

## INTERNATIONAL UNIVERSITY OF SARAJEVO

## SYLLABUS

## ENS203 - Electrical Circuits I

2016 Fall Semester



Course Code	Course Name	Course Type	Weekly			Credits	ECTS	Weekly Class Schedule
			T	A	L			
ENS203	Electrical Circuits I	Required	3	1	1		6	Tu/Th. 9:30-10:45
<b>Prerequisite</b>	Math background (MATH101, MATH201)	<b>It is a prerequisite to</b>			EE202			
<b>Lecturer</b>	Tarik Namas			<b>Office Hours Schedule</b>		Tu. 8:30 -9:30 Th. 8:30 -9:30		
<b>E-mail</b>	<a href="mailto:tnamas@ius.edu.ba">tnamas@ius.edu.ba</a>			<b>Office / Room No</b>		AF1.8		
<b>Phone</b>	033 957 211							
<b>Assistant</b>								
<b>E-mail</b>								
<b>Course Objectives</b>	<p>The course aims to provide students with:</p> <ul style="list-style-type: none"> <li>- Introduce the students to the principles of electric circuits</li> <li>- Introduce the students to various DC circuits solution methods and software</li> <li>- Provide the students with hands-on skills in the laboratory</li> <li>- Introduce the students to the basic AC circuits and mathematical representation of AC circuits</li> <li>- Provide the students opportunities to write substantial, professional, technical reports and conclusions.</li> </ul>							
<b>Textbook</b>	"Electric Circuits", 9th or 10th edition, Nilsson, Pearson							
<b>Recommended Reading</b>	Floyd: Electric Circuits Fundamentals Dorf: Introduction to Electric Circuits Boylstad: Introductory Circuit Analysis							
<b>Learning Outcomes</b>	After successful completion of the course, the student will be able to:							
	1	Explain the basic electrical elements like, resistors, inductors and capacitors and their interaction within electrical circuits						
	2	Calculate voltage and current in various DC electrical circuit combinations						
	3	Measure voltage and current in various DC electrical circuit combinations						
	4	Explain the basic principles of AC electrical circuits and the need for AC circuits						
	5	Use software packages for DC circuit analysis						
<b>Teaching Methods</b>	Class discussions with examples. Active tutorial sessions for engaged learning and continuous feedback on progress. Team assignments. Team projects that involve real data, summary, interpretation and reporting.							
<b>WEEK</b>	<b>TOPIC</b>						<b>REFERENCE</b>	
Week 1	Introduction						Ch 1 and physics review	
Week 2	Circuit Variables, Circuit Elements						Ch 2	
Week 3	Simple Resistive Circuits						Ch 3	
Week 4	Simple Resistive Circuits						Ch 3	
Week 5	Techniques of Circuit Analysis						Ch 4	
Week 6	Techniques of Circuit Analysis						Ch 4	
Week 7	Operational Amplifier						Ch 5	
Week 8	<b>Mid - Term</b>						--	
Week 9	Capacitors						Ch 6	
Week 10	Inductors						Ch 6	
Week 11	Response of 1st order RL and RC circuits						Ch 7	
Week 12	Response of 1st order RL and RC circuits						Ch 7	
Week 13	Introduction to complex numbers and Sinusoidal Steady State Analysis						Class Notes	
Week 14	Sinusoidal Steady State Analysis						Class Notes	
Week 15	Final Exam							
<b>Assessment Methods and Criteria</b>	<b>Evaluation Tool</b>		<b>Quantity</b>	<b>Weight</b>	<b>Notes</b>			
	Final Exam		1	40				
	Semester Evaluation			60				
	Homeworks		0	0				
	Quizzes		4	20	Best 3 out of 4			
	Midterm exam		1	20				
Laboratory work		8	20	Best 7 out 8				
*** ECTS Credit Calculation ***						Language of Instruction: English		
<b>Activity</b>	<b>Hours</b>	<b>Weeks</b>	<b>Student Workload</b>	<b>Activity</b>	<b>Hours</b>	<b>Weeks</b>	<b>Student Workload</b>	
Lecture hours	3	13	39.0	In-term exam study	10	1	10.0	
Assignments	2	10	20.0	Final exam study	15	1	15.0	
Active tutorials	2	10	20.0	Reporting	1	10	10.0	
Home study	3	12	36.0	<b>Total Workload Hours =</b>			150.0	
							<b>ECTS Credit =</b>	6