



UNIVERSITETI / UNIVERSITY
"ISA BOLETINI"
MITROVICA

Course Curriculum Model (Syllabus)		
Faculty:	FACULTY OF MECHANICAL AND COMPUTER ENGINEERING	
Department:	Mechanical Engineering	
Level:	Bachelor	
Code of the course:	114 ME	
Course:	Principles Of Electrical/Electronics Engineering	
Course Status:	Elective	Mandatory/ Elective
Semester:	(II)	Winter/ Summer
Number of hours per week:	2+1	
ECTS:	4	
Time / location:	Wednesday, 9 ⁰⁰ -10 ³⁰ , S203	
Year of studies:	2024/2025	
Lecturer:	Prof. Ass. Dr. Muzafer Shala	
Assistant:		
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Telephone:		
C o u r s e d e s c r i p t i o n	This course provides an introduction to the principles of electrical and electronics engineering. The course covers topics such as circuit analysis, electrical components, electronic devices, and applications of electrical and electronics engineering in mechanical systems.	
P u r p o s e (G o a l s)	The purpose of the "Principles of Electrical/Electronics Engineering" course for the program BSc. in Mechanical Engineering is to provide students with an understanding of the fundamental principles of electrical and electronics engineering. The course aims to introduce students to basic circuit analysis, electronic devices, and applications of electrical and electronics engineering in mechanical systems. The course also covers topics such as power, energy, and efficiency in electrical and mechanical systems, as well as electrical safety regulations and guidelines.	

L e a r n i n g o u t c o m e s	<p>Upon successful completion of the course, students will be able to:</p> <ul style="list-style-type: none"> ● Analyze and solve basic electrical and electronic circuits using the principles of voltage, current, and resistance. ● Identify and explain the operation of various electrical components, such as resistors, capacitors, and inductors. ● Describe the properties and operation of basic electronic devices, such as diodes and transistors. ● Understand the principles and applications of electrical and electronics engineering in mechanical systems. ● Analyze and solve problems related to power, energy, and efficiency in electrical and mechanical systems. ● Work safely with electrical equipment and follow electrical safety regulations.
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	Weeks	Lecture
P r o g r a m	First week:	<p>Introduction to Electrical and Electronics Engineering</p> <p>Overview of Electrical and Electronics Engineering</p> <ul style="list-style-type: none"> ● Basic principles of circuits
	Second week:	<p>Circuit Analysis</p> <ul style="list-style-type: none"> ● Voltage, current, and resistance ● Ohm's law and Kirchhoff's laws ● Series and parallel circuits ● Voltage and current dividers
	Third week:	<p>Circuit Analysis</p> <ul style="list-style-type: none"> ● Voltage, current, and resistance ● Ohm's law and Kirchhoff's laws ● Series and parallel circuits ● Voltage and current dividers
	Fourth week;	<p>Electrical Components</p> <ul style="list-style-type: none"> ● Resistors, capacitors, and inductors ● Types of capacitors and inductors ● Capacitor and inductor circuits
	Fifth week: :	<p>Electrical Components</p> <ul style="list-style-type: none"> ● Resistors, capacitors, and inductors ● Types of capacitors and inductors ● Capacitor and inductor circuits
	Sixth week:	<p>Electronic Devices</p> <ul style="list-style-type: none"> ● Diodes and rectifiers ● Bipolar junction transistors (BJTs) ● Field-effect transistors (FETs)
	Seventh week:	<p>Electronic Devices</p> <ul style="list-style-type: none"> ● Diodes and rectifiers ● Bipolar junction transistors (BJTs) ● Field-effect transistors (FETs)
	Eighth week week:	<p>Electrical and Electronics Engineering in Mechanical Systems</p> <ul style="list-style-type: none"> ● Electrical and electronic systems in mechanical engineering ● Electrical control systems in mechanical engineering ● Sensors and transducers

	<i>Ninth week:</i>	Electrical and Electronics Engineering in Mechanical Systems <ul style="list-style-type: none"> ● Electrical and electronic systems in mechanical engineering ● Electrical control systems in mechanical engineering ● Sensors and transducers
	<i>Tenth week</i>	Power and Energy <ul style="list-style-type: none"> ● Power and energy in electrical systems ● Power factor and efficiency ● Electrical power transmission and distribution
	<i>Eleventh week:</i>	Power and Energy <ul style="list-style-type: none"> ● Power and energy in electrical systems ● Power factor and efficiency ● Electrical power transmission and distribution
	<i>Twelfth week:</i>	Electrical Safety <ul style="list-style-type: none"> ● Electrical safety regulations and guidelines ● Working safely with electrical equipment
	<i>Thirteenth week:</i>	Electrical Safety <ul style="list-style-type: none"> ● Electrical safety regulations and guidelines ● Working safely with electrical equipment
	<i>Fourteenth week:</i>	Review and Exam Preparation <ul style="list-style-type: none"> ● Review of course material ● Exam preparation and review
	<i>Fifteenth week:</i>	Review and Exam Preparation <ul style="list-style-type: none"> ● Review of course material ● Exam preparation and review

Literature	
L i t e r a t u r e	<ul style="list-style-type: none"> ● "Electric Circuits" by James W. Nilsson and Susan A. Riedel. Publisher: Pearson; 11th edition (2018). ● "Fundamentals of Electric Circuits" by Charles K. Alexander and Matthew N.O. Sadiku. Publisher: McGraw-Hill Education; 6th edition (2016). ● "Electronic Principles" by Albert Malvino and David Bates. Publisher: Wiley; 8th edition (2017). ● "Principles of Electronic Materials and Devices" by Safa O. Kasap. Publisher: McGraw-Hill Education; 4th edition (2017). ● "Electric Machinery Fundamentals" by Stephen J. Chapman. Publisher: McGraw-Hill Education; 5th edition (2011).

Teaching methodology	The course can be taught using a combination of lectures, in-class discussions, and hands-on activities. The instructor can use visual aids, such as diagrams and animations, to illustrate complex concepts. Students can also work on lab activities to reinforce their understanding of electrical and electronic circuits and devices.			
	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	5	10
	Practical work	2	10	30
	Office hours			
	Fieldwork	1	2	2
	Midterms, seminars	1	1	2
	Homework	3	2	6
	Self-study	1	5	5
	Final exam preparation	3	3	9
	Time spent in exams	1	1	2
	Projects, presentations, etc.	2	2	4
	Total			100

Evaluation	Assessment methodology:		
	Assessment methods can include quizzes, lab activities, homework assignments, and a final exam. The final exam can be comprehensive and cover all course material. The weight of each assessment method should be clearly stated in the course syllabus. Grading rubrics can be provided for each assignment to ensure fair and consistent grading.		
	(according to the Statute and Regulation for studies of UMIB)		
	Tests / Colloquia (First Test) (Second test)	15%	
	Practical test during exercises (Essay)	15%	
	Workshop seminar		
	Interpretation and presentation of artistic creativity and other works.		
	Assignments and courses during the semester	15%	
	Professional practice.	15%	
	Other, Continuity		
	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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Mitrovicë; 29/04/2023

Prof. Ass. Dr. Muzafer Shala