Computer engineering combines electronic design, computer architecture, programming of computing systems, computer networks, and applied mathematics. The bachelor of science with a major in computer engineering degree program prepares students in the theory and application of hardware and software design, computer networks, embedded systems, and very large scale integrated (VLSI) circuit design and applications. Students may take electives in advanced topics such as optical networks, broadband wireless networks, and technologies for the next generation of information systems.

**Bachelor of Science With a Second Major in Computer Engineering**

Any undergraduate student who is enrolled at GW may declare a second major in computer engineering only if his or her primary degree is a Bachelor of Science. The student must meet all the degree requirements for the Bachelor of Science in computer engineering, including SEAS general, major, technical electives, humanities/social science, and SEAS/technical GPA requirements. Students receiving other bachelor degrees (e.g., BBA, BFA, BA) will have to meet the requirements for a double degree (http://bulletin.gwu.edu/university-regulations/#DDegrees).

**Graduation grade-point average criteria:**
To satisfactorily complete a second major in computer engineering, a student must have a minimum grade-point average of 2.2 in all technical engineering courses outlined in the fifth, sixth, seventh, and eighth semesters of the curriculum. See the University Bulletin for more information on BS in Computer Engineering curriculum requirements for all the courses needed to complete the second major.

**REQUIREMENTS**

**Recommended program of study**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CHEM 1111</td>
<td>General Chemistry I</td>
<td></td>
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<tr>
<td>ECE 1010</td>
<td>Introduction to Electrical and Computer Engineering I</td>
<td></td>
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<tr>
<td>MATH 1231</td>
<td>Single-Variable Calculus I</td>
<td></td>
</tr>
<tr>
<td>SEAS 1001</td>
<td>Engineering Orientation</td>
<td></td>
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<tr>
<td>UW 1020</td>
<td>University Writing I</td>
<td></td>
</tr>
<tr>
<td>Humanities or social sciences elective ²</td>
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</tr>
</tbody>
</table>
ECE 3915W  Electrical and Computer Engineering Capstone Project Lab I

Humanities or social sciences elective ²

**Seventh semester**

ECE 4140  VLSI Design and Simulation

ECE 4535  Computer Architecture and Design

ECE 4920W  Electrical and Computer Engineering Capstone Project Lab II

Humanities or social sciences elective ²

Technical elective ³

**Eighth semester**

ECE 4150  ASIC Design and Testing of VLSI Circuits

ECE 4925W  Electrical and Computer Engineering Capstone Project Lab III

PHIL 2135  Ethics in Business and the Professions

Two technical electives ³

¹ Course satisfies the university general education requirement in math, science, and writing.

² At least two social and behavioral sciences courses must be selected from the University General Education Requirement list; (http://bulletin.gwu.edu/university-regulations/general-education) the remaining course must be selected from either the University General Education Requirement list or the SEAS General Education Requirement list (http://www.seas.gwu.edu/sites/www.seas.gwu.edu/files/downloads/HSS%20Form%20Fall%202015%20Admits%201_0.pdf). At least one humanities course must be selected from the University General Education Requirement list (http://bulletin.gwu.edu/university-regulations/general-education); the remaining courses must be selected from either the University General Education Requirement list or the SEAS General Education Requirement list. (http://www.seas.gwu.edu/sites/www.seas.gwu.edu/files/downloads/HSS%20Form%20Fall%202015%20Admits%201_0.pdf)

³ Three 3-credit technical elective courses must be chosen with the approval of the advisor from advanced undergraduate or graduate courses in engineering, computer science, mathematics, physical sciences, or biological sciences. At least one of the technical electives must be an upper-level math or science course.

⁴ ECE students not having prerequisite courses CSCI 2113 and CSCI 2461 must use RTFs to register for the course.