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<th>Computer Science B.S.</th>
<th>Computer Science and Engineering B.S.</th>
<th>Computer Engineering B.S.</th>
<th>Electrical Engineering B.S.</th>
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<td><strong>Preparation for the Major</strong></td>
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<td>Required: Computer Science 1, 31, 32, 33, 35L, M51A, Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and Physics 4AL or 4BL.</td>
<td>Required: Computer Science 1, 31, 32, 33, 35L, M51A, Electrical and Computer Engineering 3, 10, 11L; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and Physics 4AL or 4BL.</td>
<td>Required: Computer Science 1 (or Electrical and Computer Engineering 112), 31, 32, 33, 35L, M51A, Electrical and Computer Engineering 3, 10, 11L; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, 4AL; Engineering 96C.</td>
<td>Required: Electrical Computer Engineering 101A, 102, 110, 111, 113, 131A; six core courses selected from Computer Science 33, Electrical and Computer Engineering 101B, 115A, 121B, 132A, 133A, 141, 170A; one two-term Electrical Engineering capstone design course (8 units); 12 units of major field elective courses, at least 6 of which must be upper division Electrical and Computer Engineering courses – the remaining 4 may be from upper division Electrical and Computer Engineering courses or from another HSSEAS department; and 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs.</td>
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**The Major**  

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| Required: Computer Science 111, 118, 131, M151B, M152A, 180, 181; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, or Statistics 100A; one capstone software engineering or design course from Computer Science 130 or 152B; 20 units of elective courses selected from Computer Science 111 through CMP17 of Electrical and Computer Engineering 133A, at least one of which must be Computer Science 112 or 170A or Electrical and Computer Engineering 133A, and at least two of which must be selected from Computer Science CM121, CM122, CM124, 143, 161, or 174A, with at least one of the two courses from 143, 161, or 174A; 12 units of science and technology courses (not used to satisfy other requirements) that may include 12 units of upper division computer science courses or 12 units of courses selected from an approved list available in the Office of Academic and Student Affairs; and 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs. | Required: Computer Science 111, 118, 131, M151B, M152A, 180, 181, Electrical and Computer Engineering 102, 110, 111L; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 112, at least one of which must be Computer Science 111 through CMP17 of Electrical and Computer Engineering 133A, at least one of which must be Computer Science CM121, CM122, CM124, 143, 161, or 174A; 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs. | Students must take at least one course from Computer Science 101A, 102, 110, 111L, 113, 13A; six core courses selected from Computer Science 33, Electrical and Computer Engineering 101B, 115A, 121B, 132A, 133A, 141, 170A; one two-term Electrical Engineering capstone design course (8 units); 12 units of major field elective courses, at least 6 of which must be upper division Electrical and Computer Engineering courses – the remaining 4 may be from upper division Electrical and Computer Engineering courses or from another HSSEAS department; and 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs. | Required: Required: Computer Science 111, C118, 131, M151B, M152A, 180, 181, Electrical and Computer Engineering 132B, M151B, M152A, 180; Electrical and Computer Engineering 102, 110, 111L; one course from Computer Science 130, 131, 132, 133, 136, 142, 188; Electrical and Computer Engineering 2, 115A, 115B, 115C, M117, 132A, 133A, 141, 142, 144; and 18 units of Computer Science electives from Computer Science 111 through CM187; 8 units of Electrical and Computer Engineering electives and 8 units of Computer Science electives from Computer Science 132, 133, 136, 142, 188. Students who pursue a technical breadth area in either Electrical and Computer Engineering or Computer Science can choose an additional three courses from this list. |

**Suggested Tracks**

1. Network Embedded Systems  
   Students pursuing this track are strongly encouraged to take Electrical and Computer Engineering/Computer Science M119 in junior year, and to choose three electives from courses such as Computer Science 130, 131, 132, 133, 136, 181, 188; Electrical and Computer Engineering 2, 115A, 115B, 115C, M117, 132A, 133A, 141, 142, 144, 145, 146, 147, and 8 capstone design courses from 180DA/180DB.  
2. Data Science  
   Students pursuing this track are strongly advised to take Computer Science 145 and Electrical and Computer Engineering/Computer Science M146, and to additionally choose two electives from courses such as Computer Science 130, 131, 132, 133, 181, 188; Electrical and Computer Engineering 114, 133A, 133B, 134, 188. Students who pursue a technical breadth area in either Electrical and Computer Engineering or Computer Science can choose an additional three courses from this list.  
3. Cyber Physical Systems (CPS)  
   Students might take a 12-unit technical breadth area in computer science such as Computer Science 111, 130, and 180 and/or 12 units of electives from Electrical Engineering 115C, M116C, M117, and 132B, and 8 capstone design units from 133A/133B or 180DA/180DB or 183DA/183DB.  
4. Bioengineering and Informatics  
   Students might take a 12-unit technical breadth area in computer science such as Computer Science 111, 130, and 180 and/or 12 units of electives from Computer Science M121, Electrical and Computer Engineering 114, 133B, 134, and 176 and 8 capstone design courses from 180DA/180DB.  
5. Computer Engineering  
   Students might take a 12-unit technical breadth area in computer science such as Computer Science 111, 130, and 180 and/or 12 units of electives from Electrical Engineering 115C, M116C, M117, and 132B, and 8 capstone design units from 133A/133B or 180DA/180DB or 183DA/183DB.  
6. Electrical and Computer Engineering  
   Students may choose two courses from one of the following: Electrical and Computer Engineering 101A, 102, 110, 111L, 113, 13A; six core courses selected from Computer Science 33, Electrical and Computer Engineering 101B, 115A, 121B, 132A, 133A, 141, 170A; one two-term Electrical Engineering capstone design course (8 units); 12 units of major field elective courses, at least 6 of which must be upper division Electrical and Computer Engineering courses – the remaining 4 may be from upper division Electrical and Computer Engineering courses or from another HSSEAS department; and 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs.  