UAA Bachelor of Science in Electrical Engineering (BSEE) Recommended Course Sequence & Prerequisites Flowchart 2017/2018

High School or Equivalent
- Math Placement Test OR MATH 108, OR MATH 109
- English Placement Test OR MATH 055
- Physics Placement Test OR PHYS 130

Preparatory Coursework: Must be completed with a grade of C or better

Fall (18)
- ENGR 151 (1) Intro to Engr
- MATH 251 (4) Calc I
- WRTG 111 (3) Written Comm
- CSE 205 (3) C Prog. Lang.
- CHEM 105/L (4) Chem I
- GER (3)

Fall (16)
- GER (3)
- MATH 253 (4) Calc III
- WRTG 212 (3) Wrtg for Prof
- EE 241 (4) Computer Hardware Concepts
- EE A261 (3) Matlab for EE
- EE 203 (4) Fund. EE
- EE A333 (4) Electronic Devices
- PHYS 211/L (4) Gen. Phys I
- PHYS 212/L (4) Gen. Phys. II

Spring (18)
- COMM 111/235 237/241 (3)
- MATH 252 (4) Calc II
- MATH 302 (3) ODE
- PHIL A305 (3) Prof Ethics
- PHYS 211/L (4) Gen. Phys I
- PHYS 212/L (4) Gen. Phys. II

Fall (15)
- ES 209 (3) Statics
- ES 302 (3) Data Analysis
- EE 354 (3) Signal Analysis
- EE 307 (3) Intro to Power Systems
- EE 353/L (4) Circuit Theory
- EE 314 (3) EM Theory I
- EE 324/L (4) EM Theory II

Spring (16)
- MATH 253 (4) Calc III
- WRTG 212 (3) Wrtg for Prof
- EE 303 (4) Fund. EE
- EE A333 (4) Electronic Devices
- CSCE 248 (3) Comp. Org
- EE 308 (3) Inst. & Meas
- EE 307 (3) Intro to Power Systems
- EE 314 (3) EM Theory I
- EE 324/L (4) EM Theory II

Fall (15)
- MATH 253 (4) Calc III
- WRTG 212 (3) Wrtg for Prof
- EE 303 (4) Fund. EE
- EE A333 (4) Electronic Devices
- CSCE 248 (3) Comp. Org
- EE 308 (3) Inst. & Meas
- EE 307 (3) Intro to Power Systems
- EE 314 (3) EM Theory I
- EE 324/L (4) EM Theory II

Spring (16)
- ES 210 (3) Dynamics
- EE 465 (3) Telecom
- EE 308 (3) Inst. & Meas
- EE 307 (3) Intro to Power Systems
- EE 314 (3) EM Theory I
- EE 324/L (4) EM Theory II
- EE 411 (3) I.C. Design
- GER (3)

Fall (15)
- ESM 450 (3) Economic Analysis and Operation
- EE 471 (3) Automatic Controls
- Advanced Engr. Elective (3)
- Advanced Math Elective (3)
- EE 411 (3) I.C. Design
- GER (3)

Spring (15)
- EE 438 (3) Capstone
- Advanced Engr. Elective (3)
- Advanced Engr. Elective (3)
- Advanced Math Elective (3)
- EE 411 (3) I.C. Design
- GER (3)

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

Offered EVERY Semester
Offered FALL only
Offered SPRING only

132 Total Credits Required for the Degree

Find more information on the web at https://www.uaa.alaska.edu/electricalengineering/

Revised 8/24/2017
**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>CSCE A445</td>
<td>Computer Design &amp; Interfacing</td>
<td>4</td>
<td>EE A333, EE A241, and CSE A225</td>
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<tr>
<td>CSCE A365</td>
<td>Computer Networking for Engineers</td>
<td>3</td>
<td>CSCE A211</td>
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<td>CSCE A465</td>
<td>Network Security</td>
<td>3</td>
<td>CSCE A365</td>
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<td>EE A407</td>
<td>Power Distribution</td>
<td>3</td>
<td>EE A307</td>
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<tr>
<td>EE A417</td>
<td>Green Electricity</td>
<td>3</td>
<td>EE A353</td>
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<tr>
<td>EE A451</td>
<td>Digital Signal Processing</td>
<td>3</td>
<td>EE A354</td>
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<td>EE A458</td>
<td>Antenna Theory</td>
<td>3</td>
<td>EE A324</td>
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<td>EE A462</td>
<td>Communication Systems</td>
<td>3</td>
<td>EE A354</td>
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<tr>
<td>EE A472</td>
<td>Advanced Linear Systems</td>
<td>3</td>
<td>EE A471</td>
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<td>EE A494K</td>
<td>Power Electronics</td>
<td>3</td>
<td>EE A307</td>
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<td>PHYS A303</td>
<td>Modern Physics</td>
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<td>Physics 212</td>
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</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>
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</thead>
<tbody>
<tr>
<td>MATH A310</td>
<td>Numerical Methods</td>
<td>3</td>
<td>MATH A314</td>
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<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>
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<tr>
<td>MATH A371</td>
<td>Stochastic Processes</td>
<td>3</td>
<td>MATH A201, STAT A307</td>
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<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>
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<td>MATH A423</td>
<td>Advanced Engineering Mathematics</td>
<td>3</td>
<td>MATH A302</td>
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