

Roadmap to a Successful Engineering Education @ SSU!

In order to prepare for your future engineering career it is important you plan ahead. The following roadmap helps you understand when you are expected to participate in extracurricular activities and seek opportunities for hands-on experience, start looking for internship, prepare your resume, connect with a with professional groups such as IEEE, consider choosing a minor, start taking skill-building courses, test your skills and enter in a technical competition or hackathon, and think about attending a graduate program. By planning ahead and taking these steps, you'll make yourself a competitive college graduate and become a highly successful engineer.

Term	Year 1			Year 2			Year 3			Year 4		Year 5	
	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall
Fundamental Courses	Take Math, CS, & Physics Courses			Take Math & Physics									
Engineering Courses				Take Electronic Courses			Take the Advanced EE Courses			Take Technical EE Electives			
Hands-On Courses	Take Intro to Eng. EE 110 / EE 112			Take Electronics & Maker Space			Take Microcntl. & Prog. Courses			Take the Senior Design Project			
Skill Building Activities			Apply for Summer Proj.	Take CAD / 3D Print / PCB Design Workshops		Apply for Summer Proj.	Take 1-Unit Skill Building Labs			Take 1-Unit Skill Building Labs			
Community / Department Service	Get to Know the Senior Students			Help with Outreach			Help with Orientations & Outreach + Tutoring			Mentor Freshmen Students + Tutor			
Professional Activities	Become Involved in Clubs			Become Active in a Technical Club			Become a Club Officer IEEE / SWE Club			Become a Club Officer IEEE / SWE Club			
Real-World Experience & Activities				Got Resume? Consider Assisting Senior Students with Senior Design Project		Search for Summer Research, I-Corps or Internship	Improve Your Resume Participate in a Hackathon/Conference/ IEEE Competition, etc.		Find a Summer Internship	Show Your Resume to a Professional		Look for a Full-Time Job / Internship	Present at a Conf.: CSUPERB, IEEE, etc.
Plan on a Minor or Grad School				Start Planning for a Minor or Graduate School		Take GE Courses	Take CS Courses	Take CS Courses	Take GE Courses	Take CS or Grad. Courses	Take CS or Grad. Courses		
Apply for Scholarship		Apply for LSAMP	Apply for McNair/LSAMP Scholarship		Apply for Koret Scholarship								

For more information please contact your EE advisor!

Skills Acquired While Studying in the EE Program @ SSU

Software Skills

Advanced Software Packages

- Cadence/Synopsis
- Altera / Xilinx (HDL)
- ADS / CTS (Antenna Design)
- TensorFlow
- Azura / AWS / IBM BlueMix / Thingspeak / etc.

Operating Systems

- Linux / Windows

Web Development

- HTML/CSS
- JavaScript
- PHP
- dBase (SQL/MySQL/etc.)

Internet

- Wireshark

Utilities

- GitHub / Slack / Zoom

Programming Languages

- Python/Numby/Qt/ SciKit (for machine learning), etc.,
- C/C++
- Assembly

Software Packages

- Visio / draw.io / InkScape
- LabView
- OpenCV
- Matlab
- Fusion 360 / Solidworks / AutoCAD /etc.
- Keil MDK / Eclipse / MPLAB
- Eagle PCB/ Altium / KitCad EDA
- Spice / Multisim
- App Inventor / Android Development
- Visual Studio Code / Atom / PyCharm

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 become a better student?** You may want to review the the top 10 study habits employed by highly successful students: <https://ee.sonoma.edu/current-students/10-habits-highly-effective-students>
- **When should I start thinking about graduate school?** Your sophomore year! Ask your advisor and talk to the MSECe graduate coordinator or contact the department chair.
- **How can I write an effective resume?** Attend IEEE Club workshops. You can always contact your advisor for help. See <https://career.sonoma.edu/students/resumes>
- **What are the skill-building workshops?** Consider attending workshops on resume building, soldering, CAD tools, 3D printing, PCB design, LabVIEW, etc. See <https://ee.sonoma.edu/news-events/lectures-workshops/skill-building-workshops>
- **How can I get involved with helping the department?** Ask the club president or the Department Chair. See <https://ee.sonoma.edu/news-events>
- **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. See <https://ee.sonoma.edu/forms-and-resources/tutoring-and-tutorials>

Internship, Research and Scholarship Opportunities:

- **Internship Opportunities:** <https://ee.sonoma.edu/jobs-internships>
- **Scholarship Opportunities:** <https://scholarships.sonoma.edu/ssu-scholarships>
- **Research Opportunities:** <https://orsp.sonoma.edu/student-research>
- **McNair Scholarship:** <https://mcnair.sonoma.edu>
- **LSAMP Scholarship:** <https://scitech.sonoma.edu/lisamp/contact-lisamp>
- **I-Corps:** <https://www.csuperb.org/csucorps/>
- **Koret Scholarship:** <https://scitech.sonoma.edu/smc>