**SF State Scholars**

in Computer/Electrical Engineering

B.S. in Computer/Electrical Engineering + M.S. in Engineering: Concentration in Embedded Electrical and Computer Systems

The blended programs offer an accelerated route for motivated undergraduate students in Computer/Electrical Engineering to complete both their B.S. and M.S. degrees in five years. Students work directly with a faculty advisor to gain research experience and necessary skills to apply creativity, critical thinking, and technologies in developing engineering products and solutions for real-world problems.

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**Program Coordinators**

SF Scholars Coordinator (Computer Engineering):

Dr. Xiaorong Zhang
xrzhang@sfsu.edu

SF Scholars Coordinator (Electrical Engineering):

Dr. Hamid Mahmoodi
mahmoodi@sfsu.edu

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**Program Value**

- **Getting the most out of your education**: Paying undergraduate tuition for graduate-level courses. Graduate School application fee waived.
- **Getting the most of your time**: Students in this program pursue bachelor’s and master’s degrees simultaneously, enabling students to use their senior project capstone experience to be integrated with a graduate thesis/project.
- **Challenging yourself**: Students will become more competitive and dynamic by engaging with advanced &/or graduate-level cohort.

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For more information, please visit
https://engineering.sfsu.edu/sf-state-scholars-41-blended-bsms-program
Skills Offered
- Embedded Systems Design
- ASIC Design
- Digital Design Verification
- Mobile Computing
- Hardware Design
- Machine Learning
- Robotics and Control

Potential Jobs
- Embedded Systems Engineer
- Firmware Engineer
- Verification/Validation Engineer
- Test Engineer
- Application Engineer
- Hardware Design Engineer
- Software Engineer

Career Paths after Graduation
- Our graduates work at high-tech companies or continue to pursue a Ph.D. degree at institutions such as UC campuses, Virginia Tech, and Duke

Representative companies that hire our graduates
- Intel
- NVIDIA
- AMD
- Broadcom
- Qualcomm
- Synopsys
- Cisco
- WD
- Western Digital
- STMicroelectronics
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Details</th>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>Freshman</td>
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</tr>
<tr>
<td>Fall</td>
<td>CHEM 180 or 115</td>
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<tr>
<td></td>
<td>ENG 114</td>
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<tr>
<td></td>
<td>ENGR 100 + 121+212</td>
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<tr>
<td></td>
<td>MATH 226</td>
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<td></td>
<td>Area A</td>
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<td>17 Units</td>
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<td>Sophomore</td>
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<tr>
<td>Fall</td>
<td>CSC 210</td>
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<td>MATH 228</td>
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<td>MATH 226</td>
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<td></td>
<td>PHYS 230/232</td>
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<tr>
<td></td>
<td>Area B2</td>
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<tr>
<td></td>
<td>Area C</td>
</tr>
<tr>
<td>17 Units (84-86 total)</td>
<td>16 Units (100-102 total)</td>
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<tr>
<td>Junior</td>
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</tr>
<tr>
<td>Fall</td>
<td>ENGR 300</td>
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<td>ENGR 305</td>
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<tr>
<td></td>
<td>ENGR 353</td>
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<tr>
<td></td>
<td>ENGR 356+357</td>
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<td>Area C</td>
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<tr>
<td>17 Units (51-53 total)</td>
<td>16 Units (67-69 total)</td>
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<tr>
<td>Senior</td>
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<tr>
<td>Fall</td>
<td>CS 413</td>
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<td>ENGR 456</td>
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<td>ENGR 696</td>
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<td>UD-Elective</td>
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<tr>
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<td>ENGR 844</td>
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<tr>
<td>Fall</td>
<td>ENGR 800</td>
</tr>
<tr>
<td></td>
<td>ENGR 897 or Graduate Elective</td>
</tr>
<tr>
<td></td>
<td>ENGR 898 or 895</td>
</tr>
</tbody>
</table>

**Students must meet with their advisor prior to registering for courses. This roadmap is designed for general planning ONLY! Roadmaps for more than 5 years plan may vary please consult with your department.**

Minimum Units required for Bachelors = 128
Minimum Units required for Masters = 30
**SF State Scholars**

*Tentative* Electrical Engineering

Roadmap

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**Freshman**

**Fall**

- CHEM 180 or 115
- ENGR 201/203/204/303
- MATH 228
- PHYS 230/232
- Area B2
- Area D
- 17-19 Units (17-19 total)

**Spring**

- ENGR 213
- ENGR 227
- ENGR 205+206
- ENGR 290
- CSPHYS 240/242
- Area D + C
- 17 Units (51-53 total)

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**Sophomore**

**Fall**

- ENGR 300
- ENGR 305+315
- ENGR 353
- ENGR 356+357
- Area C
- 17 Units (84-86 total)

**Spring**

- MATH 245
- ENGR 420
- ENGR 451
- ENGR 478
- UD-Major Elective
- 18 Units (102-105 total)

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**Junior**

**Fall**

- ENGR 446+447
- ENGR 449
- ENGR 696
- ENGR 844
- 16-17 Units (124-128 total)

**Summer**

- UD-C
- UD-Major Elective
- Graduate Elective
- 6 Units (108-111 total)

**Spring**

- ENGR 697 GW
- UD-Major Elective
- Graduate Elective
- 14-15 Units (140-143 total)

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**Senior**

**Fall**

- ENGR 800
- ENGR 897
- ENGR 844
- ENGR 852
- 9 Units (149-152 total)

**Spring**

- ENGR 801
- Graduate Elective
- Graduate Elective
- 9 Units (158-161 total)

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**Graduate**

**Fall**

- Graduate Elective

**Spring**

- Graduate Elective

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**Bold= must take courses & pass before applying**

**Green= Undergraduate courses**

**Orange= Graduate Courses**

**Minimum Units required for Bachelors = 129**

**Minimum Units required for Masters = 30**

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**Students must meet with their advisor prior to registering for courses. This roadmap is designed for general planning ONLY! Roadmaps for more than 5 years plan may vary please consult with your department.**

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**Prior to taking ENGR 696**

**3.0 GPA**

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*Electrical Engineering Roadmap*