Electronic Circuits  
Elektronik Devreler

Prof. Dr. Nizamettin AYDIN  
naydin@yildiz.edu.tr  
http://www.yildiz.edu.tr/~naydin

Course Details

• Course Code : 0112622

• Course Name: Electronic Circuits  
  (Elektronik Devreler)

• Instructor : Nizamettin AYDIN

Assessment

<table>
<thead>
<tr>
<th>Method</th>
<th>Quantity</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz</td>
<td>-</td>
<td>05?</td>
</tr>
<tr>
<td>Homework</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Lab</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam(s)</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>1</td>
<td>36%</td>
</tr>
<tr>
<td>Attendance&amp; participation</td>
<td>-</td>
<td>04%</td>
</tr>
</tbody>
</table>

– Attendance assessment will be calculated as:

\[(0.1 \times \text{Attendance} - 6) \text{ for Attendance} \geq 60\]

Rules of the Conduct

• No eating /drinking in class  
  – except water

• Cell phones must be kept outside of class or switched-off during class  
  – If your cell-phone rings during class or you use it in any way, you will be asked to leave and counted as unexcused absent.

• No web surfing and/or unrelated use of computers,  
  – when computers are used in class or lab.

Rules of the Conduct

• You are responsible for checking the class web page (http://www.yildiz.edu.tr/~naydin/na_ElDev.htm) often for announcements.

• Academic dishonesty and cheating will not be tolerated and will be dealt with according to university rules and regulations  
  – Presenting any work, or a portion thereof, that does not belong to you is considered academic dishonesty.

Attendance Policy

• The requirement for attendance is 60%
  
  – Hospital reports are not accepted to fulfill the requirement for attendance.
  
  – The students, who fail to fulfill the attendance requirement, will be excluded from the final exams and the grade of F0 will be given.

• Link for the rules and regulations:
  http://www.ogi.yildiz.edu.tr/index1.php?s=0&k=60&f=index1
Course Outline…

• Electronic systems
  – Introduction, Electronic systems, Distortion and noise, System design.
• Sensors and actuators
  – Describing sensor performance, Sensors, Actuators, Laboratory measuring equipment.
• Control and feedback
• Operational amplifiers
  – An ideal operational amplifier, Basic operational amplifier circuits, Other useful circuits, Real operational amplifiers, Selecting component values, Effects of feedback on op-amp circuits.

…Course Outline…

• Diodes
  – Diode Characteristics, Diode applications.
• Transistors
  – Transistor circuits, DC analysis, AC analysis.
• FETs
  – FET circuits, DC analysis, AC analysis.
• Power Amplifiers
• Digital devices
  – Gate characteristics, Logic families, TTL, CMOS, Interfacing, Noise and EMC in digital systems.

…Course Outline

• Linear Digital ICs
  – Comparators, D/A converters, Timers, Voltage-controlled oscillators, PLL circuits, Interface circuits.
• Feedback and Oscillator Circuits
• Power Supplies
• Other Two-Terminal Devices
  – Schottky diode, Varactor diode, Power diodes, Tunnel diode, Photodiode, Photoconductive cells, IR emitters, Liquid crystal displays, Solar cells, Thermistors.

…Some recommended books…

• Electronic Devices and Circuit Theory by Robert L. Boylestad and Louis Nashelsky.
• Electronic Circuits - Fundamentals & Applications by Michael H. Tooley.
• The Art of Electronics by Paul Horowitz and Winfield Hill.
• Schaum's Outline of Electronic Devices and Circuits by Jimmie J. Cathey.
• Electronic Devices and Circuits by Theodore F. Bogart, Jeffrey S. Beasley, and Guillermo Rico.

…Some recommended books

• Electronic Devices and Circuits: Discrete and Integrated by Denton J. Dailey.
• Electronics Fundamentals: Circuits, Devices & Applications by Thomas L. Floyd and David Buchla.
• Electronic Devices and Circuits I by A.P. Godse and U.A. Bakshi.
• Electronic Devices: Circuits and Applications by William D. Stanley.
• Electronic Devices and Circuits by David A. Bell.
• Microelectronic Circuits by Adel Sedra and Kenneth Smith.