Knowledge

1. Identify and describe fundamental principles in mathematics and natural sciences as they apply to problem-solving in engineering contexts.
2. Explain fundamental concepts of mechanics, electronics, and computer science in relation to the design and implementation of mechatronic systems.
3. Illustrate how information technology can be used for simulation, system design, project management, and effective communication.
4. Knowledge about the effects of engineering applications on health, environment, and safety on both universal and societal scales; knowledge about current problems affecting the field of engineering; awareness of the legal implications of engineering solutions.

Skills

5. Apply the principles of mechatronics, developed through the engineering sciences, to solve practical problems, system modeling, and design engineering processes and products.
6. Select and apply computer-based methods associated with the modeling and analysis of engineering problems and the design of engineering systems.
7. Demonstrate the ability to develop, choose, and utilize modern techniques needed to analyze and solve problems encountered in the applications of mechatronics engineering.
8. Demonstrate the ability to design and perform experiments, collect and analyze data, and assess results for problems in Mechatronics Engineering.
9. Apply an integrated or systems approach to engineering design and produce innovative solutions to a wide range of engineering problems using established techniques to test and evaluate design ideas.
10. Use time and resource management techniques to meet project management milestones.

Competencies

11. Develop the ability to independently acquire and apply new knowledge and skills in mechatronics engineering, demonstrating a high level of self-directed learning and continuous professional development.
12. Communicate clearly and effectively using evidence, graphics, and writing skills.
13. Keep an open mind to lifelong learning and self-development, adopting a lifelong learning philosophy, following state-of-the-art developments in engineering, and improving oneself.

	Courses	Program Learning Outcomes (PLO)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	
Semester I	Introduction to Physics	I	I												
	Introduction to Chemistry and Environment	I													
	Mathematics 1	I	I							I					
	Introduction to Mechanics	I	I	I											
	Computer Science 1	I	I	I			I								
	Engineering Graphics and CAD		I			I				I					
	a) English, ose b) Gjermanisht			I									I		
Semester II	Fundamentals of Electronic and Electrical Engineering	I	I		I			I							
	Fundamental of Engineering Mechanics	I	I		I			I							
	Mathematics 2	I			I		I								
	Material Science and Engineering		I		I			I							
	Computer Science 2			I		I	I			I					
	Economics and Engineering Management												I	I	
	Laboratory 1		I				I	I							
Semester III	Introduction to Mechatronics		I		I		I		I						
	Digital Circuits and Signals		I		I	I	I								
	Fluid and Thermodynamics		I		I		I	I							
	Software Systems Engineering		I		I	I	I								
	Information Technology					I		I		I	I	I			
	Law, Ethics and Engineering										I		I	I	
	Laboratory 2					I	I	I		I					
Semester IV	Production Automation				I	I			I	I					
	Modelling and Simulation			I		I	I		I	I					
	Control Engineering				I	I	I	I	I						
	Embedded Systems														
	CAD/CAM				I	I		I	I						
	Laboratory 3				I		I	I							
Semester V	Artificial Intelligence				I	I		I	I						
	Embedded Systems														
	Mechatronic Systems				I	I		I				I	I		
	Robotics				I	I		I			I				
	Image Processing					I	I					I			
	Industrial and Organizational Psychology								I	I			I		
	Project Management Engineering								I				I	I	
	Smart Manufacturing and Industrial Internet of Things (IIoT)				I		I					I			
	Scientific and Technical Research					I		I					I		
	Thesis		I	I		I		I	I			I	I	I	