

<b>Course name</b>	<b>ECE 20800 Electronic Devices and Design Laboratory</b>
<b>Credit and contact hours</b>	(1 cr.) Lab 1
<b>Course coordinator's name</b>	Maher Rizkalla
<b>Textbook</b>	Lab Manual
<b>Course information</b>	<p>ECE 20800 Electronic Devices and Design Laboratory (1 cr.) P: ECE 20700. C: ECE 25500. Lab 3. Laboratory experiments in the measurement of electronic device characteristics. Design of biasing networks, small signal amplifiers and switching circuits.</p> <p><b>Prerequisites/ Co-Requisite</b> P: ECE 207 C:Course must be taken simultaneously with ECE 255</p> <p><b>Required, Elective, or Selected Elective:</b> EE Required, CE Elective</p>
<b>Goals for the course</b>	<p>Upon successful completion of the course, students should be able to</p> <ol style="list-style-type: none"> <li>1. Measure the input resistance and output resistance of a linear amplifier using the half-deflection method. [6, 1,2]</li> <li>2. Design, analyze, and test single-stage amplifiers that use bipolar transistors, FETs, and operational amplifiers. [6, 2]</li> <li>3. Design, analyze, and test a cascaded two-stage amplifier. [6, 2]</li> <li>4. Design, analyze, and test a differential amplifier. [6,2]</li> <li>5. Design, analyze, and test low pass active filters. [6,2]</li> <li>6. Use the oscilloscope in the x-y mode to display voltage versus frequency. [6, 1,2]</li> </ol>
<b>List of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Measurement of input and output resistance by the half-deflection method.</li> <li>2. Design, analysis, assembly, and testing of bipolar amplifiers.</li> <li>3. Design, analysis, assembly, and testing of two-stage amplifiers.</li> <li>4. Design, analysis, assembly, and testing of FET amplifiers.</li> <li>5. Design, analysis, assembly, and testing of differential amplifiers.</li> <li>6. Experiments with operational-amplifier based circuits.</li> <li>7. Design, analysis, assembly, and testing of active filters.</li> </ol>
<b>Syllabi approved by</b>	Maher Rizkalla
<b>Date of approval</b>	04/05/2021