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Analysis of different propulsion techniques for access to space and inter-planetary flight: liquid, solid, hybrid, nuclear and electric. Emphasizes fundamentals based on physics and mathematics.

Prerequisites and Co-requisites:

Prereq: 4550 (550), or permission of instructor.

Course Goals / Objectives:

- Give senior level and graduate students a basic understanding of rocket propulsion
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Course Topics:

- Basic considerations: types of engines and fuels, applications
 - Fundamentals: Governing equations
 - Metrics used for rocket propulsion
 - Thermodynamics of nozzle flows
 - Practical considerations: Heat transfer
 - Rocket performance evaluation and analysis
 - Combustion chemistry
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Designation:

Elective