

# Computer Science

**C**omputer Science is a constantly evolving discipline that requires faculty dedicated to research, combined with approved, updated course work. The CSUB Computer Science Department's computer labs feature a local area Ethernet with Alpha and Sun minicomputers running UNIX. Full Internet access (over T3 lines) is supported.

**UNIX workstations, IBM PCs,** and digital circuits equipment also comprise the lab equipment. Such hardware and software give students abundant hands-on experience in computer programming, platform work, and a solid foundation in this futuristic field of study.

CSUB offers two curriculum tracks, Hardware and Systems Software and Application Software. The Hardware and Systems Software track follows ACM curriculum guidelines and requires more emphasis on mathematics and physics courses. The Application Software track is designed for students who intend to use computers primarily at the applications level.

The goal of Computer Science is to produce graduates with a command of general computer core classes, coupled with a breadth of advanced course work, thus offering students successful placements in graduate studies programs or entry-level jobs with accomplished computer technology skills.

## ***Training and Career Outlook***

A poll issued in Spring 1994 tracking the Department's competency in preparing students with computer knowledge proved quite successful, with a high majority issuing favorable responses. High quality senior projects are emphasized to increase the student's accomplishment level prior to job searching or seeking graduate studies. Proficiency in file structures, database management, networks, programming languages, systems analysis, and other computer concepts are imperative to secure job placement.

As the information superhighway becomes more open to users, as the demand for data increases, and its methods for storing and transporting are continuously upgraded, this cyber-cyclopedic exchange demands those with the greatest degree of competency.

There continues to be a demand for those with degrees in Computer Science. Those with a business or economics minor are at an advantage in securing government jobs.

## ***Internships***

CSUB maintains a relationship with several companies that provide summer internships.

## ***Employment Opportunities***

The Department employs several students as system administrators and assistants for computer science classes. We also maintain a "Jobs Available Board."

## ***Website***

For the most up-to-date information, visit our home page on the World Wide Web: <http://www.cs.csubak.edu>.

## ***Faculty***

**Thomas Meyer, Ph.D., Chair**

*University of California, Los Angeles*

**Mary Coulehan, B.S.**

*California State University, Bakersfield*

**Jiang Guo, Ph.D.**

*Beijing University of Aeronautics & Astronautics*

**King Lee, Ph.D.**

*University of Michigan*

**Donna Elsdon Meyers, B.S.**

*California State University, Bakersfield*

**Laird Taylor, Ph.D.**

*Stanford University*

**Marc Thomas, Ph.D.**

*University of California, Berkeley*

**Huaqing Wang, Ph.D.**

*Case Western Reserve University*



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# Computer Science / Requirements

## *Requirements for the Major*

### **Hardware & Systems Software Track**

This track follows the guidelines of the Association for Computing Machinery (ACM). Students will normally differentiate between hardware and systems software in their electives.

1. A core of nine classes is required:  
CMPS 212 Computer Science I  
CMPS 213 Computer Science II  
CMPS 215 Introduction to UNIX  
CMPS 220 Assembly Language Programming  
CMPS 290 Advanced Object Oriented Programming  
CMPS 300 Discrete Structures  
CMPS 311 Data and File Structures  
CMPS 350 Programming Languages  
CMPS 360 Operating Systems and Systems Software
2. Three additional five-unit courses are required:  
CMPS 320 Logic Design  
CMPS 321 Computer Architecture  
CMPS 490 Senior Seminar/Project
3. Three five-unit courses from the following approved electives: Any Computer Science course at the 200 level or above, with at least ten units of upper division courses, except CMPS 211, CMPS 430 and CMPS 431. MATH 305 is allowed as a Computer Science elective.
4. The following mathematics and physics courses are required:  
MATH 211 Calculus I  
MATH 212/222 Calculus II  
MATH 213 Calculus III  
MATH 330 Linear Algebra  
MATH 338 Variance Analysis **or**  
MATH 339 Regression Analysis **or**  
MATH 340 Probability Theory  
PHYS 221 Classical Physics I  
PHYS 222 Classical Physics II

### **Application Software Track**

This track is intended for training application programmers or for those who wish to apply computer science in another discipline.

1. A core of nine classes is required:  
CMPS 212 Computer Science I  
CMPS 213 Computer Science II  
CMPS 215 Introduction to Unix  
CMPS 220 Assembly Language Programming  
CMPS 290 Advanced Object Oriented Programming  
CMPS 300 Discrete Structures  
CMPS 311 Data and File Structures  
CMPS 350 Programming Languages  
CMPS 360 Operating Systems and Systems Software
2. Three additional courses are required:  
CMPS 370 Structured System Design  
CMPS 440 Database Systems  
CMPS 490 Senior Project/Seminar
3. Three five-unit courses from the following approved electives: Any Computer Science course at the 200 level or above, with at least ten units of upper division courses, except CMPS 211, CMPS 430 and CMPS 431. MATH 305 is allowed as a Computer Science elective.
4. A minor in the desired application area will be required (minor typically requires 20 units of coursework).
5. Two additional five-unit courses are required:  
MATH 120 Quantitative Methods  
MATH 140 Elementary Statistics

## *Requirements for a Minor in Computer Science*

1. The following courses are required:  
CMPS 212 Computer Science I  
CMPS 213 Computer Science II  
CMPS 290 Advanced Object Oriented Programming
2. At least two upper division Computer Science courses and one Computer Science course at the 200 level or above, except CMPS 430 and CMPS 431. MATH 305 is allowed as a Computer Science elective.

### **Scholarships**

- Arts & Sciences Merit Award Scholarship
- National Science Foundation Computer Science, Engineering, and Math Scholarship

### **CSUB Alumni Careers**

#### **Baxter Canfield**

*Manager, Pacific Telephone*

#### **Kyle Fischer**

*Director of Information Systems  
Universal Care, Inc.*

#### **Ross Glenn**

*Manager, IBM*

#### **Wanda Hayes**

*Computer Programmer/Analyst II  
Kern Community College District*

#### **Michael Larson**

*Computer Lab Director  
Walter Stiern Library  
California State University, Bakersfield*

#### **Michael Mize**

*LAN Administrator  
California State University, Fresno*

#### **Chris Nielsen**

*Senior Network Engineer  
Torch Operating Company*

#### **Karen Othart**

*Systems Analyst II  
Occidental Petroleum Corporation*