



Suggested Course Plan for a UC Riverside Major in

# Computer Science

(Catalog Year 2009)

## Fall Quarter

CS 010 (4)  
*C++ Programming I*  
ENGL 001A (4)  
*English Composition*  
MATH 009A (4)  
*First Year Calculus*  
ENGR 001I (1)  
*Professional Dev & Mentoring*

## Winter Quarter

CS 012 (4)  
*C++ Programming II*  
ENGL 001B (4)  
*English Composition*  
MATH 009B (4)  
*First Year Calculus*  
BREADTH (4)  
*Biological Science*

## Spring Quarter

CS 014 (4)  
*Data Structures*  
ENGL 01SC (4)  
*English Composition for Engr*  
MATH 009C (4)  
*First Year Calculus*  
BREADTH (4)  
*Humanities/Social Science*

### First Year

### Second Year

CS 061 (4)  
*Assembly Language Programming*  
CS 100 (4)  
*Software Construction*  
MATH/CS 011 (4)  
*Intro to Discrete Structures*  
PHYS 040A (5)  
*Physics (Mechanics)*

EE/CS 120A (5)  
*Logic Design*  
MATH/CS 111 (4)  
*Discrete Structures*  
PHYS 040B (5)  
*Physics (Heat/Waves/Sound)*  
BREADTH (4)  
*Humanities/Social Science*

CS/EE 120B (5)  
*Embedded Systems*  
PHYS 040C (5)  
*Physics (Electricity/Magnetism)*  
BREADTH (4)  
*Humanities/Social Science*

### Third Year

CS 141 (4)  
*Algorithms*  
CS 161/161L (6)  
*Computer Architecture w/Lab*  
MATH 010A (4)  
*Multivariable Calculus*  
ENGR 101I (1)  
*Professional Dev & Mentoring*

CS 150 (4)  
*Theory of Auto & Formal Language*  
CS 153 (4)  
*Operating Systems*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*  
MATH ELECTIVE (4)  
*\*\*See Catalog List*

ENGINEERING ELECTIVE (4)  
*\*\*See Catalog List*  
ENGR 180 (3)  
*Technical Communications*  
MATH 113 (5)  
*Linear Algebra*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*

### Fourth Year

STAT 155 (4)  
*Probability/Statistics for Engr*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*  
BREADTH (4)  
*Humanities/Social Science*

CS 152 (4)  
*Compilers*  
MATH ELECTIVE (4)  
*\*\*See Catalog List*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*  
BREADTH (4)  
*Humanities/Social Science*

CS 179 (4)  
*Project in Computer Science*  
TECHNICAL ELECTIVE (4)  
*\*\*See Catalog List*  
BREADTH (4)  
*Humanities/Social Science*

### Notes

Humanities/Social Sciences courses fulfill breadth requirements specific to the College of Engineering. A list of approved Breadth courses is available on the College of Engineering Student Academic Affairs website: <http://student.engr.ucr.edu/>.

\*\*Electives are courses in Computer Science which explore specific topics. A list of Electives is available on the College of Engineering Student Academic Affairs website: <http://student.engr.ucr.edu/>, and the UCR College Catalog website: [www.catalog.ucr.edu/](http://www.catalog.ucr.edu/).

## Computer Science Technical Electives

|             |  |
|-------------|--|
| CS 100:     | Software Construction                                    |
| CS 121:     | Rapid Prototyping of Digital Systems                     |
| CS 122A:    | Intermediate Embedded & Real-Time Systems                |
| CS 122B:    | Advanced Embedded & Real-Time Systems                    |
| CS 130:     | Computer Graphics  |
| CS 133:     | Computational Geometry                                   |
| CS 134:     | Video Game Creation & Design                             |
| CS 145:     | Combinatorial Optimization Algorithms                    |
| CS 151:     | Introduction to Theory of Computation                    |
| CS 160:     | Concurrent Programming & Parallel Systems                |
| CS 162:     | Computer Architecture                                    |
| CS 164:     | Computer Networks  |
| CS 165:     | Computer Security  |
| CS 166:     | Database Management Systems                              |
| CS 168:     | Introduction to Very Large Scale Integration VLSI Design |
| CS 170:     | Introduction to Artificial Intelligence                  |
| CS 177:     | Modeling & Simulation                                    |
| CS 179 E-Z: | Project in Computer Science (4 units maximum)            |
| CS 180:     | Introduction to Software Engineering                     |
| CS 181:     | Principles of Programming Languages                      |
| CS 183:     | UNIX System Administration                               |
| CS 185:     | Commercial Software Development                          |
| CS 193:     | Design Project (4 units maximum)                         |
| EE 140:     | Computer Visualization                                   |
| MATH 120:   | Optimization   |
| MATH 135A:  | Numerical Analysis                                       |
| MATH 135B:  | Numerical Analysis                                       |