

SYLLABUS

Basic data of the course:	
University/Faculty:	University of Applied Sciences in Ferizaj/ Faculty of Engineering and Informatics
Academic unit:	Faculty of Engineering and Informatics
Course title:	Fluid Mechanics
Level:	Bachelor
Course status:	Obligatory
Year of studies:	II
Number of hours per week:	2+2
Value in credit – ECTS:	6
Time / location:	9.00 – 12.15 / Amphitheater
Course teacher:	Mr.sc. Ismet Malsiu
Contact details:	Laboratory no.1, tel. 044 225 208, ismetmalsiu@hotmail.com, ismet.malsiu@uni-pr.edu
Course description:	
	<p><i>Introduction and Physical Properties of Fluids; Fluid static; Pressure gauges; Pascal's Law; Communication vessels and hydraulic presses, Pressure force on planar and curved surfaces; Hydrostatic propulsion, Body swimming and relative calm; Fluid Kinematics; Fluid dynamics; Bernoulli's equation; Fluid movement regimes; Characteristics of the laminar regime; Characteristics of the turbulent regime; Fluid energy loss during movement; Steady flow of fluid through the tubes; Pressure flow; Simple tube; Composite tubes; Cavitation flow; Characteristics of the turbulent regime; Unstable flow; Hydraulic shock through simple pipes; Hydraulic shock propagation speed; Avoiding hydraulic shock; Hydraulic rails; Stable current; Free-flow trajectory; Hydraulic current forming equipment; Fluid flow through holes; Hydraulic calculation of small holes; Hydraulic calculation of large holes; Fluid flow with altered level; Fluid flow through the nostrils; Hydraulic nozzle account; cavitation; Dynamic action of currents; Quantity of motion theorem; Dynamic current strength; Current power in active turbine; Similarity Theory and Dimensional Analysis; Elements of dimensional analysis; Similarity of hydraulic systems; Similarity criteria and modeling basics; General knowledge of the faculty laboratory and practical CD examples</i></p>
Aim of the course:	<i>Introducing students to the physical properties of fluids; Fluid static; Paschal Law; The force of</i>

	<i>pressure on planar and curved surfaces; Fluid Kinematics; Fluid dynamics; Bernoulli's equation; Fluid movement regimes; Hydraulic shock; Flowing fluid through holes; Fluid flow through the nostrils; cavitation; The quantity theorem of motion; Dynamic power of current; Current power in active turbine; Similarity Theory and Dimensional Analysis; Elements of dimensional analysis; Similarity of hydraulic systems; Similarity criteria and basics of modeling. Students should also be familiar with the faculty lab and practical CD examples etc.</i>
Expected outcomes from learning:	<p><i>After completing this course the student will be able to know about:</i></p> <ol style="list-style-type: none"> <i>1. Physical properties of fluids;</i> <i>2. fluid static;</i> <i>3. fluid dynamics;</i> <i>4. Hydraulic losses through pipes;</i> <i>5. Hydraulic shock;</i> <i>6. Fluid through holes;</i> <i>7. Quantity of motion theorem;</i> <i>8. Similarity theory and analysis dimensional;</i> <i>9. Similarity criteria and basics of modeling;</i> <i>10. Solving theoretical problems and practical, etc.</i>

Student contribution (which should correspond to the student's learning)			
Activity	Activity	Activity	Activity
Lectures	2	15	30
Theoretical / laboratory exercises	2	15	30
Practical work	-	-	-
Contacts with the teacher / consultations	0.5	15	7.5
Field exercises	-	-	-
Tests, seminars	2	2	4
Homework	1	15	15
Student self time study	2	15	30
Final exam preparation	2	15	30
Time spent in evaluation (tests, quizzes, final exam)	1	2	2
Projects, presentations,etc	0.5	2	1
Total			149.5

Teaching methodology:			
<i>lectures, seminars, discussions, group work</i>			
Evaluation methods:			
		<i>First evaluation by written test:</i>	15 %
		<i>Second evaluation by written test:</i>	20 %
		<i>Homework or other commitments:</i>	15 %
		<i>Regular attendance:</i>	5 %
		<i>Final exam:</i>	45 %
		<i>Total:</i>	100 %
Literature			
Basic literature:		„MEKANIKA E FLUIDEVE” , Tiranë 2006, Antonaq Londo, Robert Plumbi.	
Additional literature:		<ol style="list-style-type: none"> 1. MEKANIKA E LANGJEVE , Tiranë 1883 Sylejman Xhelepi 2. PËRMBLEDHJE DETYRASH TË MEKANIKËS SË FLUIDEVE , Prof.dr.sc. Fejzullah Krasniqi, Mr.sc. Januz Bunjaku,Mr.sc. Xhemajl Fejzullahu, Inxh. i dipl.Ismet Malsiu, Prishtin,1996 3. HIDRAULIKA DHE TERMODINAMIKA, Prishtinë, 1998, Mr.inxh.XHEMAJL FEJZULLAHU, Dr.inxh.FEJZULLAH KRASNIQI 4. “FUNDAMETALS OF FLUID MECHANICS”, Munson/Young/Okiishi me Cd, USA 2002 	
Designed lesson plan :			
Week	The lecture to be held		
Week one:	<i>Introduction and physical properties of Fluids .</i>		
Week two:	<i>Static fluid.</i>		

Week three:	<i>Pressure gauges; Paschal Law; Communication vessels and hydraulic presses; The force of pressure on planar surfaces</i>
Week four:	<i>Pressure force on planar and curved surfaces; Hydrostatic propulsion; Swimming of troops and relative calm.</i>
Week five:	<i>Fluid Kinematics.</i>
Week six:	<i>Fluid dynamics; Bernoulli equation.</i>
Week seven:	<i>Fluid movement regimes; Characteristics of the laminar regime; Characteristics of the turbulent regime.</i>
Week eight:	<i>Fluid energy loss during movement; Longitudinal hydraulic losses; Local hydraulic losses.</i>
Week nine:	<i>Steady flow of fluid through the tubes; Pressure flow; Simple tube; Composite tubes; Cavitation flow; Characteristics of the turbulent regime.</i>
Week ten:	<i>Unstable flow; Hydraulic shock through simple pipes; Hydraulic shock propagation speed; Avoiding hydraulic shock.</i>
Week eleven:	<i>Hydraulic rails; Stable current; Free-flow trajectory; Hydraulic current forming equipment; Fluid flow through holes; Hydraulic calculation of small holes</i>
Week twelve:	<i>Hydraulic calculation of large holes; Fluid flow with altered level; Fluid flow through the nostrils; Hydraulic nozzle account; Restriction on use of cylindrical nozzle; Kavitation,.</i>
Week thirteen:	<i>Dynamic action of currents; Quantity of motion theorem; Dynamic current strength; Current power in active turbine.</i>
Week fourteen:	<i>Theory of similarity and dimensional analysis; Elements of dimensional analysis; Similarity of hydraulic systems; Similarity criteria and basics of modeling.</i>
Week fifteen:	<i>Knowledge of general laboratoriumin with the faculty and practical examples from the CD.</i>

Academic policies and rules of conduct

Assign comfort USHAF status of the conduct policy.

The teacher sets the criteria for regular attendance at lectures and exercises and rules of conduct such as: keeping calm in class, switching off cell phones, entering the room on time, etc.