

SEMICONDUCTOR MATERIALS AND DEVICES

Semiconductor Materials and Devices Program Curriculum Requirements

Code	Title	Credit Hours
First Year Experience		
CILE-101	First Year Foundations	1
General Education		
COMM-101	Rhetoric & Writing	4
ECON-201	Economic Principles	4
200-level Liberal Arts Elective		4
Advanced Humanities Elective		4
Advanced Social Science Elective		4
LA-489	Sr. Seminar:Leadership, Ethics	4
<i>Credit Hours Subtotal:</i>		25
Math and Science Foundation		
CHEM-135 or CHEM-137	Principles of Chemistry General Chemistry I	3
CHEM-136	Principles of Chemistry Lab	1
CHEM-237	General Chemistry II	3
CHEM-238	General Chemistry II Lab	1
CHEM-345	Organic Chemistry I	4
CHEM-346	Organic Chemistry I Lab	2
EP-335	Computational Physics	4
MATH-101 or MATH-101X	Calculus I Calculus I	4
MATH-102 or MATH-102X	Calculus II Calculus II	4
MATH-203 or MATH-203X	Multivariate Calculus Multivariate Calculus	4
MATH-258	Probability and Statistics	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
PHYS-224	Electricity and Magnetism	3
PHYS-225	Electricity and Magnetism Laboratory	1
SCI-100	Introduction to Semiconductors	4
<i>Credit Hours Subtotal:</i>		46
Program Core		
CHEM-337	Materials Synthesis	4
EE-325	Principles of Microelectronics Processing	4
EE-427	Semiconductor Device Fundamentals	4
EE-446	Vector Control of AC Electric Machines	4
PHYS-366	Quantum Physics	4
PHYS-376	Photonics and Optoelectronics	4
PHYS-465	Materials Characterization	4
<i>Credit Hours Subtotal:</i>		28
Engineering Courses		
CHME-230	Foundations of Materials	4
EE-210	Engineering Circuit Analysis 1	4

EE-320	Introduction to Microelectronic Devices and Circuits	4
<i>Credit Hours Subtotal:</i>		12

Undergraduate Thesis

CILE-400 & CILE-401	Undergraduate Thesis Initiation and Undergraduate Thesis Completion	4
------------------------	---	---

Total Credit Hours	115
---------------------------	------------

Course	Title	Credit Hours
Freshman I		
CILE-101	First Year Foundations	1
CHEM-135	Principles of Chemistry	3
CHEM-136	Principles of Chemistry Lab	1
SCI-100	Introduction to Semiconductors	4
COMM-101	Rhetoric & Writing	4
MATH-101 or MATH-101X	Calculus I or Calculus I	4
Credit Hours		17

Freshman II		
CHEM-237	General Chemistry II	3
CHEM-238	General Chemistry II Lab	1
CHME-230	Foundations of Materials	4
MATH-102 or MATH-102X	Calculus II or Calculus II	4
PHYS-114	Newtonian Mechanics	3
PHYS-115	Newtonian Mechanics Laboratory	1
Credit Hours		16

Sophomore I		
200-level Liberal Arts Elective		4
MATH-203	Multivariate Calculus	4
MATH-258	Probability and Statistics	4
PHYS-224	Electricity and Magnetism	3
PHYS-225	Electricity and Magnetism Laboratory	1
Credit Hours		16

Sophomore II		
CHEM-345	Organic Chemistry I	4
CHEM-346	Organic Chemistry I Lab	2
EE-210	Engineering Circuit Analysis 1	4
EP-335	Computational Physics	4
PHYS-366	Quantum Physics	4
Credit Hours		18

Junior I		
ECON-201	Economic Principles	4
EE-320	Introduction to Microelectronic Devices and Circuits	4
EP-446	Solid State Physics	4
PHYS-376	Photonics and Optoelectronics	4
Credit Hours		16

Junior II		
CHEM-337	Materials Synthesis	4
EE-325	Principles of Microelectronics Processing	4

LA-489	Sr. Seminar:Leadership, Ethics	4
Advanced Humanities or Social Science Elective		4
Credit Hours		16
Senior I		
EE-427	Semiconductor Device Fundamentals	4
PHYS-465	Materials Characterization	4
Advanced Humanities or Social Science Elective		4
Credit Hours		12
Any Term		
CILE-400 & CILE-401	Undergraduate Thesis Initiation and Undergraduate Thesis Completion	4
Credit Hours		4
Total Credit Hours		115