<table>
<thead>
<tr>
<th>Course Title</th>
<th>Fluid Mechanics II</th>
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<tbody>
<tr>
<td>Course Code</td>
<td>MME 316</td>
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<tr>
<td>Course Type</td>
<td>Compulsory</td>
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<tr>
<td>Level</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>Year / Semester</td>
<td>3rd Year / 6th Semester</td>
</tr>
<tr>
<td>Teacher’s Name</td>
<td>Triantafyllos Stylianopoulos</td>
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<tr>
<td>ECTS</td>
<td>6</td>
</tr>
<tr>
<td>Lectures / week</td>
<td>3+1 hours</td>
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<tr>
<td>Laboratories / week</td>
<td>1 hour</td>
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**Course Purpose and Objectives**
This course is a continuation of Fluid Dynamics I. The course objective is to teach students how to solve independently fluid mechanics problems related to fluid pumps and power engines.

**Learning Outcomes**
- Understand the properties of boundary layers.
- Understand similarity laws and perform dimensional analysis for engineering problems.
- Formulate and solve basic problems in fluid mechanics. Including networks of internal and external flows.
- Analyze simple compressible flow systems and understand the concepts of subsonic, sonic, supersonic and hypersonic flows.
- Understand the operation of power engines such as pumps & fans.
- Familiarize with modeling and experimental techniques used in fluid dynamics.

**Prerequisites**
MME 216 Required None

**Course Content**

**Laboratory Exercises**
- Hydraulic gradient in a pipe network
- Pump performance & operational envelopes
- Experimental techniques in fluid dynamics (measurement in a BL with hot wires, pitot tubes, venture meters)
### Teaching Methodology
- Lectures
- Tutorial sessions
- Laboratory assignments
- Demonstrations
- Communicative, Collaborative
- During the first week of the semester the students receive the course syllabus, which includes the course content, bibliography, learning outcomes, assessment and office hours.

### Bibliography
- Course notes

### Assessment
- Laboratory reports 15%
- Assignments 10%
- Midterm exam 25%
- Final exam 50%

### Language
Greek