



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
MENG-280	Fluid Mechanics	6
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
MATH-330	Engineering	Fall, Spring
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Required	Engineering	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
1 <sup>st</sup> Cycle	Prof Dimitris Drikakis	2 <sup>nd</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Corequisites</b>
Face-to-face	N/A	None

### Course Objectives:

The main objectives of the course are to:

- Introduce the student to the science and practice of Fluid Mechanics.
- Develop an understanding of the basic equations governing the mechanics of fluid flows.
- Analyze a variety of fluid flow problems.
- Relate physical laws to practical applications.
- Use of the computer as a problem solving tool.

### Learning Outcomes:

After completion of the course students are expected to be able to:

- Apply knowledge of mathematics, science and engineering.
- Design a system, component, or process to meet desired needs.
- Identify, formulate, and solve engineering problems.
- Understand the impact of engineering solutions in a global and societal context.
- Use techniques, skills, and modern engineering tools necessary for engineering practices.
- Apply the knowledge of differential equations, and multivariate calculus to mechanical engineering design and analysis problems.
- Demonstrate the ability to write simple computer programs or use already developed software in analysis and design of engineering systems

**Course Content:**

- Fundamental Concepts,
- Fluid Statics, Basic Equations in Integral Form
- Open-Channel Flow
- Bernoulli's Equation,
- Dimensional Analysis
- Incompressible Viscous Flow
- Pipe Friction
- Boundary Layers

**Learning Activities and Teaching Methods:**

Lectures, in-class examples, discussion.

**Assessment Methods:**

Homework, project assignments, tests, final exam.

**Required Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Fluid Mechanics	Robert W. Fox, Alan T. McDonald, Philip J. Pritchard	Wiley	2011	978-1-118-02641-0

**Recommended Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Engineering Fluid Mechanics	Clayton T. Crowe	Wiley		9780470409435