Semiconductor Science and Engineering (SSE)

SSE 301 Topics in Semiconductor Manufacturing 3 Hours

SSE 303 Topics in Circuits and Systems 3 Hours

SSE 305 Topics in Heterogeneous Integration 3 Hours

SSE 307 Topics in Semiconductor Devices 3 Hours

SSE 309 Digital Logic Design 3 Hours
Explore semiconductor digital design and optimization.

SSE 310 Circuit Theory 3 Hours
Explore circuit theory in semiconductors.

SSE 360 Introduction to Semiconductor Science and Engineering 3 Hours
Introduction to semiconductor science and engineering.

SSE 360S Advanced Packaging Manufacturing 3 Hours

SSE 377K Projects in Semiconductor Science and Engineering 3 Hours
Produce an independent project carried out under the supervision of a faculty member in semiconductor science and engineering. Prepare a project proposal and a final report, each of which is evaluated by the faculty committee on individual projects.

SSE 380 Introduction to Semiconductors 3 Hours
Survey fundamental and important areas in semiconductor science and engineering including semiconductor device design, semiconductor manufacturing techniques, metrology and process control.

SSE 380C Topics in Semiconductor Science and Engineering 3 Hours

SSE 381 Semiconductor Processes 3 Hours
Explore a theoretical and practical introduction to contemporary fabrication techniques and methods.

SSE 382 Semiconductor Devices 3 Hours
Examine the design and physics underlying modern semiconductor devices.

SSE 383 Topics in Semiconductor Manufacturing 3 Hours

SSE 384 Topics in Semiconductor Circuits and Systems 3 Hours

SSE 385 Topics in Heterogeneous Integration and Advanced Packaging 3 Hours

SSE 385C Microelectronics Packaging and Thermal Management 3 Hours
Explore microelectronics packaging and thermal management in the semiconductor industry.

SSE 385D Materials for Packaging and Heterogeneous Integration 3 Hours
Explore techniques of applied aspects of materials used in packaging semiconductors including heterogeneous integration, reliability, cooling, and role of materials.

SSE 386 Topics in Semiconductor Devices 3 Hours

SSE 390 Semiconductor Manufacturing Laboratory 3 Hours
Explore how to operate fabrication tools in the cleanroom.

SSE 391 Semiconductor Metrology and Characterization Laboratory 3 Hours
Explore various different metrology techniques for analyzing materials and structures.

SSE 395 Research 3 Hours
Prepare for an independent research project in semiconductor science and engineering through developing literature review and technical writing skills.

SSE 397P Projects in Semiconductor Science and Engineering 3 Hours
Produce an independent project carried out under the supervision of a semiconductor science and engineering faculty member.

SSE 398R Master's Report 3 Hours
Prepare a report to fulfill the requirement for the master's degree.