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

Course	Title	Credit Hours
Freshman		
Fall		
ENGN 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition (grade of C or better required)	3
COMM 101R	Public Speaking	3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering	2
CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
PHYS 231N	University Physics I	4
ENGN 150	Computer Programming for Engineering Problem Solving	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations (280) 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
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
	Credit Hours	**17**
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
CS 381	Introduction to Discrete Structures	3
Literature Way of Knowing		3
	Credit Hours	**16**
Junior		
Fall		
ECE 302	Linear System Analysis	3
ECE 313	Electronic Circuits	4
ECE 341	Digital System Design	3
CS 361	Data Structures and Algorithms	3
Human Creativity Way of Knowing		3
	Credit Hours	**16**
Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350	Introduction to Software Engineering	3
Technical Elective ***		3
	Credit Hours	**15**
Senior		
Fall		
ECE 484W	Computer Engineering Design I (grade of C or better required)	3
ECE 486	Preparatory ECE Senior Design II	2
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	**17**
Spring		
ECE 487	ECE Senior Design II	2
CS 471	Operating Systems	3
Technical Elective ***		3
Technical Elective ***		3
Human Behavior Way of Knowing		3
	Credit Hours	**14**
	Total Credit Hours	**128**

* 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 four technical elective courses selected from one of three options: (1) four 400-level ECE technical elective courses; (2) three 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 and 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 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition (grade of C or better required)	3
Human Creativity Way of Knowing		3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering [2]	2
CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
PHYS 231N	University Physics I	4
ENGN 150	Computer Programming for Engineering Problem Solving [3]	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations (280) or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
PHYS 232N	University Physics II	4
COMM 101R	Public Speaking	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
	Credit Hours	**16**
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
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	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 313	Electronic Circuits	4
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	**16**
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		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 484W	Computer Engineering Design I	3
ECE 486	Preparatory ECE Senior Design II	2
ECE 443	Computer Architecture [8]	3
CS 410	Professional Workforce Development I	3

CS Upper Level Elective II		3
	Credit Hours	**14**
Spring		
ECE 487	ECE Senior Design II	2
CS 471	Operating Systems	3
CS 411W	Professional Workforce Development II	3
CS Upper Level Elective III		3
ECE Technical Elective II [6]		3
	Credit Hours	**14**
	Total Credit Hours	**156**

* 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 ECE 111 and other ECE required courses satisfy the Computer Science Information Literacy & Research requirement of CS 121G.

3 ENGN 150 satisfies the CS 150 requirement in 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 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition (grade of C or better required)	3
COMM 101R	Public Speaking	3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering [2]	2
CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
PHYS 231N	University Physics I	4
ENGN 150	Computer Programming for Engineering Problem Solving [3]	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations (280) 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
CYSE 200T	Cybersecurity, Technology, and Society	3
	Credit Hours	**17**
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
CS 381	Introduction to Discrete Structures	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
	Credit Hours	**16**
Junior		
Fall		
ECE 302	Linear System Analysis	3
ECE 313	Electronic Circuits	4
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	**16**

Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 346	Microcontrollers [4]	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350	Introduction to Software Engineering	3
ENMA 480	Ethics and Philosophy in Engineering Applications	3
	Credit Hours	**15**
Senior		
Fall		
ECE 484W	Computer Engineering Design I (grade of C or better required)	3
ECE 486	Preparatory ECE Senior Design II	2
ECE 443	Computer Architecture [5]	3
CYSE 301	Cybersecurity Techniques and Operations	3
ECE 355	Introduction to Networks and Data Communications [6]	3
	Credit Hours	**14**
Spring		
ECE 487	ECE Senior Design II	2
ECE 419	Cyber Physical System Security [6]	3
ECE 455	Network Engineering and Design [6]	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	**17**
Fifth Year		
Fall		
ECE 416	Cyber Defense Fundamentals [6]	3
CYSE 425W	Cybersecurity Strategy and Policy	3
CS 467	Introduction to Reverse Software Engineering	3
ECE 470 or MSIM 470	Foundations of Cyber Security or 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	**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 ECE 111 and other ECE required courses satisfy the Cyber Operations Information Literacy & Research requirement.

3 ENGN 150 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 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition (grade of C or better required)	3
COMM 101R	Public Speaking	3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering [2]	2

CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
PHYS 231N	University Physics I	4
ENGN 150	Computer Programming for Engineering Problem Solving	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations (280) 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
CYSE 200T	Cybersecurity, Technology, and Society	3
	Credit Hours	**17**
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
CS 381	Introduction to Discrete Structures	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
	Credit Hours	**16**
Junior		
Fall		
ECE 302	Linear System Analysis	3
ECE 313	Electronic Circuits	4
ECE 341	Digital System Design	3
CS 361	Data Structures and Algorithms	3
CYSE 250	Basic Cybersecurity Programming and Networking	3
	Credit Hours	**16**
Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 350	Introduction to Software Engineering	3
CYSE 201S	Cybersecurity and the Social Sciences	3
CRJS 215S or SOC 201S	Introduction to Criminology (Human Behavior Way of Knowing) [3] or Introduction to Sociology	3
	Credit Hours	**18**
Senior		
Fall		
ECE 484W	Computer Engineering Design I (grade of C or better required)	3
ECE 486	Preparatory ECE Senior Design II	2
ECE 443	Computer Architecture	3
ECE 355	Introduction to Networks and Data Communications	3
ECE 452	Introduction to Wireless Communication Networks [4]	3
CYSE 301	Cybersecurity Techniques and Operations	3
	Credit Hours	**17**
Spring		
ECE 487	ECE Senior Design II	2
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	**17**
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	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 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	**167**

* 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 ECE 111 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 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition	3
COMM 101R	Public Speaking	3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering	2
CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
ENGN 150	Computer Programming for Engineering Problem Solving	4
PHYS 231N	University Physics I	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	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 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
MATH 312 or MATH 285	Calculus III or Transfer Credit for Calculus III	4
	Credit Hours	**18**
Junior		
Fall		
ECE 302	Linear System Analysis	3
ECE 303	Introduction to Electrical Power	3
ECE 313	Electronic Circuits	4
ECE 341	Digital System Design	3
Interpreting the Past Way of Knowing		3
	Credit Hours	**16**
Spring		
ECE 304	Probability, Statistics, and Reliability	3
ECE 323	Electromagnetics	3
ECE 346	Microcontrollers	3
ECE 381	Introduction to Discrete-time Signal Processing	3
CS 361	Data Structures and Algorithms	3
ENMA 480	Ethics and Philosophy in Engineering Applications	3
	Credit Hours	**18**
Senior		
Fall		
ECE 484W	Computer Engineering Design I	3
ECE 485W	Electrical Engineering Design I	3
ECE 486	Preparatory ECE Senior Design II	2

ECE 443	Computer Architecture	3
ECE 332	Microelectronic Materials and Processes	3
Literature Way of Knowing		3
	Credit Hours	**17**
Spring		
ECE 487	ECE Senior Design II	2
CS 350	Introduction to Software Engineering	3
CS 471	Operating Systems	3
ECE 387	Microelectronics Fabrication Laboratory	3
Technical Elective ***		3
Human Behavior Way of Knowing		3
	Credit Hours	**17**
	Total Credit Hours	**138**

* 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.

*** Electrical & Computer Engineering students pursuing the double major/degree need their final technical elective course to be a 400-level ECE technical elective course.

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.

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 110	Explore Engineering and Technology	2
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	4
ENGL 110C	English Composition (grade of C or better required)	3
Human Creativity Way of Knowing		3
	Credit Hours	**16**
Spring		
ECE 111	Information Literacy and Research for Electrical and Computer Engineering [2]	2
CHEM 123N	Foundations of Chemistry II Lecture	3
MATH 212	Calculus II	4
PHYS 231N	University Physics I	4
ENGN 150	Computer Programming for Engineering Problem Solving [3]	4
	Credit Hours	**17**
Sophomore		
Fall		
MATH 307 or MATH 280	Ordinary Differential Equations (280) or Transfer Credit for Ordinary Differential Equations	3
ECE 201	Circuit Analysis I	3
PHYS 232N	University Physics II	4
COMM 101R	Public Speaking	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research or Writing, Rhetoric, and Research: Special Topics	3
	Credit Hours	**16**
Spring		
ECE 202	Circuit Analysis II	3
ECE 287	Fundamental Electric Circuit Laboratory	2
CS 251 or CS 250	Programming with Java or Programming with C++	4
CS 252	Introduction to Unix for Programmers	1
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	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 313	Electronic Circuits	4
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	**16**
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 406	Computer Graphics and Visualization	3
ECE 443	Computer Architecture [8]	3
ECE 484W	Computer Engineering Design I	3
ECE 486	Preparatory ECE Senior Design II	2
CS 410	Professional Workforce Development I	3
CS Upper Level Elective II		3
	Credit Hours	**17**
Spring		
ECE 487	ECE Senior Design II	2
CS 471	Operating Systems	3
CS 411W	Professional Workforce Development II	3
CS Upper Level Elective III		3
Interpreting the Past Way of Knowing		3
	Credit Hours	**14**
	Total Credit Hours	**162**

* 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 ECE 111 and other ECE required courses satisfy the Computer Science Information Literacy & Research requirement of CS 121G.

3 ENGN 150 satisfies the CS 150 requirement in 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.