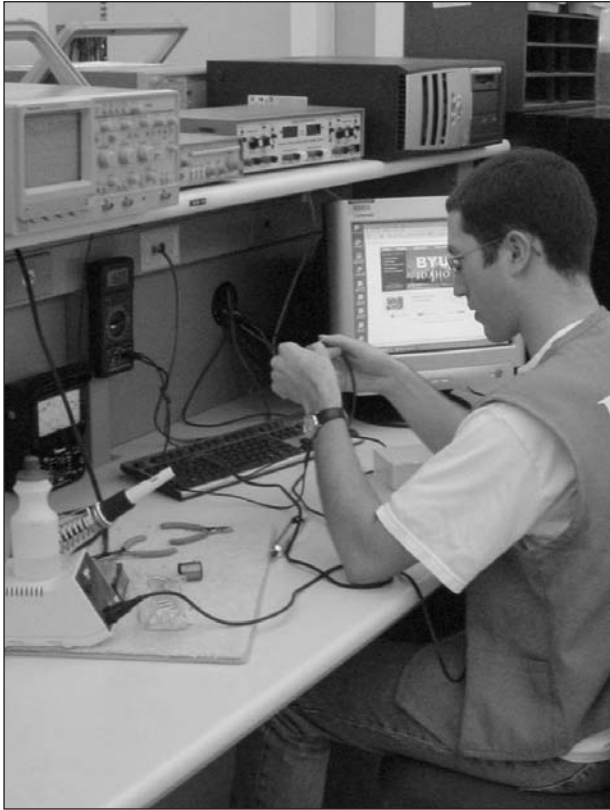


Department of

# Computer Science & Engineering



## Gordon Black, Department Chair

Gordon Black, Scott Ercanbrack, Rex Fisher, James Helfrich, Ron Jones, Eric Karl, Rick Neff, Kevin Smith, Kevin Twitchell  
Merlynn Price, Secretary (208) 496-1880  
<http://www.byui.edu/CSE/>

## Department of Computer Science and Engineering

The curriculum in the Computer Science and Engineering Department is designed to provide a broad background in the theory, development and application of computer hardware and software. Students learn how to combine scientific knowledge and engineering methods with practical technical skills to help prepare them for life-long learning and rewarding employment.

Three degree programs are offered:

- 1) B.S. in Computer Science (CS)
- 2) B.S. in Electrical & Computer Engineering (ECE)
- 3) A.A.S. in Electronics Engineering Technology (EET)

The graduates of the Computer Science and Engineering Department:

- will have a thorough grounding in the fundamental principles and practices within their respective programs,
- will have an understanding of the contexts in which their respective program is applied,
- will be prepared for immediate employment in their respective

programs

- will be ethical and responsible employees.

The Department of Computer Science and Engineering strives to evaluate, improve, and keep current its curriculum and the learning and teaching environment.

Your advisor can help you determine the best sequence of courses to meet all graduation requirements within eight semesters.

To qualify for graduation students must achieve at least a C- grade in every class.

## Computer Science

The Computer Science major provides a solid background in Computer Science by providing experience in algorithm development, procedural and object-oriented design and programming, software engineering practices, data structures, computer organization, and theoretical foundations.

## Electrical and Computer Engineering

This curriculum focuses on preparing students to enter industry as electrical or computer engineers. Scientific and engineering theory is an important element of the program. Laboratory experiences are included in most courses to develop practical skills that working engineers must possess.

## Electronics Engineering Technology

Graduates are prepared for employment as Electronics Engineering Technicians or to transfer into B.S. programs in Electronics Engineering Technology at another university. Students gain knowledge and skills in analog circuits, digital circuits, semiconductors, linear integrated circuits, troubleshooting, RF communications, control systems, and microprocessors.

The Electronics Engineering Technology program at Brigham Young University-Idaho has been continuously accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET) since 1970. Call (410) 347-7700 or visit the web page at [www.abet.org](http://www.abet.org) for more information about this accreditation.

**AAS in Electronics Engineering Technology**

**Basic Education Requirements**

I. Communication:	II. Computation:	III. Human Relations:	IV. Related Skills:	Religion Requirement:
<i>Take 1 course:</i>	<i>Take 1 course:</i>	<i>Take 1 course:</i>	<i>Take 1 course:</i>	<i>Take these courses:</i>
ENG 111 3	MATH 110 3	AGBUS 238 3	ENG 316 3	REL 121 2
ENG 111C 3		AMHER 170 3	ENG 316C 3	REL 122 2
		ANTH 101 3		<b>OR</b>
		B 370 3		<i>Take this course:</i>
		CHILD 210 3		REL 221 4
		GEOG 120 3		<b>AND</b>
		HIST 120 3		<i>Take 3 credits:</i>
		HIST 121 3		REL 100 2
		HIST 201 3		REL 130 2
		HIST 202 3		REL 211 3
		HON 201 3		REL 234 2
		POLSC 110 3		REL 261 2
		POLSC 170 3		REL 264 2
		PSYCH 111 3		REL 301 3
		PSYCH 201 3		REL 302 3
		SOC 111 3		REL 324 3
		SOC 112 3		REL 333 2
		SOC 323 3		REL 341 2
		SOC 357 3		REL 342 3
				REL 351 2
				REL 352 2
				REL 370 2
				REL 431 2
				REL 471 3
				REL 475 2

**Total GE Credits=19**

**Major Requirements**

*No Double Counting of Major Courses - No Grade Less Than C- in Major Courses*

<i>Take these courses:</i>	<i>Take this course:</i>	<i>Program Notes:</i>
CS 124 3	Chem 105 4	
COMPE 224 3	4	
EET 150 4	<b>OR</b>	
EET 153 4	<i>Take these courses:</i>	
EET 250 3	PH 123 3	
EET 251 3	PH 150 1	
EET 252 3	4	
EET 253 3		
EET 255 3		
ME 172 3		
MATH 111 2		
MATH 112 4		
PH 121 3		
41		

**Total Major Credits=45**

This major is available on the following tracks:

Fall-Winter--- YES

Winter-Summer--- NO

Summer-Fall--- NO

**BS in Computer Science**

**General Education Requirements**

<p><b>I. Reading and Writing:</b> <i>Take 1 course:</i> ENG 111 3 ENG 111C 3 <b>AND</b> <i>Take 1 course:</i> ENG 316 3 ENG 316C 3</p> <p><b>II. Mathematics:</b> <i>Take 1 course:</i> MATH 110 3</p> <p><b>III. Basic Skills:</b> <i>Take 1 course:</i> CS 373 3</p> <p>Exceptions to Policy: As a General Education course in Computer Science (CS 100) is somewhat basic, Computer Science Majors will be allowed to use CS 373 to meet the Basic Skills requirement for General Education.</p>	<p><b>IV. Arts:</b> <i>Take 1 course:</i> ART 101 3 ART 104 3 ART 160 3 ART 201 3 ART 202 3 DANCE 101 3 HFED 140 3 HORT 230 3 HUM 101 3 HUM 201 3 HUM 202 3 MUSIC 100 3 MUSIC 101 3 TA 115 3 TA 117 3 <b>AND</b> <i>Take this course:</i> FA 100 0-1</p> <p><b>VIII. American Institutions:</b> <i>Take 1 course:</i> AMHER 170 3 ECON 111 3 HIST 120 3 HIST 121 3 POLSC 110 3</p>	<p><b>V. Letters:</b> <i>Take 1 course:</i> CHIN 202 3 ENG 250 3 ENG 251 3 ENG 331 3 ENG 332 3 ENG 333 3 ENG 334 3 ENG 335 3 ENG 351 3 ENG 352 3 ENG 353 3 ENG 354 3 ENG 362 3 ENG 373 3 FR 202 3 GER 202 3 LANG 202 3 PH 314 3 PHIL 110 3 PHIL 201 3 PHIL 202 3 PHIL 313 3 PHIL 314 3 PHIL 315 3 RUSS 340 3 SPAN 202 3 SPAN 302 3</p>	<p><b>VI. Biological Science:</b> <i>Take 4 credits:</i> BIO 176 4 BIO 150 3 BIO 150L 1 BIO 208 4 BIO 221 3 BIO 222 1 BIO 250 4</p> <p><b>VII. Physical Science:</b> <i>Take 1 course:</i> CHEM 105 4 <b>OR</b> <i>Take these courses:</i> GEOL 111 3 GEOL 111L 1</p> <p><b>IX. Social Science:</b> <i>Take 1 course:</i> ANTH 101 3 CHILD 210 3 ECON 111 3 ECON 112 3 ED 270 3 GEOG 120 3 HIST 201 3 HIST 202 3 PHIL 203 3 PHIL 204 3 POLSC 110 3 POLSC 170 3 PSYCH 111 3 PSYCH 201 3 SOC 111 3 SOC 112 3</p>	<p><b>Religion Requirement:</b> (Book of Mormon) <i>Take these courses:</i> REL 121 2 REL 122 2 <b>OR</b> <i>Take this course:</i> REL 221 <b>AND</b> (Scripture Based Courses) <i>Take 6 credits:</i> REL 211 3 REL 212 2 REL 301 3 REL 301H 3 REL 302 3 REL 302H 3 REL 324 3 <b>AND</b> (Other Religion Courses) <i>Take 4 credits:</i> REL 100 2 REL 130 2 REL 215 2 REL 234 2 REL 235 2 REL 261 2 REL 264 2 REL 333 2 REL 341 2 REL 342 3 REL 351 2 REL 352 2 REL 360 4 REL 370 2 REL 431 2 REL 471 3 REL 475 2</p>
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**Total GE Credits=46**

**Major Requirements**

*No Double Counting of Major Courses - No Grade Less Than C- in Major Courses*

<p><i>Take these courses:</i> CS 124 3 CS 165 3 CS 202 1 CS 235 3 CS 236 4 CS 246 3 CS 306 3 CS 345 3 CS 371 2 CS 399 2 CS 426 4 CS 427 4 <i>cont. next column</i></p>	<p>CS 499 3 COMPE 224 3 COMPE 324 3 MATH 111 2 MATH 112 4 MATH 321 3 MATH 341 3 <hr/>56</p> <p><b>Take 9 credits:</b> CIT 320 3 COMPE 360 3 CS 460 3 CS 470 3 CS 480 3 <hr/>9</p>	<p><i>Take 1 course:</i> CS 398 1-4 CS 498R 1-4 <hr/>1</p> <p><i>Take this course:</i> CHEM 106 4 <hr/>4</p> <p><b>OR</b></p> <p><i>Take these courses:</i> GEOL 112 3 GEOL 112L 1 <hr/>4</p>	<p><b>Program Notes:</b> <i>Students who take Chem 105 must take Chem 106.</i>  <i>Students who take Geol 111 and 111L must take Geol 112 and 112L.</i></p>
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**Total Major Credits=70**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- YES

**BS in Computer Engineering**

**General Education Requirements**

<p><b>I. Reading and Writing:</b> <i>Take 1 course:</i> ENG 111 3 ENG 111C 3 <b>AND</b> <i>Take 1 course:</i> ENG 316 3 ENG 316C 3</p> <p><b>II. Mathematics:</b> <i>Take 1 course:</i> MATH 112 4</p> <p><b>III. Basic Skills:</b> <i>Take 1 course:</i> CIT 140 3 COMM 102 3 COMM 150 3 CS 100 1 HS 131 2 HS 131W 2 <b>OR</b> <i>Take 1 course:</i> ESS 177 1 <b>AND</b> <i>Take 1 course:</i> Any 100 Level ESS Course</p>	<p><b>IV. Arts:</b> <i>Take 1 course:</i> ART 101 3 ART 104 3 ART 160 3 ART 201 3 ART 202 3 DANCE 101 3 HFED 140 3 HORT 230 3 HUM 101 3 HUM 201 3 HUM 202 3 MUSIC 100 3 MUSIC 101 3 TA 115 3 TA 117 3 <b>AND</b> <i>Take this course:</i> FA 100 0-1</p> <p><b>IX. Social Science:</b> <i>Take 1 course:</i> ANTH 101 3 CHILD 210 3 ECON 111 3 ECON 112 3 ED 270 3 GEOG 120 3 HIST 201 3 HIST 202 3 PHIL 203 3 PHIL 204 3 POLSC 110 3 POLSC 170 3 PSYCH 111 3 PSYCH 201 3 SOC 111 3 SOC 112 3</p>	<p><b>V. Letters:</b> <i>Take 1 course:</i> CHIN 347 3 ENG 250 3 ENG 251 3 ENG 331 3 ENG 332 3 ENG 333 3 ENG 334 3 ENG 335 3 ENG 351 3 ENG 352 3 ENG 353 3 ENG 354 3 ENG 362 3 ENG 373 3 FR 202 3 GER 202 3 LANG 202 3 PH 314 3 PHIL 110 3 PHIL 201 3 PHIL 202 3 PHIL 313 3 PHIL 314 3 PHIL 315 3 RUSS 340 3 SPAN 202 3 SPAN 302 3</p>	<p><b>VI. Biological Science:</b> <i>Take 4 credits:</i> AGRON 122 4 AGRON 270 4 BIO 100 3 BIO 102 1 BIO 118 4 BIO 120 4 BIO 130 4 BIO 150 3 BIO 150L 1 BIO 176 4 BIO 200 4 BIO 202 4 BIO 208 4 BIO 221 3 BIO 222 1 BIO 230 4 BIO 250 4 BIO 264 4 BIO 265 4 BIO 268 8</p> <p><b>VII. Physical Science:</b> <i>Take 4 credits:</i> CHEM 105 4</p> <p><b>VIII. American Institutions:</b> <i>Take 1 course:</i> AMHER 170 3 ECON 111 3 HIST 120 3 HIST 121 3 POLSC 110 3</p>	<p><b>Religion Requirement:</b> (Book of Mormon) <i>Take these courses:</i> REL 121 2 REL 122 2 <b>OR</b> <i>Take this course:</i> REL 221</p> <p><b>AND</b> (Scripture Based Courses) <i>Take 6 credits:</i> REL 211 3 REL 212 2 REL 301 3 REL 301H 3 REL 302 3 REL 302H 3 REL 324 3</p> <p><b>AND</b> (Other Religion Courses) <i>Take 4 credits:</i> REL 100 2 REL 130 2 REL 215 2 REL 234 2 REL 235 2 REL 261 2 REL 264 2 REL 333 2 REL 341 2 REL 342 3 REL 351 2 REL 352 2 REL 360 4 REL 370 2 REL 431 2 REL 471 3 REL 475 2</p>
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**Total GE Credits=46**

**Major Requirements**

*No Double Counting of Major Courses - No Grade Less Than C- in Major Courses*

<p><i>Take these courses:</i> CS 124 3 CS 165 3 CS 202 1 CS 235 3 CS 236 4 COMPE 224 3 COMPE 250 5 COMPE 324 3 COMPE 340 3 COMPE 350 3 COMPE 360 3 COMPE 398R 1-7 COMPE 499 3 MATH 215 4 MATH 316 4 MATH 321 3 PH 121 3 PH 220 3 <hr/>55</p>	<p><i>Take 5 courses:</i> COMPE 440 3 COMPE 450 3 COMPE 460 3 COMPE 470 3 COMPE 480 3 COMPE 490 3 <hr/>15</p> <p><b>OR</b></p> <p><i>Take 4 courses:</i> COMPE 440 3 COMPE 450 3 COMPE 460 3 COMPE 470 3 COMPE 480 3 COMPE 490 3 <hr/>12</p> <p><i>And take 1 course:</i> CS 306 3 CS 345 3 CS 460 3 <hr/>3</p>	<p><i>Program Notes:</i></p>
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**Total Major Credits=70**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- YES

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<b>Minor in Computer Science</b>		
<b>Minor Requirements</b>		
Take these Courses:	Take 12 Credits:	<i>Program Notes:</i>
CS 165            3 CS 235            3 CS 246            3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 9	CompE 224        3 CompE 324        3 CS 236            4 CS 306            3 CS 345            3 CS 371            2 CS 373            3 CS 426            4 CS 427            4 CS 460            3 CS 470            3 CS 480            3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 12	
Take 1 Course:		
CS 124            3 CS 144            3 <hr style="width: 50%; margin-left: auto; margin-right: 0;"/> 3		
<b>Total Minor Credits=24</b>		
This minor is available on the following tracks:		
Fall-Winter---- YES	Winter-Summer---- YES	Summer-Fall---- YES

**Course Descriptions**

**Credits\***

- CompE 224 Fundamentals of Digital Systems (3:2:2)**  
Theory, design, and implementation of combinational and sequential logic. Students must design and build a project that uses sequential logic and a programmable logic device. A student presentation is required. Laboratory exercises are included. (Fall, Winter, Summer)
- CompE 250 Fundamentals of Digital Systems (5:4:2)**  
Prerequisite: Co-requisite: Math 215  
Analysis and design of DC and AC circuits. Steady state and time and frequency domain analysis. Transient analysis with differential equations. Weekly laboratory exercises are included. (Fall, Winter, Summer)
- CompE 305 Principles of Electrical Engineering (3:3:1)**  
Prerequisite: Math 215, PH 220  
Introduction to DC and AC circuits, motors, semiconductor devices and circuits, and digital logic circuits. Lab experiments are included. Intended for mechanical engineering majors. (Fall, Winter, Summer)
- CompE 324 Computer Architecture (3:2:2)**  
Prerequisite: ECE 224, CS 235  
Instruction sets, control unit and data path design, memory hierarchy, pipelining, and I/O. A student presentation is required. Laboratory exercises are included. (Fall, Winter, Summer)
- CompE 340 Digital Systems Design (3:2:2)**  
Prerequisite: ECE 224; CS 124  
Advanced topics in combinational logic, state machine design, and control structures. VHDL and FPGAs. A student presentation is required. Laboratory exercises are included. (Fall, Summer)
- CompE 350 Electronic Devices and Circuits (3:2:2)**  
Prerequisite: ECE 250  
Theory, design, and implementation of circuits using diodes, bipolar junction transistors, and field effect transistors. A student presentation is required. Laboratory exercises are included. (Fall, Winter)
- CompE 360 Computer Input/Output (3:2:2)**  
Prerequisite: ECE 324  
Applications, architecture, programming and interfacing of commercial microprocessors and microcontrollers. Laboratory exercises are included. (Fall, Winter)
- CompE 398R Internship (1-7:0:0)**  
Prerequisite: Junior Standing (60 or more credits)  
Full-time employment as a computer engineering intern for one semester or more. (Fall, Winter, Summer)
- CompE 440 Data and Computer Communications (3:2:2)**  
Prerequisite: ECE 250, ECE 324  
Fundamentals of data and computer communications focusing on the physical and data link layers of the OSI architecture. Laboratory exercises are included. (Fall, Summer)

- CompE 450 Advanced Digital Design and VLSI (3:2:2)**  
Advanced digital design concepts including multi-clock domain designs, meta-stability, signal integrity and functional verification of HDL models. VLSI concepts including the translation of HDL to gates to transistors and then to functional silicon. CMOS transistor concepts with special attention to the digital CMOS silicon manufacturing process. Formal validation of silicon components. (Fall, Winter, Summer)
- CompE 460 Real-Time and Embedded Systems (3:2:2)**  
Prerequisite: ECE 360  
Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development. (Fall, Summer)
- CompE 470 Feedback Control of Dynamic Systems (3:2:2)**  
Prerequisite: Math 316  
Dynamic modeling, dynamic response, analysis and design of feedback control. (Fall, Winter)
- CompE 480 Digital Signal Processing (3:2:2)**  
Prerequisite: ECE 324, Math 316  
Time and frequency domain analysis of discrete time systems subjected to periodic or non-periodic input signals. Digital signal processing, fast Fourier transforms, digital filter design, spectrum analysis and applications. Laboratory exercises are included. (Fall, Winter)
- CompE 490 Special Topics (3:2:2)**  
Prerequisite: Instructor Permission  
In-depth study of a topic in computer engineering that interests students and faculty. Laboratory exercises are included where appropriate. (Offered as needed)
- CompE 499 Senior Project (3:2:2)**  
Prerequisite: Instructor Permission  
Culminating design experience based on skills learned in advanced technical courses. Students work in teams to plan, design, test and demonstrate a major project. (Fall, Winter)
- CS 100 Computer Basics (1:0:0)**  
Fulfills GE Basic Skills requirement.  
A pass/fail course that requires passing a two-part exam. The exam includes objective-type questions and performance section where the student uses computer applications to produce a final product. The topics in the exam will include the basic computer operating system, word processing, spreadsheet, and Internet skills. If desired, a student can prepare for the exam by completing self-paced tutorials that will be provided over the Internet. No class time is required. (Fall, Winter, Summer)
- CS 124 Introduction to Software Development (3:3:0)**  
Prerequisite: High School Algebra  
Algorithmic thinking and problem solving. Programming basics including fundamental data types, flow of control, functions, and arrays. Structured programming. Procedural paradigm of software development. (Fall, Winter, Summer)
- CS 144 Introduction to Programming (3:3:0)**  
Prerequisite: Math 110 (may be taken concurrently)  
Introduction to problem solving, algorithm formulation, procedural programming and object-oriented programming. Course is intended for non-Computer Science majors. (Fall, Winter, Summer)

# Computer Science & Engineering

Brigham Young University-Idaho 2007-2008

<b>CS 165 Object-Oriented Software Development</b> (3:3:0) Prerequisite: CS 124, MATH 110 Software design and development using the object-oriented paradigm. Algorithm formulation and object-oriented programming. (Fall, Winter, Summer)	<b>CS 398 Internship</b> (1-4:0:0) Prerequisite: CS 246 and consent of Department Internship Coordinator. Planned and supervised practical experience in vocational or educational settings. Interns acquire practical skills while applying classroom theory and principles. (Fall, Winter, Summer)
<b>CS 202 Ethics</b> (1:1:0) Prerequisite: ENG 111/111C, CS 165 Survey of issues regarding ethics in Computer Science. Overview of intellectual property rights relative to computing including copyright, patents, trademarks, and piracy. Class meets for 60 minutes two times week. No required materials. (Fall, Winter)	<b>CS 399 Technical Communication</b> (2:2:0) Prerequisite: Eng 316/316C and CS 246 Fundamentals of presenting to technical and non-technical audiences. Review classics of Computer Science literature. (Fall, Winter)
<b>CS 235 Data Structures</b> (3:3:0) Prerequisite: CS 165 Builds on the foundation of CS 124 and CS 165 to introduce the fundamental concepts of data structures and the algorithms that proceed from them. (Fall, Winter, Summer)	<b>CS 426 Software Engineering I</b> (4:5:0) Prerequisite: Eng 316/316C and CS 246 Software requirements engineering including elicitation, and specification. Software design. Software quality engineering including testing. (Fall, Summer)
<b>CS 236 Discrete Mathematics</b> (4:5:0) Prerequisite: CS 165, Math II2, and Math 221 Mathematics for computer science. Introduces the mathematical topics needed to provide a theoretical foundation for computer science. (Fall, Winter, Summer)	<b>CS 427 Software Engineering II</b> (4:5:0) Prerequisite: Eng 316/316C and CS 246 Software metrics, software process, and software project management. (Winter, Summer)
<b>CS 246 Software Design and Development</b> (3:3:0) Prerequisite: CS 235 Advanced object-oriented design and software development. (Fall, Winter)	<b>CS 460 Computer Communication &amp; Networks</b> (3:3:0) Prerequisite: CS 246 Introduction to computer networking with an Internet focus, including: applications, protocols, transport services, IP, routing, LANs, and security. (Winter, Summer)
<b>CS 290 Special Topics</b> (1-3:0:0) Prerequisite: Consent of Instructor. Faculty/Student consultation will determine an area of study/research that will give an advanced student greater appreciation and experience in this field. Terms of enrollment, credit, etc., will be determined by the instructor. (Taught as needed)	<b>CS 470 Computer Security</b> (3:3:0) Prerequisite: CS 236 and CS 246 Security in multi-user and distributed computer systems, cryptography, identification and authentication, message and software protection. (Winter, Summer)
<b>CS 306 Algorithms and Complexity</b> (3:3:0) Prerequisite: CS 235, CS 236 Introduces formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical considerations of efficiency. Topics include asymptotic complexity bounds, techniques of analysis, and algorithmic strategies. (Fall, Summer)	<b>CS 480 Computational Theory</b> (3:3:0) Prerequisite: CS 306 Finite automata, regular expressions, grammars, languages, turing machines, computability, complexity, P and NP problems. (Winter, Summer)
<b>CS 345 Operating Systems</b> (3:3:0) Prerequisite: COMPE 324 Analysis of methods used by operating systems to perform typical system services, including: process control, memory management, scheduling, I/O, file management, and concurrency. (Winter, Summer)	<b>CS 490 Special Topics</b> (3:3:0) Prerequisite: Consent of Instructor Current topics in Computer Science. (Taught as needed)
<b>CS 371 Human-Computer Interaction</b> (2:2:0) Prerequisite: CS 373 Introduction to basic HCI concepts. Provides a foundation for the analysis, design, and evaluation of effective interactive systems. (Fall, Summer)	<b>CS 498R Internship</b> (1-4:0:0) Prerequisite: CS 246 and consent of Department Internship Coordinator. Planned and supervised practical experience in vocational or educational settings. Interns acquire practical skills while applying classroom theory and principles. (Fall, Winter, Summer)
<b>CS 373 Web Engineering</b> (3:3:0) Prerequisite: CS 246 Internet and Web fundamentals. Client and Server side technologies. Web application development using: XHTML, CSS, XML, XSL/XSLT, JavaScript, Perl, PHP, and Java Servlets. (Fall, Winter)	<b>CS 499 Senior Project</b> (3:1:2) Prerequisite: CS 426 Directed individual or group research and study of a topic in Computer Science not covered by the curriculum. The topic shall be such that the student shall apply material covered by the curriculum to understand a new topic. (Fall, Winter, Summer)

**EET 135 Basic Electricity (3:2:2)**

Prerequisite: High School Algebra

Survey of Ohm's Law, basic electricity and basic electronics. Recommended for non-EET majors, or those investigating the major. DC and AC principles. Fundamentals of series, parallel, and series-parallel circuits. Magnetism, inductance, and capacitance. Also covers linear and digital integrated circuits. Laboratory exercises are included.  
(Fall)

**EET 150 DC/AC Circuits (4:2:4)**

Introduction to Direct Current Circuits and Ohm's Law. In-depth coverage of series, parallel, and series-parallel circuits. AC characteristics of inductors and capacitors. Network theorems are applied to complex DC and AC circuits. Computer simulation used to analyze circuitry. Laboratory exercises are included.  
(Fall, Winter, Summer)

**EET 151 Digital Circuits (3:2:2)**

Prerequisite: High School Algebra

Introduction to digital electronics. Number systems, truth tables, Boolean algebra, and Karnaugh maps. Covers soldering and basic construction skills. Students must design and build a project that uses sequential logic and a programmable logic device. Laboratory exercises are included.  
(Fall, Winter, Summer)

**EET 153 Semiconductors (4:4:2)**

Prerequisite: EET 150

Introduction to semiconductor devices. Principles of rectifiers, zener diodes, and other pn junction devices. Students must design, build, and demonstrate a linear power supply that meets given specifications. Laboratory exercises are included.  
(Fall, Winter)

**EET 250 Troubleshooting (3:2:2)**

Prerequisite: EET 150 and 153

Identify and repair trouble-symptoms in TVs, radios, tape recorders, VCRs, and CD players. Students use proper instrumentation to isolate the malfunction to a particular component. Defective components are replaced to restore normal operation. Student presentations are required. Laboratory exercises are included.  
(Fall, Winter)

**EET 251 Industrial Circuits (3:2:2)**

Prerequisite: EET 150, EET 151, EET 153; Corequisite: Math 112

Introduction to electronic control systems, feedback control theory, and programmable logic controllers. Computers are used to program PLCs. Laboratory exercises are included.  
(Fall, Winter)

**EET 252 Communications Circuits (3:2:2)**

Prerequisite: EET 150 and EET 153

Introduction to analog and digital electronic communication. Theory of amplitude modulation, frequency modulation, pulse modulation, antennas and transmission lines. Transmitters, receivers, oscillators, and antennas are built and tested. Student presentations are required. Laboratory exercises are included.  
(Fall, Winter)

**EET 253 Linear Integrated Circuits (3:2:2)**

Prerequisite: EET 150, EET 151, EET 153

Operational amplifiers, comparators, and active filters. Programmable timers, DACs and ADCs. Laboratory exercises are included.  
(Fall, Winter)

**EET 255 Microprocessors & Microcontrollers (3:2:2)**

Prerequisite: EET 151

Microprocessor and computer architecture and operation. Programming, interfacing, software and hardware of microprocessor based systems. Troubleshooting with an emulator. Students must design, build, and present to the class an approved project that uses a microcontroller. Laboratory exercises included.  
(Fall, Winter)

**EET 298R Work Experience (1-4:0:0)**

Prerequisite: Consent of Advisor and Department Internship Coordinator.

Work experience with selected electronics and computer firms. Work period may be arranged during any semester or summer term.  
(Fall, Winter, Summer)