UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

Catalog Year: 2022

Computer Science with Business Applications

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CS 010A	4	CS 010B	4	CS 010C	4
C++ Programming I		*C++ Programming II*		*Intro to Data Structures & Algorithms*	
ENGL 001A	4	ENGL 001B	4	MATH 009C	4
Beginning Composition		*Intermediate Composition*		*First Year Calculus*	
ENGR 001M	1	MATH 009B	4	Breadth _____	4
Professional Dev. & Mentoring		*First Year Calculus*		*Humanities/Natural Sciences*	
MATH 009A	4	CS/MATH 011	4	Breadth _____	4
First Year Calculus		*Intro to Discrete Structures*		*Humanities/Natural Sciences*	
BUS 020	4	MATH 010A	4	ECON 003	5
Financial Accounting & Reporting		*Multivariable Calculus*		*Intro to Microeconomics*	
CS 061	4	CS 111	4	MATH 031 or EE 020B	5
Machine Org. & Assembly Lang. Prog.		*Discrete Structures*		*Applied Linear Algebra*	
CS 100	4	STAT 155	4	Breadth _____	4
Software Construction		*Probability & Statiscis for Engr*		*Humanities/Natural Sciences*	
ECON 002	5	Breadth _____	4	Breadth _____	4
Intro to Macroeconomics		*Biological Sci (Biol 002 or*		*Humanities/Natural Sciences*	
THIRD YEAR					
BUS 103	4	BUS/STAT 104	4	CS 153	4
Marketing & Distribution Mgmt		*Decision Analysis & Mgmt Science*		*Design of Operating Systems*	
CS 141	4	BUS 106/ECON 134	4	ENGR 180W**	4
Interm. Data Structures & Algorithms		*Intro to Financial Mgmt*		*Technical Communications*	
Breadth _____	4	CS Technical Elective**	4	SOC 150	4
Humanities/Natural Sciences		_____		*Soc. of Economic Organizations*	
Breadth _____	4	ENGR 101M	1	CS Technical Elective***	4
Humanities/Natural Sciences		*Professional Dev. & Mentoring*		_____	
FOURTH YEAR					
BUS Technical Elective*	4	BUS Technical Elective*	4	CS Technical Elective***	4
_____		_____		_____	
CS Elective	4	CS Technical Elective**	4	BUS Technical Elective**	4
CS 164, CS 166, CS 172 or CS 180		_____		_____	
CS Elective	4	CS 165	4	BUS Technical Elective**	4
CS 164, CS 166, CS 172 or CS 180		*Computer Security*		_____	

Total Units: 177

Maximum Units: 222

To earn a B.S., you must complete all College and University requirements. For a complete list: 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 third quarter 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./Rlst: _____

C. Human Persp. on Sci: _____

Natural Sciences: (4 courses)

A. Biological Science: _____

B. Physical Science: 1_____

2_____

3_____

Ethnicity: (1 course)

1. _____

Upper Division: (1 course)

1. _____

TECHNICAL ELECTIVES ***

Please note that Technical Electives may be offered throughout the Academic Year. Consult with your Academic Advisor about potential offerings. See approved technical electives on back.

Computer Science Technical Electives:

1. _____ 3. _____

2. _____ 4. _____

Business Administration Technical Electives:

1. _____ (IS) 3. _____

2. _____ (IS) 4. _____

Course Plan is subject to change.

Computer Science w/Business Applications Technical Electives

Computer Science Technical Electives:

You must complete at least 16 units of upper division Computer Science Technical Electives which must be distinct from major requirements. These 16 units may be chosen from upper division requirements or technical eletives for the Computer Science Major. At least four courses must be in the Department of Computer Science and Engineering.

CS 105	Data Analysis Methods (4)	CS 160	Concurrent Prog. & Parallel Syst. (4)
CS 108	Data Science Ethics (4)	CS 161	Design&Architecture of Comp. Syst. (4)
CS 110	Web Development (4)	CS 167	Intro to BIG-DATA Management (4)
CS 120A	Logic Design (5)	CS/EE 168	Intro to VLSI Design (4)
CS 120B	Introduction to Embedded Systems (4)	CS 169	Mobile Wireless Networks (4)
CS 122A	Inter. Embedded&Real-Time Syst. (5)	CS 170	Introduction to Artificial Intelligence (4)
CS 130	Computer Graphics (4)	CS 171/EE 142	Intro to Machine Learning & Data Mining (4)
CS 131	Edge Computing (4)	CS 173	Intro to Natural Language Processing
CS 133	Computational Geometry (4)	CS 175	Entrepreneurship in Computing (4)
CS 134	Video Game Creation & Design (4)	CS 177	Modeling & Simulation (4)
CS 135	Virtual Reality (4)	CS 178B	Project Sequence in CS (4)
CS 142	Algorithm Engineering (4)	CS 179 (E-Z)	Project in Computer Science (4 units maximum)
CS 144	Algorithm for Bioinformatics (4)	CS 180	Intro to Software Engineering (4)
CS 145	Combinatorial Optimization Algor. (4)	CS 181	Principles of Programming Languages (4)
CS/EE 147	GPU Programming	CS 182	Software Testing and Verification (4)
CS 150	Theory of Automata & Formal Lang. (4)	CS 183	UNIX System Administration (4)
CS 152	Compiler Design (4)	CS 193	Design Project (4 units maximum)

CS 168 Introduction to VLSI Design (4)

Business Administration Technical Electives:

You must complete at least 16 units of upper division Business Administration Technical Electives, including at least 8 units of courses listed in the Information Systems concentration within the Business Administration major. These units must be distinct from major requirements and may be chosen from any of the available Business Administration courses.

** Choose at least TWO from Information Systems courses:*

BUS 125	Simulation for Business (4)
BUS 128	Project Planning and Control (4)
BUS 171	System Analysis & Design (4)
BUS 172	Information Economics (4)
BUS 173	Introduction to Databases for Mgmt (4)
BUS 174	Electronic Commerce (4)
BUS 175	Business Data Communications (4)
BUS 179	Bus App of GIS

* Choose remaining TWO from:

ANY AVAILABLE UPPER DIVISION BUISNESS ADMINISTRATION (BUS) COURSES, EXCEPT BUS 101

Please note the following credit exceptions:

- No credit is given for BUS 101
- Only one of BUS 171 or CS 180 can be taken for credit
- Only one of BUS 173 or CS 166 can be taken for credit
- Only one of BUS 175 or CS 164 can be taken for credit
- Only one of BUS 125 or CS 177 can be taken for credit

1 Technical Electives may require that you complete additional courses as prerequisites that are not accounted for in the undergraduate program. Please go to www.catalog.ucr.edu for course descriptions and prerequisite information.