

# BUSINESS INFORMATICS

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
<b>FIRST YEAR</b>					
CS 010 <sup>1</sup> <i>C++ Programming I</i>	4	CS 012 <sup>2</sup> or CS 013 <i>C++ Programming II</i>	4	CS 014 <i>Intro to Data Structures &amp; Algorithms</i>	4
ENGL 001A <i>Beginning Composition</i>	4	ENGL 001B <i>Intermediate Composition</i>	4	MATH 009C <i>First Year Calculus</i>	4
ENGR 001M <i>Professional Dev. &amp; Mentoring</i>	1	MATH 009B <i>First Year Calculus</i>	4	Breadth _____ <i>Humanities/Natural Sciences</i>	4
MATH 009A <i>First Year Calculus</i>	4	MATH/CS 011 <i>Intro to Discrete Structures</i>	4		
<b>SECOND YEAR</b>					
BUS 020 <i>Financial Accounting &amp; Reporting</i>	4	MATH 010A <i>Multivariable Calculus</i>	4	ECON 003 <i>Intro to Microeconomics</i>	5
CS 061 <i>Machine Org. &amp; Assembly Lang. Prog.</i>	4	CS 111 <i>Discrete Structures</i>	4	MATH 031 <i>Applied Linear Algebra</i>	5
CS 100 <i>Software Construction</i>	4	STAT 155 <i>Probability &amp; Statistics for Engr</i>	4	Breadth _____ <i>Humanities/Natural Sciences</i>	4
ECON 002 <i>Intro to Macroeconomics</i>	5	Breadth _____ <i>Humanities/Natural Sciences</i>	4	Breadth _____ <i>Humanities/Natural Sciences</i>	4
<b>THIRD YEAR</b>					
BUS 103 <i>Marketing &amp; Distribution Mgmt</i>	4	BUS/STAT 104 <i>Decision Analysis &amp; Mgmt Science</i>	4	BUS 106/ECON 134 <i>Intro to Financial Mgmt</i>	4
CS 141 <i>Interm. Data Structures &amp; Algorithms</i>	4	CS 153 <i>Design of Operating Systems</i>	4	ENGR 180W** <i>Technical Communications</i>	4
SOC 150 <i>Soc. of Economic Organizations</i>	4	CS Technical Elective*** _____	4	CS Technical Elective*** _____	4
ENGR 101M <i>Professional Dev. &amp; Mentoring</i>	1	Breadth _____ <i>Humanities/Natural Sciences</i>	4	Breadth _____ <i>Humanities/Natural Sciences</i>	4
<b>FOURTH YEAR</b>					
CS 165 <i>Computer Security</i>	4	CS Elective <i>CS 164, CS 166, CS 172 or CS 180</i>	4	CS Technical Elective*** _____	4
CS Elective <i>CS 164, CS 166, CS 172 or CS 180</i>	4	CS Technical Elective*** _____	4	BUS Technical Elective*** _____	4
BUS Technical Elective*** _____	4	BUS Technical Elective*** _____	4	BUS Technical Elective*** _____	4
BUS Technical Elective*** _____	4	BUS Technical Elective*** _____	4	Breadth _____ <i>Humanities/Natural Sciences</i>	4

To earn a B.S., you must complete all College and University requirements. For a complete list: [www.catalog.ucr.edu](http://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: \_\_\_\_\_

#### Natural Sciences: (4 courses)

- A. Biological Science: \_\_\_\_\_
- B. Physical Science: \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

#### Ethnicity: (1 course)

- 1. \_\_\_\_\_

#### Upper Division Depth: (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. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

#### Business Administration Technical Electives:

- 1. \_\_\_\_\_ (IS)
- 2. \_\_\_\_\_ (IS)
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_

Course Plan is subject to change.

<sup>1</sup> CS 010V may be used to satisfy this requirement.

<sup>2</sup> CS 012V may be used to satisfy this requirement.

# Business Informatics Technical Electives<sup>1</sup>

## 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 electives for the Computer Science Major. At least three courses must be in the Department of Computer Science and Engineering.

CS 120A	Logic Design	CS 168	Introduction to VLSI Design (4)
CS 120B	Introduction to Embedded Systems (5)	CS 169	Mobile Wireless Networks (4)
CS 122A	Intermediate Embedded & Real-Time Systems (5)	CS 170	Introduction to Artificial Intelligence (4)
CS 122B	Advanced Embedded & Real-Time Systems (5)	CS 171	Intro to Machine Learning & Data Mining (4)
CS 130	Computer Graphics (4)	CS 172	Introduction to Information Retrieval (4)
CS 133	Computational Geometry (4)	CS 177	Modeling & Simulation (4)
CS 134	Video Game Creation & Design (4)	CS 179 E-Z	Project in Computer Science (4 units maximum)
CS 145	Combinatorial Optimization Algorithms (4)	CS 181	Principles of Programming Languages (4)
CS 150	Theory of Automata & Formal Language (4)	CS 182	Software Testing and Verification (4)
CS 151	Introduction to Theory of Computation (4)	CS 183	UNIX System Administration (4)
CS 152	Compiler Design (4)	CS 193	Design Project (4 units maximum)
CS 160	Concurrent Programming & Parallel Systems (4)	EE 140	Computer Visualization (4)
CS 161	Design & Architecture of Computer Systems (4)	MATH 120	Optimization (4)
CS 161L	Lab in Design & Architecture of Computer Sys. (2)	MATH 135A	Numerical Analysis (4)
CS 162	Computer Architecture (4)	MATH 135B	Numerical Analysis (4)

## Business Administration Technical Electives:

You must complete at least 24 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 118	Electronic Marketing (4)
BUS 166	Accounting Information Systems (4)
BUS 171	System Analysis & Design (4)
BUS 172	Information Economics (4)
BUS 173	Introduction to Databases for Management (4)
BUS 174	Electronic Commerce (4)
BUS 175	Business Data Communications (4)
BUS 177	Strategies in Information Systems (4)

*\* Choose remaining THREE from:*

ANY AVAILABLE UPPER DIVISION BUSINESS 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

<sup>1</sup> 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](http://www.catalog.ucr.edu) for course descriptions and prerequisite information.