COMPUTER SCIENCE

UCR | Bourns College of Engineering

Catalog Year: 2018

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010 *C++ Programming I*	4	CS 012 *C++ Programming II*	4	CS 014 *Intro to Data Structures & Algorithms*	4
ENGL 001A *Beginning Composition*	4	ENGL 001B *Intermediate Composition*	4	MATH 009C *First Year Calculus*	4
ENGR 001I *Professional Dev. & Mentoring*	1	MATH 009B *First Year Calculus*	4	Breadth _____ *Humanities/Social Sciences*	4
MATH 009A *First Year Calculus*	4	MATH/CS 011 *Intro to Discrete Structures*	4		
SECOND YEAR					
CS 061 *Machine Org. & Assembly Lang. Prog.*	4	EE/CS 120A *Logic Design*	5	CS/EE 120B *Embedded Systems*	4
CS 100 *Software Construction*	4	CS 111 *Discrete Structures*	4	PHYS 040C *Physics (Electricity/Magnetism)*	5
PHYS 040A *Physics (Mechanics)*	5	PHYS 040B *Physics (Heat/Waves/Sound)*	5	Breadth _____ *Humanities/Social Sciences*	4
Breadth _____ *Humanities/Social Sciences*	4	Breadth _____ *Humanities/Social Sciences*	4		
THIRD YEAR					
CS 141 *Interm. Data Structures & Algorithms*	4	CS 150 *Theory of Automata & Formal Language*	4	Engineering Elective *EE01A/01LA or EE 005, or EE 020, or ME 009, or ME 010*	4
CS 161 *Design & Architec. of Comp. Sys. & Lab*	4	MATH 031 *Applied Linear Algebra*	5	ENGR 180W* *Technical Communications*	4
MATH 010A *Multivariable Calculus*	4	Technical Elective** _____	4	CS 153 *Design of Operating Systems*	4
ENGR 101I *Professional Dev. & Mentoring*	1	Breadth _____ *Humanities/Social Sciences*	4		
FOURTH YEAR					
STAT 155 *Probability & Statistics for Engr*	4	CS 152 *Compiler Design*	4	CS 179 (E-Z) *Project in Computer Science*	4
Technical Elective** _____	4	Technical Elective** _____	4	Technical Elective** _____	4
Technical Elective** _____	4	Technical Elective** _____	4	Technical Elective** _____	4
Breadth _____ *BIOL 002, or 003, or 005A/LA*	4	Breadth _____ *Humanities/Social Sciences*	4		

Total Units: 175
Maximum Units: 220

To earn a B.S., you must complete all College and University requirements. For a complete list: www.catalog.ucr.edu.

ENGLISH COMPOSITION*

A C or better is required in three quarters of English Composition courses to satisfy the graduation requirement. ENGR 180W fulfills the third quarter of English Composition.

BREADTH REQUIREMENTS

For an approved list of Breadth courses: http://student.engr.ucr.edu/policies/requirements/breadth.html.

Humanities: (3 courses)
 A. World History: _____
 B. Fine Arts, Lit., Phil. or Rlst: _____
 C. Human Persp. on Science: _____
Social Sciences: (3 courses)
 A. Econ. or Posc.: _____
 B. Anth., Psyc, or Soc.: _____
 C. General Social Science: _____
Biological Science _____
Ethnicity: (1 course)
 1. _____
Upper Division: (2 courses)
 1. _____
 2. _____

TECHNICAL ELECTIVES *

Please note that Technical Electives may be offered throughout the Academic Year. Consult with your Academic Advisor about potential offerings. Proposed offerings may be found at: http://www.cs.ucr.edu/education/undergraduate/courses/. See approved technical electives on back.

Course Plan is subject to change.

Computer Science Technical Electives

You must complete 7 courses (at least 28 units) of Technical Electives chosen from the list below. At least 4 Technical Electives must be from Computer Science courses.

Course	Course Title (Units)
CS 105	Data Analysis Methods (4)
CS 122A	Intermediate Embedded & Real-Time Systems (5)
CS 122B	Advanced Embedded & Real-Time Systems (5)
CS 130	Computer Graphics (4)
CS 133	Computational Geometry (4)
CS 134	Video Game Creation & Design (4)
CS 135	Virtual Reality (4)
CS 145	Combinatorial Optimization Algorithms (4)
CS 160	Concurrent Programming & Parallel Systems (4)
CS 162	Computer Architecture (4)
CS 164	Computer Networks (4)
CS 165	Computer Security (4)
CS 166	Database Management Systems (4)
CS 167	Intro to BIG-DATA Management (4)
CS/EE 168	Introduction to Very Large Scale Integration (VLSI) Design (4)
CS 169	Mobile Wireless Networks (4)
CS 170	Introduction to Artificial Intelligence (4)
CS 171	Introduction to Machine Learning and Data Mining (4)
CS 172	Introduction to Information Retrieval (4)
CS 175	Entrepreneurship in Computing (4)
CS 177	Modeling & Simulation (4)
CS 179 E-Z	Project in Computer Science (4 units maximum)
CS 180	Introduction to Software Engineering (4)
CS 181	Principles of Programming Languages (4)
CS 182	Software Testing and Verification (4)
CS 183	UNIX System Administration (4)
CS 193	Design Project (4 units maximum)
MATH 120	Optimization (4)
MATH 126	Combinatorics (4)
MATH 135A	Numerical Analysis (4)
MATH 135B	Numerical Analysis (4)
PHIL 124	Formal Logic (4)