UAA Bachelor of Science in Engineering (BSE)  
Electrical Engineering Specialization

Recommended Course Sequence & Prerequisites Flowchart

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

**Fall (18)**
- ENGR 151 (1)
- MATH 200 (4)
- ENGL 111 (3)
- CHEM 105 / L (4)
- CSE 205 (3)
- GER (3)

**Spring (17)**
- COMM 111/235 237/241 (3)
- MATH 201 (4)
- ENGL 212 (3)
- EE 261 (1)
- CSE 215 (3)
- GER (3)

**Fall (16)**
- MATH 202 (4)
- EE 203 (4)
- PHYS 211 / L (4)
- EE 241 (4)

**Spring (17)**
- ENGR 105A, B (2)
- MATH 302 (3)
- EE 353/L (4)
- PHYS 212 / L (4)
- EE 204 (4)
- GER (3)

**Fall (17)**
- ES 208 (5)
- Advanced Math Elective (3)
- EE 354 (3)
- EE 314 (3)
- CSE 225 (3)

**Spring (16)**
- ES 302 (3)
- EE 308 (3)
- EE 465 (3)
- EE 324/L (4)
- GER (3)

**Fall (16)**
- Advanced Engr. Elective (3)
- Advanced Engr. Elective (3)
- EE 471 (3)
- EE 441 (3)
- GER (3)

**Spring (15)**
- Advanced Engr. Elective (3)
- Advanced Engr. Elective (3)
- ESM 450 (3)
- EE 438 Capstone (3)
- GER (3)

131 Total Credits Required for the Degree

Find more information on the web at [http://www.uaa.alaska.edu/schoolofengineering](http://www.uaa.alaska.edu/schoolofengineering)
Advanced Electrical Engineering/Science Electives (15 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, and CSE A225</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 A451</td>
<td>Digital Signal Processing</td>
<td>3</td>
<td>EE A354</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, and MATH A302</td>
</tr>
<tr>
<td></td>
<td>CE A403 or CE A603 (Arctic Engineering)</td>
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<td></td>
<td>ES 411 Northern Design (3 credits). Only one of these courses may be taken.</td>
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</tbody>
</table>

>> 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>
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