



Меѓународен Универзитет Визион - International Vision University  
 Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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## SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
ELECTRIC CIRCUITS	CEN-2009	4	150	5

Prerequisite(s)	None
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Course Language	Macedonian, Turkish, English
Course Type	Required
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra-Curricular Office Hours and Location	

<b>Course Objectives</b>	Basic concepts of electricity, basic laws, linear circuit solutions, electrical work and power, conversion of electricity to heat, electrochemical phenomena, magnetic fields and their laws, electrostatic field, capacitors, electromagnetic induction, A.A. resistors, work and power in single-phase circuits, three-phase AC generation, star-delta connections and powers.
<b>Course Learning Outcomes</b>	Electricity and electric field, basic concepts, basic laws, linear circuit solutions skills. Electrical work and power, conversion of electricity to heat, electrochemical phenomena, magnetic fields and their laws, electrostatic field, capacitors, application of electromagnetic induction. AA. resistors, work and power in single-phase circuits, three-phase AC production, star-delta connections and powers to learn and apply in practice. Make correct circuits and analysis calculations. Using RLC analytical solution methods.
<b>Course Contents</b>	Electricity and its field, Condensate and capacitance, Classification and properties of electrical circuit elements and circuits, the concept of appropriate circuit analysis and obtaining state equations, exact solution of AC and DC circuits, circuit elements and circuit types, Kirchhoff and Ohm's laws, resistance transformations, alternative current circuits, rheostats and meters. Electromagnetic induction, Ampere's law, Electric generator, electromotor and transformer. RLC simple analysis and solution models.

## WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

<b>Week</b>	<b>Subjects</b>	<b>Related Preparation</b>
1	Electricity and electric field	Related Chapters of Course Sources
2	Capacitors and capacitance	Related Chapters of Course Sources
3	Direct current, Ohm's and Joule's Law	Related Chapters of Course Sources
4	EMF and electricity sources.	Related Chapters of Course Sources
5	Electrical circuit solutions - Superposition method	Related Chapters of Course Sources
6	Electrical circuit solutions - Theve's theorem	Related Chapters of Course Sources
7	Midterm	Related Chapters of Course Sources
8	Magnet field and Ampere's law	Related Chapters of Course Sources
9	electromagnetic induction	Related Chapters of Course Sources
10	Electric generator and electric motor	Related Chapters of Course Sources
11	Transformers	Related Chapters of Course Sources
12	RLC circuits and analytical solutions	Related Chapters of Course Sources
13	AC Complex circuit solutions	Related Chapters of Course Sources
14	Solution modal and analysis of RLC circuits with the help of simulator	Related Chapters of Course Sources
15	Final exam	Related Chapters of Course Sources

## ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
<b>Total Work Load</b>			
<b>ECTS</b>		<b>5</b>	

## GENERAL PRINCIPLE RELATED WITH COURSE

Dear Students,

In order to be included in the lesson, learn the lesson fully and achieve the success you deserve, you must come to each lesson prepared by reading the sections related to the subjects to be covered from the basic and supplementary textbooks. We expect you to meticulously comply with the lesson hours, not to interrupt the lessons unless it is absolutely necessary, to participate actively in the lesson, to communicate fully with your teacher and classmates, and to be active by participating in the discussions in the class. Unethical behaviors that may occur both in classes and in exams will be acted upon within the framework of the relevant regulation. Attendance will be taken at the time your teacher requests, at the beginning, middle or end of each lesson. Students who attend all classes during the semester will be given a 15-point attendance grade in addition to the exam grade.

## SOURCES

COMPULSORY LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1	Elektrik devre temelleri	Charles K. Alexander, Metu N.O.Sadiku(2012), Datapons
2	Elektrik devreleri	Turgut İkiz(2016), Seçkin Yayınları
3	Fundamentals of Electrical Eng.	Don Johnson (2012), Rice University, Houston, Texas

ADDITIONAL LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1	Elektrotehnik temelleri	Leonid Grçev (2007), FEİT
2	Elektrik Devreleri	Nisson Riedel (2012), Palme Yayıncılık
3	Elektrotehnik temelleri	Leonid Grçev (2007), FEİT

## EVALUATION SYSTEM

<b>Underlying the Assessment Studies</b>	<b>NUMBER</b>	<b>PERCENTAGE OF GRADE</b>
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
<b>TOTAL</b>	<b>17</b>	<b>%100</b>

## ETHICAL CODE OF THE UNIVERSITY

In case students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of North Macedonia and International Vision University, apply relevant disciplinary rules. International Vision University students are expected never attempts in this kind of behavior.