UAA Bachelor of Science in Engineering (BSE) Electrical Engineering Specialization Recommended Course Sequence & Prerequisites Flowchart

Key:
- Prerequisite
- Prerequisite or Concurrent
- Either Class as Prerequisite

Preparation for students before entering:
- Math Placement Test OR MATH 108, OR MATH 109
- English Placement Test is Required or fulfill Prerequisites
- 1 Year HS Chemistry OR CHEM 055
- Physics Placement Test OR PHYS 130

Fall 2011: 17 credits
- ENGR 151 (3)
- ENGR 161 (3)
- MATH 200 (4)
- ENGL 111 (3)
- CHEM 105 L (4)
- CSE 205 (3)

Spring 2012: 17 credits
- ENGR 192 (1)
- ENGR 161 (3)
- MATH 201 (4)
- ENGL 212 (3)
- COMM 111/235 237/241 (3)
- CSE 215 (3)

Fall 2012: 18 credits
- MATH 202 (4)
- PHYS 211 L (4)
- EE 241 (4)
- EE 203 (4)

Spring 2013: 17 credits
- GER (3)
- MATH 302 (3)
- PHYS 212 L (4)
- EE 353/L (4)
- EE 204 (4)

Fall 2013: 18 credits
- Advanced Math Elective (3)
- ES 208 (4)
- EE 314 (3)
- CSE 225 (3)
- EE 354 (3)

Spring 2014: 16 credits
- GER (3)
- GER (3)
- EE 324/L (4)
- EE 441 (3)
- EE 308 (3)

Fall 2014: 15 credits
- GER (3)
- ES 302 (3)
- Advanced Engr. Elective (3)
- Advanced Engr. Elective (3)
- EE 465 (3)

Spring 2015: 15 credits
- GER (3)
- ESM 450 (3)
- Advanced Engr. Elective (3)
- Advanced Engr. Elective (3)
- ESM 438 Capstone (3)

Senior year: 15 credits

See your advisor for selection of Advanced Engineering Electives

Total Credits Required for the Degree: 132
Advanced Electrical Engineering/Science Electives (12 credits). Course approval is required from your Engineering Faculty Advisor. BSE students specializing in Electrical Engineering are required to take 12 credits from the following list of elective courses. Most courses require prerequisites and faculty advisor approval is required. Students should coordinate the other degree requirements to satisfy any prerequisite requirements.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE A445</td>
<td>Computer Design &amp; Interfacing</td>
<td>4</td>
<td>EE A204, EE A241, CS A221, CS A320</td>
</tr>
<tr>
<td>CSE A451</td>
<td>Digital Signal Processing</td>
<td>3</td>
<td>EE A354, STAT A307 or ES302</td>
</tr>
<tr>
<td>CSE A355</td>
<td>Computer Networking for Engineers</td>
<td>3</td>
<td>CSE A215</td>
</tr>
<tr>
<td>CSE A465</td>
<td>Network Security</td>
<td>3</td>
<td>CSE A355</td>
</tr>
<tr>
<td>EE A458</td>
<td>Antenna Theory</td>
<td>3</td>
<td>EE A324</td>
</tr>
<tr>
<td>EE A462</td>
<td>Communication Systems</td>
<td>3</td>
<td>EE A354</td>
</tr>
<tr>
<td>EE A407</td>
<td>Power Distribution</td>
<td>3</td>
<td>EE A204 and EE A353</td>
</tr>
<tr>
<td>EE/ME A306</td>
<td>Dynamics of Systems</td>
<td>3</td>
<td>EE A203, ES A208, MATH A302</td>
</tr>
<tr>
<td>EE/ME A471</td>
<td>Automatic Controls</td>
<td>3</td>
<td>[ME A306 or EE A353], MATH A302, [ES A208 or ES 210]</td>
</tr>
</tbody>
</table>

CE A403 or CE A603 (Arctic Engineering) or ES 411 Northern Design (3 credits). Only one of these courses may be taken.

>>> Other courses may also be taken for Advanced Engineering Electives but must first be approved by your engineering faculty advisor and petitioned.

Advanced Mathematics Electives (3 credits)
BSE students are required to take 3 credits from the following list of elective courses. Some acceptable electives require additional prerequisite courses. So, students are advised to carefully select the elective that best fits their course history and course plan.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Description</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A310</td>
<td>Numerical Methods</td>
<td>3</td>
<td>MATH A314</td>
</tr>
<tr>
<td>MATH A314</td>
<td>Linear Algebra</td>
<td>3</td>
<td>MATH A202</td>
</tr>
<tr>
<td>MATH A321</td>
<td>Analysis of Several Variables</td>
<td>3</td>
<td>MATH A202, MATH A314</td>
</tr>
<tr>
<td>MATH A371</td>
<td>Stochastic Processes</td>
<td>3</td>
<td>MATH A201, STAT A307</td>
</tr>
<tr>
<td>MATH A407</td>
<td>Mathematical Statistics I</td>
<td>3</td>
<td>MATH A202, STAT A307</td>
</tr>
<tr>
<td>MATH A410</td>
<td>Introduction to Complex Analysis</td>
<td>3</td>
<td>MATH A202</td>
</tr>
<tr>
<td>MATH A422</td>
<td>Partial Differential Equations</td>
<td>3</td>
<td>MATH A302</td>
</tr>
<tr>
<td>MATH A423</td>
<td>Advanced Engineering Mathematics</td>
<td>3</td>
<td>MATH A302</td>
</tr>
</tbody>
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