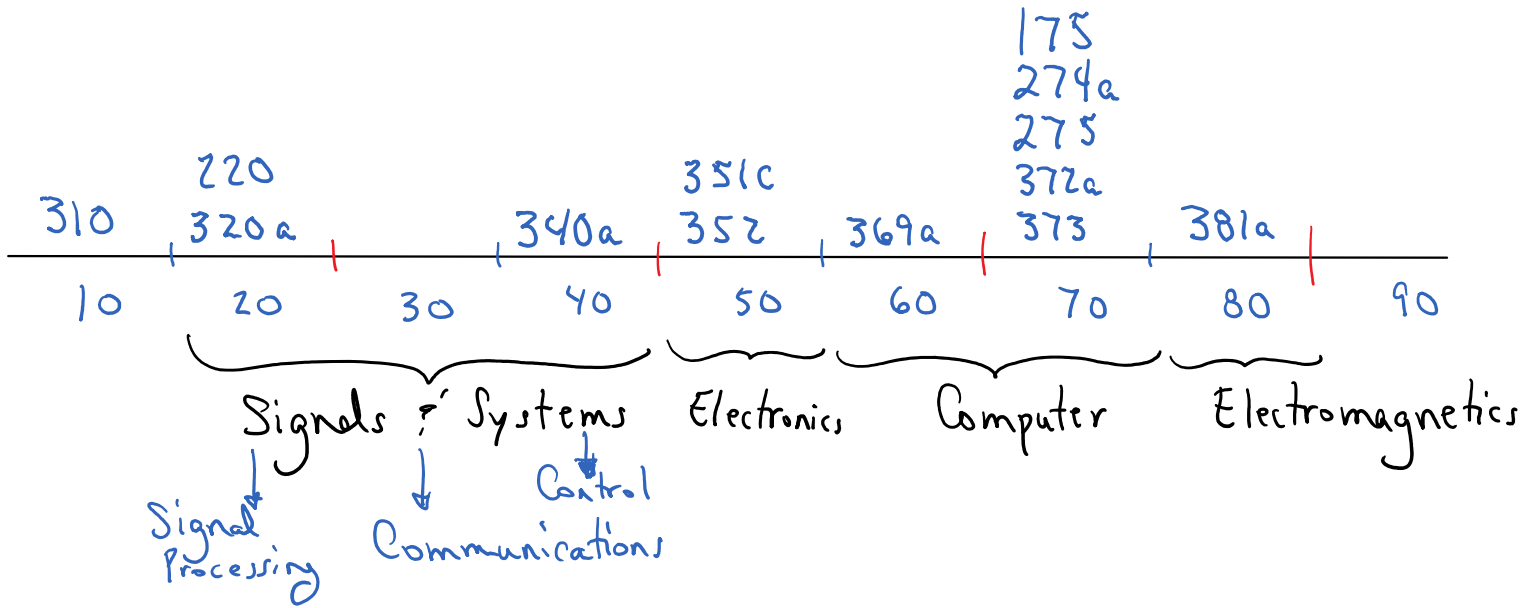


Technical Electives



<https://ece.engineering.arizona.edu/undergrad-programs/courses>
<https://ece.engineering.arizona.edu/grad-programs/courses>

Textbook(s)
 Description
 Topics
 Prerequisites

Fall 2021

Computer Courses:	ECE 369a	(EE)	Fundamentals of Computer Architecture
	ECE 373	(EE)	Object Oriented Software Design
	ECE 4/511		Numeric Modelling of Physics & Biological Systems
	ECE 4/513		Web Development and Internet of Things
	ECE 4/574a		Computer-Aided Logic Design
	ECE 4/578		Fundamentals of Computer Networks
	ECE 509		Cyber Security - Concept, Theory, Practice
	ECE 576a		Engineering of Computer Based Systems
	ECE 677		Distributed Computing Systems

Electronics/Bio Courses:	ECE 434	Electrical and Optical Properties of Materials	Fall '21 Fall '22
	ECE 4/546	Semiconductor Processing	
	ECE 4/550	Analog Integrated Circuits	
	ECE 4/572	Design, Modeling, and Simulation for High Technology Systems in Medicine	

Electromagnetics/Optics Courses:	ECE 581a	Electromagnetic Field Theory	
	ECE 4/559	Fundamentals of Optics for Electrical Engineers	
	ECE 4/586	Microwave Engr I: Passive Circuits	
	ECE 527	Holography and Diffraction Optics	Fall '21

Signals & System Courses:	ECE 4/529	Digital Signal Processing	
	ECE 4/530	Optical Communications Systems	
	ECE 532	Digital Image Analysis	Fall '21 (?)
	ECE 536a	Free Space Optical Communications Systems	
	ECE 537	Digital Communications Systems II	?
	ECE 538	Radar Signal Processing	
	ECE 4/541a	Automatic Control Systems	
	ECE 501b	Advanced Linear System Theory	
	ECE 503	Probability and Random Processes for Engineering Applications	

McGuire Center for Entrepreneurship (2 Semester Sequence, Conflicts with ENGR 498a/b)

McGuire New Venture Dev:	ENTR 487	Venture Development I (Fall), Available to ECE Juniors
	ENTR 484	Venture Development II (Spring), Available to ECE Juniors

Weekly Schedule (Fall 2021)

Time	Mon	Tues	Wed	Thurs	Fri
8:00 AM		ECE 373 ECE 576A		ECE 373 ECE 576A	
8:30 AM		ECE 373 ECE 576A		ECE 373 ECE 576A	
9:00 AM	ECE 4/541a	ECE 373 ECE 576A	ECE 4/541a	ECE 373 ECE 576A	ECE 4/541a
9:30 AM	ECE 4/541a	ECE 4/511 ECE 4/572 ECE 4/586	ECE 4/541a	ECE 4/511 ECE 4/572 ECE 4/586	ECE 4/541a
10:00 AM	ECE 369a ECE 4/546	ECE 4/511 ECE 4/572 ECE 4/586	ECE 369a ECE 4/546	ECE 4/511 ECE 4/572 ECE 4/586	ECE 369a ECE 4/546
10:30 AM	ECE 369a ECE 4/546	ECE 4/511 ECE 4/572 ECE 4/586	ECE 369a ECE 4/546	ECE 4/511 ECE 4/572 ECE 4/586	ECE 369a ECE 4/546
11:00 AM	ECE 503	ECE 4/529 ECE 4/574A	ECE 503	ECE 4/529 ECE 4/574A	ECE 503
11:30 AM	ECE 503	ECE 4/529 ECE 4/574A	ECE 503	ECE 4/529 ECE 4/574A	ECE 503
12:00 PM		ECE 4/529 ECE 4/574A		ECE 4/529 ECE 4/574A	
12:30 PM		ECE 4/530 ECE 4/578		ECE 4/530 ECE 4/578	
1:00 PM	ECE 4/550 ECE 4/559 ECE 696B	ECE 4/530 ECE 4/578	ECE 4/550 ECE 4/559 ECE 696B	ECE 4/530 ECE 4/578	ECE 4/550 ECE 4/559 ECE 696B
1:30 PM	ECE 4/550 ECE 4/559 ECE 696B	ECE 4/530 ECE 4/578	ECE 4/550 ECE 4/559 ECE 696B	ECE 4/530 ECE 4/578	ECE 4/550 ECE 4/559 ECE 696B
2:00 PM	ECE 369a a Lab ECE 537 ECE 581A		ECE 369a a Lab ECE 537 ECE 581A		ECE 537 ECE 581A
2:30 PM	ECE 369a a Lab ECE 537 ECE 581A		ECE 369a a Lab ECE 537 ECE 581A		ECE 537 ECE 581A
3:00 PM	ECE 369a a Lab ECE 4/513		ECE 369a a Lab ECE 4/513		ECE 4/513
3:30 PM	ECE 369a b Lab ECE 4/513		ECE 369a b Lab ECE 4/513	ECE 695	ECE 4/513
4:00 PM	ECE 369a b Lab ECE 434 ECE 501b ECE 677	ECE 509	ECE 369a b Lab ECE 434 ECE 501b ECE 677	ECE 695	
4:30 PM	ECE 369a b Lab ECE 434 ECE 501b ECE 677	ECE 509	ECE 369a b Lab ECE 434 ECE 501b ECE 677		
5:00 PM	ECE 369a b Lab ECE 434 ECE 501b ECE 677	ECE 509 ECE 538	ECE 369a b Lab ECE 434 ECE 501b ECE 677	ECE 538	
5:30 PM	ECE 369a c Lab ECE 677	ECE 509 ECE 538	ECE 369a c Lab	ECE 538	
6:00 PM	ECE 369a c Lab ECE 677	ECE 509 ECE 538	ECE 369a c Lab	ECE 538	

Spring 2022

Computer Courses:		ECE 330B		Computational Techniques
		ECE 4/562		Computer Architecture
		ECE 4/566		Knowledge-System Engineering
		ECE 4/571		Fundamentals of Information and Network Security
		ECE 4/579		Principles of Artificial Intelligence
		ECE 506		Reconfigurable Computing
		ECE 524		Fundamentals of Cloud Security
		ECE 678		Wireless Protocols

Electronics/Bio Courses:		ECE 352	(CE)	Device Electronics
		ECE 4/507		Digital VLSI System Design
		ECE 4/517		Measurement & Data Analysis in Biomedical Engineering

Electromagnetics/Optics Courses:		ECE 381a	(CE)	Introductory Electromagnetics
		ECE 4/514a		Photovoltaic Solar Energy Systems
		ECE 4/555		Intro. Quantum Mechanics and Quantum Information Proc.
		ECE 4/556		Optoelectronics
		ECE 4/584		Antenna Theory and Design
		ECE 534		Adv. Topics in Optical and Electronic Materials

Signals & System Courses:		ECE 523		Engineering Applications of Machine Learning and Data Analysis
		ECE 533		Digital Image Processing
		ECE 4/535a		Digital Communications Systems
		ECE 4/542		Digital Control Systems
		ECE 636		Information Theory
		ECE 639		Detection and Estimation in Engineering Systems

Weekly Schedule (Spring 2022, Tentative)

Time	Mon	Tues	Wed	Thurs	Fri
8:00 AM		ECE 304A Lab			
8:30 AM		ECE 304A Lab			
9:00 AM	ECE 304A ECE 4/562	ECE 304A Lab	ECE 304A ECE 4/562		ECE 304A ECE 4/562
9:30 AM	ECE 304A ECE 4/562	ECE 304A Lab ECE 506 ECE 4/579	ECE 304A ECE 4/562	ECE 506 ECE 4/579	ECE 304A ECE 4/562
10:00 AM	ECE 517 ECE 523	ECE 304A Lab ECE 506 ECE 4/579	ECE 523	ECE 506 ECE 4/579	ECE 523
10:30 AM	ECE 517 ECE 523	ECE 304A Lab ECE 506 ECE 4/579	ECE 523	ECE 506 ECE 4/579	ECE 523
11:00 AM	ECE 517	ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636		ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636	
11:30 AM	ECE 517	ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636		ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636	
12:00 PM		ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636	ECE 381a R	ECE 330B ECE 352 ECE 576B ECE 4/588 ECE 636	
12:30 PM	ECE 4/503A	ECE 533 ECE 534 ECE 696B 311	ECE 381a R ECE 4/503A	ECE 533 ECE 534 <u>ECE 696B 311</u>	
1:00 PM	ECE 4/503A ECE 4/571 ECE 581B	ECE 533 ECE 534 ECE 696B 311	ECE 4/503A ECE 4/571 ECE 581B	ECE 533 ECE 534 ECE 696B 311	ECE 4/571 ECE 581B
1:30 PM	ECE 4/503A ECE 4/571 ECE 581B	ECE 533 ECE 534 <u>ECE 696B 311</u>	ECE 4/503A ECE 4/571 ECE 581B	ECE 533 ECE 534 ECE 696B 311	ECE 4/571 ECE 581B
2:00 PM	ECE 4/507 ECE 4/535a	ECE 517 a Lab	ECE 4/507 ECE 4/535a	ECE 517 b Lab	ECE 4/507 ECE 4/535a
2:30 PM	ECE 4/507 ECE 4/535a	ECE 517 a Lab	ECE 4/507 ECE 4/535a	ECE 517 b Lab	ECE 4/507 ECE 4/535a
3:00 PM	ECE 381a ECE 635	ECE 517 a Lab	ECE 381a ECE 635	ECE 517 b Lab	ECE 381a ECE 635
3:30 PM	ECE 381a ECE 678 ECE 635	ECE 517 a Lab ECE 696B 310	ECE 381a ECE 678 ECE 635	ECE 517 b Lab ECE 696B 310	ECE 381a ECE 635
4:00 PM	ECE 4/514a ECE 531 ECE 678	ECE 517 a Lab ECE 524 ECE 696B 310	ECE 4/514a ECE 524 ECE 531 ECE 678	ECE 517 b Lab ECE 696B 310	ECE 4/514a
4:30 PM	ECE 4/514a ECE 531 ECE 678	ECE 517 a Lab ECE 524 ECE 696B 310	ECE 4/514a ECE 524 ECE 531 ECE 678	ECE 517 b Lab ECE 696B 310	ECE 4/514a
5:00 PM	ECE 531 ECE 639	ECE 524	ECE 531 ECE 639		
5:30 PM	ECE 4/542 ECE 639	ECE 524	ECE 4/542 ECE 639		
6:00 PM	ECE 4/542 ECE 639	ECE 524	ECE 4/542 ECE 639		
6:30 PM	ECE 4/542		ECE 4/542		



Electrical and Computer Engineering-Accelerated Master's Program (ECE-AMP)

The Accelerated Master's Program (AMP) is designed to allow undergraduate seniors to concurrently work toward a master's degree. This option is appropriate for exceptional undergraduate students who would also like to pursue a graduate degree. By counting a limited number of courses toward both degrees, students can earn a M.S. degree much quicker. The M.S. degree provides knowledge, technical skills and research skills for career advancement.

Admission Requirements

- Be an ECE undergraduate junior or senior
- Have a 3.3 cumulative undergraduate GPA
- Waive GRE requirement for admission to ECE Master of Science Degree (M.S.)
- Demonstration of the maturity necessary for success in an accelerated, highly competitive program.

Admission Application Process

- Submit Graduate College Application upon completion of a minimum of 75 undergraduate credit hours, second semester Junior year.

Coursework Requirements

- Select an ECE Faculty advisor who will guide the student's research or development work towards the completion of a thesis. The ECE-AMP program also has a Non-Thesis Option.
- Meet with the ECE Graduate Academic Advisor for assistance in the course selection of the 12 credits of Technical Electives

90+ Units

Ms. Tami Whelan

gradadvisor@ece.arizona.edu