

Bachelor of Science in Computer Engineering

Computer Engineering (BSCE)

Degree Program Guide*

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Computer Engineering (BSCE)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory** or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15
Spring		
ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers or C++ Programming for Engineers	4
MATH 212	Calculus II (Grade of C or better required)	4
COMM 101R	Public Speaking	3
PHYS 231N	University Physics I	4
Credit Hours		15
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
ECE 241	Fundamentals of Computer Engineering	4
PHYS 232N	University Physics II	4
ECE 250	Object-Oriented Programming in C++ for Engineers	3
Credit Hours		17
Spring		
ECE 202	Circuit Analysis II	3

ECE 287	Fundamental Electric Circuit Laboratory	2
ENGL 231C or ENGL 211C	Writing, Rhetoric, and Research: Special Topics (Grade of C or better required) or Writing, Rhetoric, and Research	3
CS 252	Introduction to Unix for Programmers	1
CS 261	Java for Programmers	1
CS 381	Introduction to Discrete Structures	3
Literature Way of Knowing		3
Credit Hours		16
Junior		
Fall		
ECE 302 or ECE 306 or ECE 350 or ECE 314		3
ECE 304	Probability, Statistics, and Reliability	3
ECE 341	Digital System Design	3
CS 361	Data Structures and Algorithms	3
Human Creativity Way of Knowing		3
Credit Hours		15
Spring		
ECE 355	Introduction to Networks and Data Communications	3
ECE 342	Field Programmable Gate Arrays Design Laboratory	2
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350 or CS 330	Introduction to Software Engineering or Object-Oriented Design and Programming	3
Technical Elective***		3
Credit Hours		17
Senior		
Fall		
ECE 481W	Preparatory ECE Senior Design (Grade of C or better required)	3
ECE 443	Computer Architecture	3
Technical Elective***		3
ENMA 480	Ethics and Philosophy in Engineering Applications	3
Interpreting the Past Way of Knowing		3
Credit Hours		15
Spring		
ECE 482	ECE Senior Design	3
CS 471	Operating Systems	3
Technical Elective***		3
Human Behavior Way of Knowing		3
Credit Hours		12
Total Credit Hours		122

* Does not include the University's General Education language and culture requirement. Additional hours may be required.

** CHEM 120 is for online program students only.
 *** Computer Engineering major students need three technical elective courses selected from one of three options: (1) three 400-level ECE technical elective courses; (2) two 400-level ECE technical elective courses and one 300-level ECE technical elective course or one approved 300- or 400-level CS/MATH/Engineering course; (3) two 400-level ECE technical elective courses and one approved 300- or 400-level CS course or one approved 300- or 400-level CS/MATH/Engineering course.

Computer Engineering Major (BSCE) Dual Degree with Computer Science (BSCS)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology ²	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory ¹ or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15
Spring		
ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers ³ or C++ Programming for Engineers	4
Human Creativity Way of Knowing		3
MATH 212	Calculus II (Grade of C or better required)	4
PHYS 231N	University Physics I	4
Credit Hours		15
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
PHYS 232N	University Physics II	4
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
ECE 250	Object-Oriented Programming in C++ for Engineers	3
Credit Hours		16
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2

CS 252	Introduction to Unix for Programmers	1
CS 261	Java for Programmers	1
COMM 101R	Public Speaking	3
CS 381	Introduction to Discrete Structures	3
Human Behavior Way of Knowing		3
Credit Hours		16

Junior

Fall

ECE 241	Fundamentals of Computer Engineering	4
ECE 302 or ECE 306 or ECE 314 or ECE 350		3
CS 330	Object-Oriented Design and Programming	3
CS 390	Introduction to Theoretical Computer Science	3
CS 315	Computer Science Undergraduate Colloquium	1
Literature Way of Knowing		3
Credit Hours		17

Spring

ECE 355	Introduction to Networks and Data Communications	3
ECE 341	Digital System Design	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 361	Data Structures and Algorithms	3
CS 450 or CS 418	Database Concepts or Web Programming	3
Credit Hours		15

Senior

Fall

MATH 316	Introductory Linear Algebra	3
ECE 304	Probability, Statistics, and Reliability ⁴	3
CS 350	Introduction to Software Engineering	3
ENMA 480	Ethics and Philosophy in Engineering Applications ⁵	3
ECE Technical Elective I ⁶		3
Credit Hours		15

Spring

ECE 346	Microcontrollers ⁷	3
CS 417	Computational Methods and Software	3
CS 355	Principles of Programming Languages	3
CS Upper Level Elective I		3
Interpreting the Past Way of Knowing		3
Credit Hours		15

Fifth Year

Fall

ECE 342	Field Programmable Gate Arrays Design Laboratory	2
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ECE 481W	Preparatory ECE Senior Design (Grade of C or better required to meet the University Writing Intensive requirement)	3
ECE 443	Computer Architecture ⁸	3
CS 410	Professional Workforce Development I	3
CS Upper Level Elective II		3
Credit Hours		14
Spring		
ECE 482	ECE Senior Design	3
CS 471	Operating Systems	3
CS 411W	Professional Workforce Development II (Grade of C or better required to meet the University Writing Intensive requirement)	3
CS Upper Level Elective III		3
ECE Technical Elective II ⁶		3
Credit Hours		15
Total Credit Hours		153

- * Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 120 is for online program students only.
- 2 ENGN 121 satisfies the Computer Science Information Literacy & Research requirement.
- 3 ENGN 122 or ENGN 123 satisfies the Introduction to Programming requirement in the Computer Science curriculum.
- 4 ECE 304 satisfies the STAT 330 requirement in Computer Science curriculum
- 5 ENMA 480 satisfies the Computer Science Philosophy & Ethics requirement.
- 6 Computer Engineering students pursuing the dual degree with Computer Science have two remaining ECE 400-level Technical Elective courses.
- 7 ECE 346 satisfies the CS 170 requirement in Computer Science curriculum.
- 8 ECE 443 satisfies the CS 270 requirement in Computer Science curriculum.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science and through the completion of a second major/degree.

Computer engineering and computer science majors must earn a grade of C or better in all 200-level ECE courses and all CS courses prior to taking the next course in the sequence.

Any ECE course registration issues are to be resolved with the ECE Academic Coordinator and Program Manager.

The five-year plan is a suggested curriculum to complete this degree program in five years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Computer Engineering Major (BSCE) Dual Degree with Cyber Operations Major (BS Cybersecurity)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology ²	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory ¹ or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15
Spring		
ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers ³ or C++ Programming for Engineers	4
MATH 212	Calculus II (Grade of C or better required)	4
COMM 101R	Public Speaking	3
PHYS 231N	University Physics I	4
Credit Hours		15
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
ECE 241	Fundamentals of Computer Engineering	4
PHYS 232N	University Physics II	4
ECE 250	Object-Oriented Programming in C++ for Engineers	3
Credit Hours		17
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CYSE 200T	Cybersecurity, Technology, and Society	3
CS 261	Java for Programmers	1
CS 252	Introduction to Unix for Programmers	1
CS 381	Introduction to Discrete Structures	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
Credit Hours		16

Junior		
Fall		
ECE 302 or ECE 306 or ECE 314 or ECE 350		3
ECE 355	Introduction to Networks and Data Communications	3
ECE 341	Digital System Design	3
CS 361	Data Structures and Algorithms	3
CRJS 215S or SOC 201S	Introduction to Criminology or Introduction to Sociology	3
Credit Hours		15
Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 346	Microcontrollers ⁴	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350 or CS 330	Introduction to Software Engineering or Object-Oriented Design and Programming	3
ECE 342	Field Programmable Gate Arrays Design Laboratory	2
ENMA 480	Ethics and Philosophy in Engineering Applications	3
Credit Hours		17
Senior		
Fall		
ECE 481W	Preparatory ECE Senior Design (Grade of C or better required to meet the University Writing Intensive requirement)	3
ECE 443	Computer Architecture ⁵	3
CYSE 301	Cybersecurity Techniques and Operations	3
CS 471	Operating Systems	3
Credit Hours		12
Spring		
ECE 482	ECE Senior Design	3
ECE 419	Cyber Physical System Security ⁶	3
ECE 455	Network Engineering and Design ⁶	3
CYSE 406 or CRJS 406	Cyber Law or Cyber Law	3
Interpreting the Past Way of Knowing		3
Credit Hours		15
Fifth Year		
Fall		
ECE 416	Cyber Defense Fundamentals ⁶	3
CYSE 425W	Cybersecurity Strategy and Policy (Grade of C or better required to meet the University Writing Intensive requirement)	3
CS 467	Introduction to Reverse Software Engineering	3
ECE 470	Foundations of Cyber Security	3
Cyber Approved Program Elective ⁷		3

Human Creativity Way of Knowing		3
Credit Hours		18
Spring		
CS 390	Introduction to Theoretical Computer Science	3
CS 466	Principles and Practice of Cyber Defense	3
CYSE 368 or CYSE 494	Cybersecurity Internship or Entrepreneurship in Cybersecurity	3
PHIL 355E	Cybersecurity Ethics	3
Literature Way of Knowing		3
Credit Hours		15
Total Credit Hours		155

- * Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 120 is for online program students only.
- 2 ENGN 121 satisfies the Cyber Operations Information Literacy & Research requirement.
- 3 ENGN 122 or ENGN 123 satisfies the CS 150 requirement in Cyber Operations curriculum.
- 4 ECE 346 satisfies the CS 170 requirement in Cyber Operations curriculum.
- 5 ECE 443 satisfies the CS 270 requirement in Cyber Operations curriculum.
- 6 These courses are required courses for the Cyber Operations curriculum & ECE Technical Electives for Computer Engineering curriculum.
- 7 Cyber Approval Program Elective remaining options: CS 476, CYSE 407, ECE 483, and IT 417.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science and through the completion of a second major/degree.

Computer engineering and cyber operations majors must earn a grade of C or better in all 200-level ECE courses and all CS courses prior to taking the next course in the sequence.

Any ECE course registration issues are to be resolved with the ECE Academic Coordinator and Program Manager.

The five-year plan is a suggested curriculum to complete this degree program in five years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Computer Engineering Major (BSCE) Dual Degree with Cybersecurity Major (BS Cybersecurity)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology ²	4
CHEM 121N	Foundations of Chemistry I Lecture	3

CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory ¹ or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15
Spring		
ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers or C++ Programming for Engineers	4
MATH 212	Calculus II (Grade of C or better required)	4
COMM 101R	Public Speaking	3
PHYS 231N	University Physics I	4
Credit Hours		15
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
ECE 241	Fundamentals of Computer Engineering	4
PHYS 232N	University Physics II	4
ECE 250	Object-Oriented Programming in C++ for Engineers	3
Credit Hours		17
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CYSE 200T	Cybersecurity, Technology, and Society	3
CS 252	Introduction to Unix for Programmers	1
CS 261	Java for Programmers	1
CS 381	Introduction to Discrete Structures	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
Credit Hours		16
Junior		
Fall		
ECE 302 or ECE 306 or ECE 314 or ECE 350		3
ECE 341	Digital System Design	3
CS 361	Data Structures and Algorithms	3
CYSE 201S	Cybersecurity and the Social Sciences	3
CYSE 250	Basic Cybersecurity Programming and Networking	3
Credit Hours		15

Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 342	Field Programmable Gate Arrays Design Laboratory	2
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350 or CS 330	Introduction to Software Engineering or Object-Oriented Design and Programming	3
CRJS 215S or SOC 201S	Introduction to Criminology (Human Behavior Way of Knowing) ³ or Introduction to Sociology	3
Credit Hours		17
Senior		
Fall		
ECE 481W	Preparatory ECE Senior Design (Grade of C or better required to meet the University Writing Intensive requirement)	3
ECE 443	Computer Architecture	3
ECE 355	Introduction to Networks and Data Communications	3
ECE 452	Fundamentals of Radio Communications and Wireless Networking ⁴	3
CYSE 301	Cybersecurity Techniques and Operations	3
Credit Hours		15
Spring		
ECE 482	ECE Senior Design	3
ECE 419	Cyber Physical System Security ⁴	3
ECE 455	Network Engineering and Design ⁴	3
CS 471	Operating Systems	3
CYSE 406 or CRJS 406	Cyber Law or Cyber Law	3
Interpreting the Past Way of Knowing		3
Credit Hours		18
Fifth Year		
Fall		
ECE 416	Cyber Defense Fundamentals ⁴	3
CYSE 300	Introduction to Cybersecurity	3
CS 462	Cybersecurity Fundamentals	3
PHIL 355E	Cybersecurity Ethics	3
IDS 300W	Interdisciplinary Theory and Concepts (Grade of C or better required to meet the University Writing Intensive requirement)	3
Human Creativity Way of Knowing		3
Credit Hours		18
Spring		
IDS 493	IDS Electronic Portfolio Project	3

CYSE 368 or CYSE 494	Cybersecurity Internship or Entrepreneurship in Cybersecurity	3
CYSE 425W or POLS 425W	Cybersecurity Strategy and Policy (Grade of C or better required to meet the University Writing Intensive requirement) or Cybersecurity Strategy and Policy	3
ENMA 480	Ethics and Philosophy in Engineering Applications	3
Literature Way of Knowing		3
Credit Hours		15
Total Credit Hours		161

- * Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 120 is for online program students only.
- 2 ENGN 121 satisfies the Cybersecurity Information Literacy & Research requirement.
- 3 CRJS 215S or SOC 201S satisfies the University's Human Behavior Way of Knowing requirement.
- 4 These courses are required courses for Cybersecurity curriculum (satisfying 2 Principles & 2 Application Courses) & ECE Technical Electives for Computer Engineering curriculum.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science and through the completion of a second major/degree.

Computer engineering and cybersecurity majors must earn a grade of C or better in all 200-level ECE courses and all CS courses prior to taking the next course in the sequence.

Any ECE course registration issues are to be resolved with the ECE Academic Coordinator and Program Manager.

The five-year plan is a suggested curriculum to complete this degree program in five years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Electrical Engineering (BSEE) Dual Major/Degree with Computer Engineering Major (BSCE)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory ** or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15

Spring

ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers or C++ Programming for Engineers	4
MATH 212	Calculus II (Grade of C or better required)	4
COMM 101R	Public Speaking	3
PHYS 231N	University Physics I	4
Credit Hours		15

Sophomore

Fall

MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
ECE 201	Circuit Analysis I	3
PHYS 232N	University Physics II	4
CS 381	Introduction to Discrete Structures	3
Human Creativity Way of Knowing		3
Credit Hours		19

Spring

ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
ECE 241	Fundamentals of Computer Engineering	4
CS 252	Introduction to Unix for Programmers	1
ECE 250	Object-Oriented Programming in C++ for Engineers	3
MATH 312 or MATH 285	Calculus III or Transfer Credit for Calculus III	4
Credit Hours		17

Junior

Fall

ECE 302	Linear System Analysis	3
ECE 304	Probability, Statistics, and Reliability	3
ECE 461	Automatic Control Systems	3
ECE 341	Digital System Design	3
CS 261	Java for Programmers	1
Interpreting the Past Way of Knowing		3
Credit Hours		16

Spring

ECE 303	Introduction to Electrical Power	3
ECE 313	Electronic Circuits	4
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3

CS 361	Data Structures and Algorithms	3
ECE 451	Communication Systems	3
Credit Hours		19
Senior		
Fall		
ECE 342	Field Programmable Gate Arrays Design Laboratory	2
ECE 323	Electromagnetics	3
ECE 481W	Preparatory ECE Senior Design (Grade of C or better required)	3
ECE 443	Computer Architecture	3
ECE 332	Microelectronic Materials and Processes	3
ECE 355	Introduction to Networks and Data Communications	3
Credit Hours		17
Spring		
ECE 482	ECE Senior Design	3
CS 350 or CS 330	Introduction to Software Engineering or Object-Oriented Design and Programming	3
CS 471	Operating Systems	3
ENMA 480	Ethics and Philosophy in Engineering Applications	3
Human Behavior Way of Knowing		3
Literature Way of Knowing		3
Credit Hours		18
Total Credit Hours		136

* Does not include the University's General Education language and culture requirement. Additional hours may be required.

** CHEM 120 is for online program students only.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science and through the completion of a second major/degree.

Electrical & Computer engineering majors must earn a grade of C or better in all 200-level ECE courses and all CS courses prior to taking the next course in the sequence.

Any ECE course registration issues are to be resolved with the ECE Academic Coordinator and Program Manager. Students must have a 3.00 GPA or better and must obtain approval from their advisor and college dean to register for more than 18 hours in a semester.

The five-year plan is a suggested curriculum to complete this degree program in five years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Students seeking two degrees must complete a minimum of 150 credit hours.

Modeling & Simulation Engineering Major (BSCE) Dual Degree with Computer Science (BSCS)

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 121	Introduction to Engineering and Technology ²	4
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N or CHEM 120	Foundations of Chemistry I Laboratory ¹ or Foundations of Chemistry I Laboratory for Online Degree Programs	1
MATH 211	Calculus I (Grade of C or better required)	4
ENGL 110C	English Composition (Grade of C or better required)	3
Credit Hours		15
Spring		
ENGN 122 or ENGN 123	MATLAB and C++ Programming for Engineers ³ or C++ Programming for Engineers	4
MATH 212	Calculus II (Grade of C or better required)	4
PHYS 231N	University Physics I	4
Human Creativity Way of Knowing		3
Credit Hours		15
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
PHYS 232N	University Physics II	4
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
ECE 250	Object-Oriented Programming in C++ for Engineers	3
Credit Hours		16
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 261	Java for Programmers	1
CS 252	Introduction to Unix for Programmers	1
CS 381	Introduction to Discrete Structures	3
COMM 101R	Public Speaking	3
Human Behavior Way of Knowing		3
Credit Hours		16

Junior		
Fall		
ECE 241	Fundamentals of Computer Engineering	4
ECE 302	Linear System Analysis	3
CS 330	Object-Oriented Design and Programming	3
CS 390	Introduction to Theoretical Computer Science	3
CS 315	Computer Science Undergraduate Colloquium	1
Literature Way of Knowing		3
Credit Hours		17
Spring		
ECE 381	Introduction to Discrete-time Signal Processing	3
ECE 341	Digital System Design	3
ECE 304	Probability, Statistics, and Reliability ⁴	3
CS 361	Data Structures and Algorithms	3
CS 450 or CS 418	Database Concepts or Web Programming	3
Credit Hours		15
Senior		
Fall		
MATH 316	Introductory Linear Algebra	3
ECE 306	Discrete System Modeling and Simulation	3
CS 350	Introduction to Software Engineering	3
ENMA 480	Ethics and Philosophy in Engineering Applications ⁵	3
ECE Technical Elective I ⁶		3
Credit Hours		15
Spring		
ECE 320	Continuous System Modeling and Simulation	3
ECE 346	Microcontrollers ⁷	3
ECE 348	Simulation Software Design	3
CS 417	Computational Methods and Software	3
CS 355	Principles of Programming Languages	3
CS Upper Level Elective I		3
Credit Hours		18
Fifth Year		
Fall		
ECE 481W	Preparatory ECE Senior Design (Grade of C or better required to meet the University Writing Intensive requirement)	3
ECE 406	Computer Graphics and Visualization	3
ECE 443	Computer Architecture ⁸	3
ENMA 410	Agile Project Management	3
CS 410	Professional Workforce Development I	3

CS Upper Level Elective II		3
Credit Hours		18
Spring		
ECE 482	ECE Senior Design	3
CS 471	Operating Systems	3
CS 411W	Professional Workforce Development II (Grade of C or better required to meet the University Writing Intensive requirement)	3
CS Upper Level Elective III		3
Interpreting the Past Way of Knowing		3
Credit Hours		15
Total Credit Hours		160

- * Does not include the University's General Education language and culture requirement. Additional hours may be required.
- 1 CHEM 120 is for online program students only.
- 2 ENGN 121 satisfies the Computer Science Information Literacy & Research requirement.
- 3 ENGN 122 or ENGN 123 satisfies the Introduction to Programming requirement in the Computer Science curriculum.
- 4 ECE 304 satisfies the STAT 330 requirement in Computer Science curriculum
- 5 ENMA 480 satisfies the Computer Science Philosophy & Ethics requirement.
- 6 Computer Engineering - Modeling & Simulation Engineering Major students pursuing the dual degree with Computer Science have one remaining ECE 400-level Technical Elective course.
- 7 ECE 346 satisfies the CS 170 requirement in Computer Science curriculum.
- 8 ECE 443 satisfies the CS 270 requirement in Computer Science curriculum.

The General Education requirements in information literacy and research, impact of technology, and philosophy and ethics are met through the major. The upper-division General Education requirement is met through a built-in minor in computer science and through the completion of a second major/degree.

Modeling & Simulation Engineering and Computer Science majors must earn a grade of C or better in all 200-level ECE courses and all CS courses prior to taking the next course in the sequence.

Any ECE course registration issues are to be resolved with the ECE Academic Coordinator and Program Manager.

The five-year plan is a suggested curriculum to complete this degree program in five years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.