## Aero 530: Turbojet Propulsion

<table>
<thead>
<tr>
<th>COURSE #: AE 530</th>
<th>COURSE TITLE: TURBOJET PROPULSION</th>
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<tbody>
<tr>
<td>TERMS OFFERED: Winter</td>
<td>PREREQUISITES: Aero 430.</td>
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<td>INSTRUCTOR(S): Driscoll</td>
<td>SCIENCE/DESIGN CREDITS: 2/1 (elective course)</td>
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### CATALOG DESCRIPTION:

Advanced analysis of turbojet engines: effect of altitude parameters on engine performance; off-design equilibrium running of a turbojet engine; dynamics of engine considered as a quasi-static system; fluid mechanics of a rotating axial blade row; centrifugal compressors; transonic flow problem.

### COURSE TOPICS:

1. Overview of engine operations.
2. Shaft Power Cycles.
3. GT Cycles for Aircraft.

### COURSE OBJECTIVES

1. To have students develop a detailed understanding of the components of a typical turbojet engine.
2. To have student understand the physical processes involved in the operation of turbojets.
3. To teach students methods to size and design components as well as perform integration of an engine system.

### COURSE OUTCOMES

At the completion of Aero 530 the students can

1. Determine the approximate use parameters of an existing gas turbine engine. (Assessed by 1,2)
2. Create a preliminary design of a gas turbine engine in order to perform a given function. (Assessed by 1,2)

### ASSESSMENT TOOLS

1. Individual homework.
2. Design project report.

Updated: May 2005