

## Outcomes Based Learning Matrix:

**Course: ENGT 271 Eng Circuit Theory II**

**Department: ENGT**

Course Outcomes	Outcome Activities	Assessment Tools
<p><b>Students will be able to:</b></p>		
<p>Apply Laplace transform techniques to perform circuit analysis in steady state AC circuits.</p> <p>(WC, QL, IL, CCT, Int L)</p>	<p>Students will learn to use Laplace Transforms to transform time domain circuits that require integral differential equations to solve, into the frequency domain, reducing the complexity of the solutions to algebraic level equations.</p>	<p>Homework assignments to evaluate theoretical understanding are given on a per chapter basis. Multiple exams assess the students comprehensive understanding of the subject material.</p>
<p>Generate circuit and system transfer functions</p> <p>(WC, QL, IL, CCT, Int L)</p>	<p>Be able to develop the mathematical model of the circuit and determine the responses of these models to various circuit inputs.</p>	<p>Homework assignments to evaluate theoretical understanding are given on a per chapter basis. Multiple exams assess the students comprehensive understanding of the subject material.</p>
<p>Illustrate an understanding of Circuit Stability and Phase Analysis</p> <p>(WC, QL, IL, CCT, Int L)</p>	<p>Using transfer functions students will determine the pole/zero relationships of these functions and how they affect the circuits frequency and phase responses.</p>	<p>Homework assignments to evaluate theoretical understanding are given on a per Chapter basis. Multiple exams assess the students comprehensive understanding of the subject material. Regularly scheduled laboratory circuit building or simulation is used to teach hands-on skills, and lab reports are assigned to assess a student's understanding of circuit construction and analysis techniques as well as their ability to troubleshoot circuits.</p>
<p>Evaluate circuit frequency response and illustrate this response using bode diagrams.</p> <p>(WC, QL, IL, CCT, Int L)</p>	<p>Using zero and pole analysis students will determine the frequency response of the circuit and learn the techniques for creating Bode plots to illustrate this response.</p>	<p>Homework assignments to evaluate theoretical understanding are given on a per Chapter basis. Multiple exams assess the students comprehensive understanding of the subject material. Regularly scheduled laboratory circuit building or simulation is used to teach hands-on skills, and lab reports are assigned to assess a student's understanding of circuit construction and analysis techniques as well as their ability to troubleshoot circuits.</p>