

Column1	Column2	Column3	Column4
	<b>COMPUTER SCIENCE MAJORS</b>		
<b>Course</b>	<b>Title</b>	<b>Prerequisite</b>	<b>Course Offering Cycle</b>
ASTR 161	General Astronomy I	None	Fall, Spring & Summer
ASTR 162	General Astronomy II	ASTR 161	Spring
BIOL 201	Biology I: Cellular Biology and Genetics	CHEM 131/ CHEM 131L [CHEM 110] (may be taken concurrently) or one year high school chemistry	Fall, Spring & Summer
BIOL 202	Biology II: Introduction to Ecology and Evolution	BIOL 117, BIOL 120 / BIOL 120L, BIOL 190 or BIOL 201, or high school General Biology	Fall, Spring & Summer
BIOL 205	General Botany	BIOL 190 or BIOL 201	Spring
BIOL 207	General Zoology	BIOL 202	Fall
BIOL 208	Biodiversity	BIOL 201 and BIOL 202	Fall & Spring
BIOL 309	Principles of Genetics	BIOL 201	Fall & Spring
CHEM 131 + CHEM 131L	General Chemistry I Lecture/General Chemistry I Laboratory	None	Fall, Spring & Summer
CHEM 132 + CHEM 132L	General Chemistry II Lecture/General Chemistry II Laboratory	CHEM 131 & 131L	Fall, Spring & Summer
CHEM 210	Introduction to Analytical Chemistry	CHEM 132 and CHEM 132L	Fall & Spring
CHEM 323	Inorganic Chemistry	CHEM 132 and CHEM 132L	Fall & Spring
CHEM 331	Organic Chemistry	CHEM 132 and CHEM 132L	Fall, Spring & Summer
COMM 131	Fundamentals of Speech Communication	None	Fall, Winter, Spring & Summer
COSC 175	General Computer Science	None	Fall, Spring & Summer
COSC 236	Introduction to Computer Sciences I	Programming knowledge (Java, C++) and MATH 119	Fall, Spring & Summer
COSC 237	Introduction to Computer Sciences II	COSC 236, Corequisite: MATH 211 or MATH 273	Fall, Spring & Summer

COSC 290	Principles of Computer Organization	COSC 236, and MATH 263 or MATH 267	Fall and Spring
COSC 310	Advanced Programming	COSC 237	Fall
COSC 314	Introduction to Cryptography	COSC 236, either MATH 263 or MATH 267, and junior standing or permission of the instructor	Fall
COSC 336	Data Structures and Algorithm Analysis	COSC 237, Pre- or Corequisite: MATH 274	Fall and Spring
COSC 350	Data Communications and Networking	Either COSC 336 and COSC 290 or CIS 239 and CIS 334	Fall and Spring
COSC 378	Scientific Modeling and Simulation	MATH 274, COSC 236	Fall and Spring
COSC 397	Internship in Computer Science	6 units of upper-division computer science or computer information systems courses and consent of instructor	Fall, Spring & Summer
COSC 412	Software Engineering	CIS 334 or CIS 335 or COSC 336 and one 400-level COSC/CIS course	Fall and Spring
COSC 417	Introduction to the Theory of Computing	COSC 336	Spring
COSC 418	Ethical and Societal Concerns of Computer Scientists	Junior or Senior standing; ENGL 317; must have previously taken a computing class	Fall, Spring & Summer
COSC 431	Selected Topics in Computer Science	Consent of instructor and 9 units of computer science	Occasionally
COSC 432	Requirements Analysis & Modeling	COSC 412	Fall
COSC 436	Object-Oriented Design and Programming	COSC 336	Fall and Spring
COSC 439	Operating Systems	COSC 336	Fall and Spring
COSC 440	Operating Systems Security	COSC 439	Fall

COSC 441	Computer Performance Evaluation	MATH 274 and Pre or Corequisite: COSC 439	
COSC 442	Software Quality Assurance and Testing	COSC 412	Spring
COSC 450	Network Security	COSC 314 or MATH 314, and COSC 350	Fall
COSC 455	Programming Languages: Design and Implementation	COSC 336	Fall and Spring
COSC 457	Database Management Systems	CIS 334 or COSC 336	Fall and Spring
COSC 458	Application Software Security	COSC 455, Corequisite: COSC 457	Fall
COSC 459	Computer Simulation and Modelling	COSC 336 and MATH 330 or CIS 334 and MATH 231	Spring
COSC 461	Artificial Intelligence	COSC 336 or CIS 334	Fall OR Spring ??
COSC 465	Robotics	COSC 336	Fall
COSC 471	Computer Graphics	COSC 336 or CIS 334	Spring
COSC 481	Case Studies in Computer Security	COSC 440 and COSC 450	Spring
COSC 483	Design and Analysis of Algorithms	COSC 336	Fall
COSC 484	Web-based Programming	COSC 336	Fall and Spring
COSC 485	Reverse Engineering & Malware Analysis	COSC 310, COSC 450	Spring
COSC 490	Software Project Practicum	COSC 412; majors only; senior standing	Spring
COSC 495	Independent Study in Computer Science	Senior standing in Computer Science and consent of instructor	Occasionally
GEOL 121	Physical Geology	None	Fall, Spring & Summer
MATH 265	Elementary Linear Algebra	MATH 211 or 273	Fall, Spring & Summer
MATH 267	Intro to Abstract Math	MATH 273	Fall, Spring & Summer
MATH 273	Calculus I	MATH 119	Fall, Spring & Summer
MATH 274	Calculus II	MATH 273	Fall, Spring & Summer
MATH 275	Calculus III	MATH 274	Fall, Spring & Summer
MATH 330	Introduction to Statistical Methods	MATH 274	Fall, Spring & Summer
MATH 331	Probability	MATH 274	Fall, Spring & Summer
MATH 369	Intro to Abstract Algebra	MATH 265, 267, 274	Fall, Spring & Summer

MATH 374	Differential Equations	MATH 274	Fall, Spring & Summer
MATH 377	Mathematical Models	MATH 265, 274, COSC 236	Fall
MATH 435	Numerical Analysis I	MATH 265, 274, COSC 236	Fall
MATH 437	Operations research	MATH 265, 331	Spring
MATH 439	Computational Probability Models	MATH 331	Spring
MATH 451	Graph Theory	MATH 263 or 267	Occasionally
MATH 457	Differential Geometry	MATH 275, 265	Occasionally
MATH 465	Theory of Numbers	MATH 369	Spring
MATH 467	Algebraic Structures	MATH 369	Fall
MATH 473	Introductory Real Analysis	MATH 267, 275	Fall
MATH 475	Complex Analysis	MATH 275	Spring
MATH 477	Topology	MATH 267, 275	Spring - Odd Years Only
MATH 490	Senior Seminar in Math	Senior standing	Fall & Spring
PHYS 241	General Physics I Calculus-Based	MATH 273 (may be taken concurrently)	Fall, Spring & Summer
PHYS 242	General Physics II Calculus-Based	PHYS 241, MATH 274 (may be taken concurrently)	Fall, Spring & Summer
PHYS 243	General Physics III	PHYS 242	Spring
PHYS 251	Honors General Physics I Calculus-Based	Honors College	Fall - Odd Years Only
PHYS 252	Honors General Physics II Calculus-Based	PHYS 241, MATH 274 (may be taken concurrently)	Spring - Odd Years Only
PHYS 335	Basic Electronics	None	Spring
PHYS 337	Digital Electronics	None	Fall