UNIVERSITY of NICOSIA

University of Nicosia, Cyprus

Course Code	**Course Title**	**ECTS Credits**
CEE-341	Fluid Mechanics	6
Department	**Semester**	**Prerequisites**
Engineering	Fall, Spring	MATH-330, PHYS-140
Type of Course	**Field**	**Language of Instruction**
Required	Civil & Environmental Engineering	English
Level of Course	**Year of Study**	**Lecturer(s)**
1st Cycle	3rd	Dr Constantinos Hadjistassou
Mode of Delivery	**Work Placement**	**Co-requisites**
Face-to-face	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- Identify and obtain values of fluid properties and relationship between them.
- Understand the principles of continuity, momentum, and energy as applied to fluid motions.
- Recognize these principles written in form of mathematical equations.
- Apply these equations to analyze problems by making good assumptions and learn systematic engineering method to solve practical fluid mechanics problems.
- Apply fundamental principles of fluid mechanics for the solution of practical civil engineering problems of water conveyance in pipes, pipe networks, and open channels.

Learning Outcomes:

After completion of the course students are expected to:

- Apply fundamental knowledge of mathematics to modeling and analysis of fluid flow problems in civil and environmental engineering.
- Conduct experiments (in teams) in pipe flows and open-channel flows and interpreting data from model studies to prototype cases, as well as documenting them in engineering reports.
- Understand or become aware of disasters caused by an incorrect analysis in hydraulic engineering system

Course Contents:

- Properties of fluids
- Fluid statics

- Fluid in motion and the conservation of mass
- Pressure variation in flows
- Momentum and energy principles
- Bernulli equation
- Navier-Stokes equations
- Dimensional analysis and similitude
- Application in civil engineering: pipe flow, pipe networks, and open channel analysis

Learning Activities and Teaching Methods:

Lectures, Projects, Discussion

Assessment Methods:

Homework, Project assignments, exams, final exam.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
F.M.White	Fluid Mechanics, 7th edition	McGraw Hill Book Co.	2008	978-007-352934-9
B. Munson,	Fundamental in Fluid Mechanics, 7th edition	John Wiley & Sons	2013	978-1118116135

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Daughetry, Franzini and Finnemore	Fluid Mechanics with Engineering Application	McGraw Hill Book Co.	1977	0471956643