



UNIVERSITETI / UNIVERSITY
"ISA BOLETINI"
MITROVICË

Course Curriculum Model (Syllabus)		
Faculty:	FACULTY OF MECHANICAL AND COMPUTER ENGINEERING	
Department:	Mechanical Engineering	
Level:	Bachelor	
Code of the course:	304 ME	
Course:	HYDRAULICS AND PNEUMATICS SYSTEMS	
Course Status:	Mandatory	Mandatory/Elective
Semester:	(V)	Winter/Summer
Number of hours per week:	2+2	
ECTS:	5	
Time / location:	Wednesday, 9 ⁰⁰ -10 ³⁰ , K5	
Year of studies:	2024/2025	
Lecturer:	Mr Melihate Shala	
Assistant:		
Contact details:	Professor	Assistant
Email:	meilahet.shala@umib.net	
Telephone:		
Course description	This course provides an in-depth exploration of hydraulics and pneumatics, covering the physical properties of fluids, hydrostatics, kinematics, dynamics, and the design of hydraulic and pneumatic systems. The course also delves into control systems, including electro-pneumatic and electro-hydraulic systems, with hands-on training on industry-standard equipment and dynamic simulation.	
	The course aims to combine theoretical knowledge with practical skills, making participants proficient in the design, control, and troubleshooting of fluid power systems. The hands-on and simulation components ensure that participants are not only knowledgeable but also capable of applying their skills in diverse industrial contexts.	
	By completing this module, the student should be able to: Understand the main components of the hydraulic, pneumatic and electro-pneumatic and electro-hydraulic systems. Design hydraulic and pneumatic circuits. Design and understand the electro-hydraulic and electro-pneumatic circuits.	

Weeks	Lecture
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P r o g r a m	<i>First week:</i>	Hydraulics, physical properties of fluids
	<i>Second week:</i>	Hydrostatics, kinematics and dynamics of fluids
	<i>Third week:</i>	Elements of hydraulic systems
	<i>Fourth week:</i>	Design of hydraulic systems
	<i>Fifth week:</i>	Pneumatics, physical properties of gases
	<i>Sixth week:</i>	Air preparation group
	<i>Seventh week:</i>	Elements of pneumatic systems, high pressure pneumatics
	<i>Eighth week:</i>	Elements of pneumatic systems
	<i>Ninth week:</i>	Pneumatic control system
	<i>Tenth week:</i>	Electro pneumatic, attic and electro hydraulic systems, elements and their design
	<i>Eleventh week:</i>	Training table TP 101 and 201 Pneumatic and hydraulic
	<i>Twelfth week:</i>	Training tables TP 501 and 601 .Electro-pneumatic and electro-hydraulic
	<i>Thirteenth week:</i>	Electro-pneumatic and electro-hydraulic equipment, Dynamic simulation of control systems
	<i>Fourteenth week:</i>	Solution of examples from industry
	<i>Fifteenth week :</i>	Summaries and discussions

Literature	
L i t e r a t u r e	1. Anthony Esposito; "Fluid Power with Applications" Prentice-Hall International, 2020. 2. Peter Croser, Frank Ebel, "Pneumatics and hydarulics" , FESTO, 2008 Course 3. A.Pajaziti "Sistemet hidraulike dhe pneumatike", FIM, Prishtine 2022, 4. J. W. Lewis,"Modeling Engineering Systems", LLH Technology Publisjhing, 2024.

Teac hing meth odol ogy	The teaching methodology for the HYDRAULICS AND PNEUMATICS SYSTEMS course may involve a combination of the following			
	Contribution to student workload (which should correspond to student learning outcomes - 1 ECTS credit = 25 hours)			
	Activity	Hours	Days/weeks	Total
	Lectures	2	15	30
	Exercise sessions (with TA)	2	15	30
	Practical work	3	3	9
	Office hours	1	15	15
	Fieldwork	1	2	2
	Midterms, seminars	2	2	4
	Homework	3	2	6
	Self-study	4	3	12
	Final exam preparation	3	3	9
	Time spent in exams	2	2	4
	Projects, presentations, etc.	2	2	4
Total				125

E v a l u a t i o n	Lectures, exercises, individual work, experimental work, seminar papers, colloquia, essays, field work, group work, etc. Completed according to the specifics of your subjects!		
	Tests / Colloquia (First Test) (Second test)	15%	15%
	Practical test during exercises (Essay)		
	Workshop seminar		
	Interpretation and presentation of artistic creativity and other works.		
	Assignments and courses during the semester	15%	
	Professional practice		
	Other,(Specify) Participation	10%	
	Final exam	45%	
	Total	100%	
	Final grade	Points (%)	Mark
		91 – 100	10
		81 - 90	9
		71 - 80	8
		61 - 70	7
		51 - 60	6

Criteria for regular attendance and rules of etiquette during the organization of the lesson are set.

Computer work:

Graphic works, I have to draw and write with a computer. In the works it is obligatory to respect the criteria for both the visual and the content aspect of the required works.

Ethics in teaching:

Graphic works should be personal works of each student. There will be no tolerance for copying, "borrowing" from the Internet or any other material. The same or similar works will have negative evaluations in the final evaluation of the student.

Time:

In agreement with the students, the deadlines for submitting works will be determined. There will be no tolerance for delays in the submission of works. Failure to arrive at the time when the assignment is explained does not justify the student for not submitting the paper. The deadline will be given earlier. If you are going to travel abroad, then you need to submit the paperwork in advance. The student has the right to request a consultation with the professor whenever he / she deems it reasonable and necessary for the performance of his / her work.

Rules of conduct and academic policies:

- active participation of students in lectures o participation in discussion, comments and free expression of opinion, opinion and academic position (with arguments)
- Mandatory independent work and use of additional sources of information (various scientific websites, scientific journals, conference proceedings, etc.)
- Respecting lecture schedules without compromising academic freedom (silent cell phones) of respecting the word, thoughts and ideas of colleagues,
- It is not allowed to arrive late and leave without a valid reason from the lecture, test or exam o preparation and holding of relevant lectures, (obligation of the teacher).
- if the student is absent more than four times without reason in lectures and exercises, does not receive the signature for attendance. o the student cannot take the exam without an official document,
- if the student is dissatisfied with the grade obtained, has the right to complain in writing to the dean, within two working days after the announcement of the results, UMIB Statute o if the student does not follow the rules, in the exam uses tools that are not allowed, it is evaluated with a negative grade.

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Mitrovica; 29/04/2023

Mr Melihate SHALA