### Pathway to a Successful Engineering Education @ SSU!

**Term** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5**
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**Fall** | **Spring** | **Summer** | **Fall** | **Spring** | **Summer** | **Fall** | **Spring** | **Summer** | **Fall**

**Fundamental Courses**
- **Year 1**: Math, Programming, & Physics
- **Year 2**: Math & Physics
- **Year 3**: Advanced EE Courses
- **Year 4**: EE Electives
- **Year 5**: EE Electives

**Engineering Courses**
- **Year 1**: Electronics
- **Year 2**: Advanced EE Courses
- **Year 3**: Microcontrollers & Programming
- **Year 4**: Senior Design Proj. EE 492 / EE 493
- **Year 5**: Senior Design Proj. EE 492 / EE 493

**Hands-On**
- **Year 1**: Intro to Engineering EE 110 / EE 112
- **Year 2**: Electronics & Maker Space
- **Year 3**: Microcontrollers & Programming
- **Year 4**: Senior Design Proj. EE 492 / EE 493
- **Year 5**: Senior Design Proj. EE 492 / EE 493

**Skill Building Activities**
- **Year 1**: Project in Box
- **Year 2**: CAD / 3D Print / PCB Design Workshops
- **Year 3**: Take 1-Unit Skill Building Labs
- **Year 4**: Take 1-Unit Skill Building Labs
- **Year 5**: Take 1-Unit Skill Building Labs

**Community / Department Service**
- **Year 1**: Get to Know the Senior Students
- **Year 2**: Help with Outreach
- **Year 3**: Help with Orientations & Outreach + Tutoring
- **Year 4**: Mentor Freshmen Students + Tutor
- **Year 5**: Mentor Freshmen Students + Tutor

**Professional Activities**
- **Year 1**: Become Involved in Clubs
- **Year 2**: Become Active in Clubs / Start Building/Scholarships
- **Year 3**: Contribute to the Clubs
- **Year 4**: Become a Club Officer IEEE / SWE Club
- **Year 5**: Become a Club Officer IEEE / SWE Club

**Real-World Experience & Activities**
- **Year 1**: Consider Assisting Senior Students with Senior Design Proj.
- **Year 2**: Summer Research, I-Corps or Internship
- **Year 3**: Got Resume?
- **Year 4**: Participate at I-Corps
- **Year 5**: Participate at I-Corps

**Plan on a Minor/ or Advanced Degrees**
- **Year 1**: Start Planning for a Minor or Graduate School
- **Year 2**: GE Courses
- **Year 3**: CS Minor / Grad. Courses
- **Year 4**: CS Minor / Grad. Courses
- **Year 5**: CS Minor / Grad. Courses

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**More Information:**

- Internship positions: [http://web.sonoma.edu/engineering/jobs/](http://web.sonoma.edu/engineering/jobs/)
- McNair scholarship: [http://web.sonoma.edu/mcnair/](http://web.sonoma.edu/mcnair/)

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## Skills Acquired While Studying in the EE Program @ SSU

### Software Skills

- **Programming Languages**
  - Python/Numby/Qt/SciKit (for machine learning), etc.
  - C/C++
  - Assembly
- **Software Packages**
  - Visio / Inkscape
  - LabView
  - OpenCV
  - Matlab
  - Fusion 360 / Solidworks / AutoCAD /etc.
  - Keil MDK / Eclipse / MPLAB
  - Eagle PCB / Altium / KiCad
  - Spice / Multisim
  - App Inventor / Android Development

### Hardware Skills

- **Arduino / PIC**
- **Raspberry Pi / Beaglebone**
- **Oscilloscope**
- **Power supply**
- **Function generator**
- **Circuit debugging**
- **Spectrum analyzer**
- **Network analyzer**
- **Soldering**
- **3-D printer & Laser cutters**

### Soft Skills

- **Presentation skills**
- **Communication skills** (oral and written)
- **Teamwork skills**
- **Leadership skills**
- **Organization & Project Management skills**
- **Community involvement**
- **Critical/system thinking**
- **Problem solving**

## Frequently Asked Questions

- **How can I learn about internship positions?** Start with [http://web.sonoma.edu/engineering/jobs/](http://web.sonoma.edu/engineering/jobs/)
- **How can I learn about summer research opportunities?** Ask a faculty. Learn more: [http://bit.ly/2JDvzM8](http://bit.ly/2JDvzM8)
- **When should I start thinking about graduate school?** Your sophomore year! Ask your advisor and talk to the MSCES graduate coordinator or contact the department chair. Learn about 4+1 program. Consider applying for McNair scholarship: [http://web.sonoma.edu/mcnair/](http://web.sonoma.edu/mcnair/)
- **Where can I go if I need extra help with my courses?** There are many tutoring opportunities available contact the Department Chair for more information.
- **What is I-Corp?** We highly encourage our EE students to participate at CSU I-Corps entrepreneurship competitions. Talk to the Department chair for more information. Learn more: [http://www.csuperb.org/csuicorps/](http://www.csuperb.org/csuicorps/)
- **How can I write an effective resume?** Attend IEEE Club workshops. You can always contact your advisor for help.
- **What are the skill-building workshops?** Consider attending workshops on resume building, CAD tools, 3D printing, PCB design, LabVIEW, etc.
- **How can I get involved with helping the department?** Ask the club president or the Department Chair.