

ENS 203 CIRCUITS I Meriç Özcan SEPTEMBER 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>COURSE DESCRIPTION:</p> <p>It is the aim of this course to teach you the basics of electronic circuit design. We start from component level, introduce basic circuit analysis methods, equivalent circuit methods etc. By the 4th week or so you will meet the differential equations which are the basis of all engineering and science we know...We will use differential equations to solve so called transient (time-varying) problems. A few weeks after that we get into sinusoidal state-state analysis (which assumes system is excited by a sinusoidal source and transients are died out) again this is a very important concept for all engineering not just for Electronics. Here students who take Signals Course will feel more comfortable...You will learn analyzing power in AC circuits and you will learn the resonance concept. After the 2nd midterm we get into active circuits such as amplifiers, operational amplifiers and finally some lectures on diodes and bipolar junction transistors.</p> <p>Labs are involved...You start with basic simple experiments...However, at the end you are going to build a simple working radio... If you do not have fun in the labs you should ask yourselves if you really wanna be an engineer.</p> <p>This course is not trivial. However, if you study properly it is not rocket science either. You cannot afford missing more than one or two classes. Subjects change very very quickly, just look at this syllabus and check the sections from the textbook you will get the feeling...</p> <p>If you do not miss any class, if you solve homework problems, if you ask questions whenever you don't understand something, if you work hard in the lab, you will learn great a deal and you will pass the course one way or another.</p> <p>Final words... You will just see the tip of the iceberg in this course. Hopefully you will get infected and continue with Circuits II...</p> <p>LECTURES: Tue 11:40-13:30 FENS G077 Thu 13:40-14:30 FENS G077</p> <p>OFFICE HRS: TBD</p> <p>TEXT BOOK: Electrical Engineering Principles & Applications, Allan R. Hambley, 4th Ed. You absolutely need the book, any Ed. is ok.</p> <p>GRADING POLICY: Midterm 1 = 15 % Midterm 2 = 25 % Final =35% Lab = 20 % Quizzes =5 % HW = 0 to -10% (subject to change)</p> <p>Labs are strictly mandatory. Missing one lab results with one letter grade down, missing two labs is an automatic F.</p> <p>Cheating is not tolerated, do not expect any sympathy for the laziness. Seriousness and hard work is appreciated.</p>						
26	27	28 CHAPTER 1 1.1, 1.2 Intro., current, voltage, power, energy definitions	29 <div>Get the LAB INTRO handout from CANON</div>	30 CHAPTER 1 1.2—1.7 Kirchhoff's Voltage and Current Law, Circuit elements...		
<p align="center">LAB sessions will be in FENS 1033</p> <p> LAB A: Mon 15:40-19:30 LAB B: Tue 15:40-19:30 LAB C: Wed 08:40-12:30 LAB D: Fri 08:40-12:30 LAB E : Fri 13:40-17:30 </p> <p>Recitations A1, A2 are on Thu 17:40-19:30 and Recitations B1,B2,B3 are on Fri 08:40-10:30 after the first week.</p> <p>There will be a recitation every week unless given a notice.</p> <p> Rec A1 : FENS G015 Rec A2:FENS G025 Rec B1:FENS L055 Rec B2:FENS L062 Rec B3:FENS L063 </p>						

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3	4	5 CHAPTER 2 2.1—2.3 Resistive circuits, parallel and series networks...	6	7 CHAPTER 2 2.4—2.5 Node Voltage Analysis, Mesh Current Analysis	8	9																																																																																				
10 PREPARE FOR THE LAB 1 THIS WEEK	11 LAB 1 Instruments I	12 CHAPTER 2 2.4—2.5 Node Voltage Analysis, Mesh Current Analysis	13	14 CHAPTER 2 2.5—2.6 Mesh Current Analysis continued..	15	16																																																																																				
17 PREPARE FOR THE LAB 2 THIS WEEK	18 LAB 2 Instruments II	19 CHAPTER 2 2.6—2.8 Thevenin & Norton Circuits, Superposition...	20	21 CHAPTER 2 2.6—2.8 Thevenin & Norton Circuits, Superposition...	22	23																																																																																				
24	25	26 CHAPTER 3 3.1—3.4 Capacitance and Inductance	27	28 Cumhuriyet Bayramı HOLIDAY	29	30																																																																																				
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<div>7</div> <div>PREPARE FOR THE LAB 4 THIS WEEK</div> <div>→</div>	<div>8</div> <div>LAB 4 RC and RL</div>	<div>9</div> <div>CHAPTER 4 4.3—4.5 RC, RL circuits with sources, 2nd order circuits</div>	<div>10</div>	<div>11</div> <div>CHAPTER 5 5.1—5.2 Steady State Sinusoidal Analysis, Phasors</div>	<div>12</div>	<div>13</div>																																																																																																
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<div>21</div>	<div>22</div>	<div>23</div> <div>CHAPTER 5 5.3—5.6 Complex Impedances, Circuit analysis, power in AC circuits</div>	<div>24</div>	<div>25</div> <div>CHAPTER 6 6.1 — 6.4 Frequency Response, First order filters, Bode Plots</div>	<div>26</div>	<div>27</div>																																																																																																
<div>28</div> <div>PREPARE FOR THE LAB 5 THIS WEEK</div> <div>→</div>	<div>29</div> <div>LAB 5 Resonance</div>	<div>30</div> <div>CHAPTER 6 6.4 — 6.5 Bode Plots, High Pass Filters</div>																																																																																																				
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5	6	<div>7CHAPTER 1111.1 — 11.3Basic AmplifierConcepts, Cascaded Amplifiers</div>	8	<div>9CHAPTER 11 & 1411.11 Differential Amplifiers, 14.1-14.4Operational Amplifiers</div>	10	11																																																																																									
<div>PREPARE FOR THE LAB 6 THIS WEEK</div>	<div>LAB 6 Amplifiers</div>	<div>14CHAPTER 14Op-Amps continued...Example circuits...</div>	15	<div>16CHAPTER 14Op-Amps continued...</div>	17	18																																																																																									
<div>LAB FINAL THIS WEEK DURING THE RECITATION</div>	20	<div>21CHAPTER 1010.1—10.3Basic Diode, Load Line Analysis, Zener Diode</div>	22	<div>23CHAPTER 1010.4—10.5Diode Models</div>	24	25																																																																																									
<div>PREPARE FOR THE LAB 7 THIS WEEK</div>	<div>LAB 7 Radio</div>	<div>28CHAPTER 1010.6—10.8Rectifiers, Wave Shaping, Small Signal Circuits</div>	29	<div>30CHAPTER 1010.6—10.8Rectifiers, Wave Shaping, Small Signal Circuits</div>	<div>31New Year's Eve</div>																																																																																										
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2	3	4 CHAPTER 13 13.1—13.2 Bipolar Junction Transistors, Common Emitter Amplifier	5	6 CHAPTER 13 13.4—13.6 NPN transistor, large signal models, DC analysis	7 LAB 7 Radio for Friday Groups Only	8																																																																																																				
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