Semiconductor Science and Engineering: Circuits and Systems Minor

The transcript-recognized undergraduate academic minor in Semiconductor Science and Engineering must be completed in conjunction with an undergraduate degree at The University of Texas at Austin in one of the following majors: electrical and computer engineering, mechanical engineering, chemical engineering, physics, or chemistry.

For more information regarding the requirements for achieving a minor, including a comprehensive list of minors, please visit the Minors and Certificate Programs section of the *Undergraduate Catalog*.

Admissions

To be considered for admission into the minor in Semiconductor Science and Engineering, students must meet the following requirements:

- Degree-seeking status at UT Austin in one of the following majors: electrical and computer engineering, mechanical engineering, physics, or chemistry.
- Students who have completed 24 hours or more in residence will be encouraged to apply online. Applications will be reviewed by a multi-department faculty once a year (in the fall for a spring start).

Total Hours Required: 15

Requirements

Requirements are listed in the table below. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy General Education requirements, including Core Curriculum. Students should also review the University's Undergraduate Minor and Certificate Requirements and Policies.

Code	Title	Hours
SSE 360	Introduction to Semiconductor Science and Engineering	3
ECE 302	Introduction to Electrical Engineering (Required only for students without credit for ECE X02 or M E X40 or PHY X38K)	3
ECE 316	Digital Logic Design	3
or SSE 309	Digital Logic Design	
ECE 411	Circuit Theory	4
or SSE 410	Circuit Theory	
Hours chosen from:		3
ECE 325	Electromagnetic Engineering	
ECE 438	Fundamentals of Electronic Circuits I Laboratory	
ECE 438K	Analog Electronics	
ECE 440	Integrated Circuit Nanomanufacturing Techniques	
ECE 460R	Introduction to VLSI Design	
ECE 361R	Radio-Frequency Electronics	
ECE 462L	Power Electronics Laboratory	
ECE 363M	Microwave and Radio Frequency Engineering	
PHY 355	Modern Physics and Thermodynamics	
PHY 373	Quantum Physics I: Foundations	
SSE 360S	Advanced Packaging Manufacturing	
SSE 385C	Microelectronics Packaging and Thermal Management	
Total Hours		**16**

Additional Requirements and Policy:

- It is expected that students will start the minor in the second semester of their sophomore year.
- Academic course requirements include a three-hour gateway course and 12 additional hours from one of four tracks, for a total of 15 semester credit hours. Students may select from one of four tracks: semiconductor manufacturing, circuits and systems, heterogeneous integration, or semiconductor devices.
- All students must take Gateway class SSE 360.
- Students with credit for ECE 302 or M E 340 or PHY 338K will take 12 semester credit hours in their chosen track. Students who have not taken ECE 302 or M E 340 or PHY 338K are required to take ECE 302 as preparation for semiconductors-relevant courses in areas outside of their declared major and 9 semester credit hours in one of the four tracks.
- At least nine of the hours required for the minor must include coursework not used to satisfy the requirements of the student's major.
- All courses must be taken on a letter-grade basis, with a combined grade point average of at least 2.00.