<table>
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<tr>
<th>Course name</th>
<th>ECE 20200 Linear Circuit Analysis II</th>
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<tbody>
<tr>
<td>Credit and contact hours</td>
<td>(3 cr.) Class 3</td>
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<tr>
<td>Course coordinator’s name</td>
<td>Seemein Shayesteh</td>
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**Course information**

2014-16 IUPUI Campus Bulletin description:


**Prerequisites/ Co-Requisite**
P: ECE 20100. C: MATH 26600

**Required, Elective, or Selected Elective:**
EE Required, CE Required

**Goals for the course**

Upon successful completion of the course, students should be able to

1. Compute impedances and admittances of components and circuits. [a, e, k]
2. Compute responses of linear circuits with and without initial conditions via one-sided Laplace transform techniques. [a, e, k, PC1]
3. Compute responses to linear circuits using transfer function and convolution techniques. [a, e, k, PC1]
4. Analyze and compute responses of linear circuits containing mutually coupled inductors and ideal transformers in the s-domain. [a, e, k, PC1]
5. Analyze basic two port circuits using the various types of two port parameters and be able to construct such parameters from a given circuit. [a, e, k]
6. Analyze and design basic LP, BP, HP and resonant circuits in the s-domain. [a, e, k, PC1]

**List of topics to be covered**

1. Magnetic Coupling, mutual inductance (2 classes)
2. Ideal transformers, linear transformers (2 classes)
3. Two-port parameters (2 classes)
4. Passive frequency selective circuits: Band pass, low pass, high pass filters (3 classes)
5. Step function, delta function, and LaPlace transforms (4 classes)
6. Complex frequency, natural frequency, poles and zeros (2 classes)
7. Use of PSpice with schematic capture for steady-state and
<table>
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<tr>
<th>Syllabi approved by</th>
<th>Seemein Shayesteh</th>
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<td>Date of approval</td>
<td>04/01/2016</td>
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- transient analysis (2 classes)
- Use of Matlab for circuit analysis (2 classes)
- Circuit analysis with s-domain (2 classes)
- Transfer functions (1 class)
- Natural response, convolution (3 classes)
- Exams and Quizzes (5 classes and final exam period)