OBJECTIVES AND LEARNING OUTCOMES

BS/MS Program Objectives

1. *Graduating students have the knowledge and skills to pursue a career in industry and/or continue their education in MS/PhD programs.*
2. *Graduates have the knowledge and skills that enable them to participate in life-long learning and to adapt to an ever-changing technological environment.*

B.S. Student Learning Outcomes

1. Students *will have a broad understanding of computing at all levels of abstraction.*
2. *Students have had the opportunity to focus in depth on selected areas of Computer Science.*
3. *Students will have the training to design and implement a large software system and will have the ability to work both individually and collaboratively.*
4. *Students will be able to communicate effectively orally and in written reports.*
5. *Students will have the skills to pursue careers in industry and/or continue their education in graduate programs.*
6. *Students will have the skills to adapt to the evolving technologies in Computer Science.*

M.S. Student Learning Outcomes

1. Students *will have a broad understanding of computing at all levels of abstraction.*
2. *Students have had the opportunity to focus in depth on selected areas of Computer Science. .*
3. *Students will be able to communicate effectively orally and in written reports.*
4. *Students will have the skills to pursue careers in industry and/or continue their education in PhD programs.*

THE FACULTY

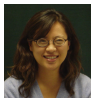
Russ Abbott , PhD. University of Southern California
Specialization: Artificial Intelligence, Web, JAVA, Complex Systems
rabbott@calstatela.edu

Vladimir Akis, PhD, University of California, Davis
Specialization: Computer Graphics, Topology, Dynamical Systems
vakis@calstatela.edu

Valentino Crespi, PhD. University of Milan, Italy
Specialization: Multi-Agent Systems, Tracking, Combinatorics, Petri nets
vcrespi@calstatela.edu

Jiang Guo, PhD. Beijing University of Aeronautics and Astronautics
Specialization: Software Engineering, Networks, Operating Systems
jguo@calstatela.edu

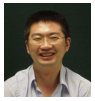
Huiping Guo, PhD. University of Ottawa, CANADA
Specialization: Computer Networks, Data Security
hpguo@calstatela.edu



Eun-Young 'Elaine' Kang, PhD University of Southern California
Specialization: Computer Vision, Computer Graphics, Video processing
eykang@calstatela.edu

Raj Pamula, PhD Southern Illinois University
Specialization: Fault Tolerant Computing, Parallel Processing
rpamula@calstatela.edu

Behzad Parviz, PhD State University of New York at Binghamton
Specialization: Operating Systems, Java
bparviz@calstatela.edu



Chengyu Sun, PhD University of California, Santa Barbara
Specialization: Database Systems, Communication, Network applications
csun@calstatela.edu

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California State University, Los Angeles
Department of Computer Science
5151 State University Dr.
Los Angeles, CA 90032
(323) 343-6690

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Is there a Bachelors or Masters in your future . . .

Would you like to create the next level of software for a popular computer game or design a program that will run an aircraft flight simulator? Does everything about the world of E-commerce and the Internet excite you? Then, computer science is the career for you.

Cal State L.A.'s **Department of Computer Science** will prepare you for careers involving the design of computer systems and their applications to science and industry. Students who complete the degree program will be well qualified for high-paying jobs in a field where unprecedented demand exists for men and women who are trained in computer software skills. You can choose a challenging, fulfilling career from a wide selection of specialties such as computer networks, computer graphics, artificial intelligence, database systems, systems analysis and distributed systems. Our quality-learning environment will further enhance your educational experience. At Cal State L.A.'s College of Engineering, Computer Science, and Technology, you'll have access to 50,000 square feet of newly remodeled, state-of-the-art lab space and equipment, as a result of a $31 million renovation to the Engineering and Technology building.

Bachelor of Science

The program provides an excellent foundation in all core areas of computer science with the opportunity to choose electives in a variety of specialized fields. A minimum of **180** units are required for the degree, including **126 units in the major**.

Lower Division Major Requirements (60-63 units)

CS 120	Introduction to Web Site Development **(3)**
CS 122	Using Relational Databases and SQL **(3)**
CS 201	Introduction to Programming **(5)**
CS 202	Introduction to Object Oriented Programming **(5)**
CS 203	Programming with Data Structures **(5)**
CS 245	Intro. to Comp. Org, O.S.& Networks **(3)**
MATH 206-208	Calculus I,II,III **(4,4,4)**
MATH 248	Discrete Mathematics **(4)**
MATH 255	Introduction to Matrix Theory **(4)**
MATH 270	Probability with Applications **(4)**
PHYS 101-103	General Physics **(4,4,4)**
Or	Or
PHYS 211-213	Physics **(5,5,5)**

Upper Division Major Requirements (42 units)

CS 301	Computer Ethics in the Information Age **(1)**
CS 312	Data Structures and Algorithms **(4)**
CS 320	WEB and Internet Programming **(3)**
CS 332FLC	Functional/Logic/C++ Programming **(2,2,2)**
CS 337	Software Design **(3)**
CS 386	Introduction to Automata Theory **(4)**
CS 437	Software Engineering **(5)**
CS 440	Introduction to Operating Systems **(4)**
EE 444	Computer Architecture **(4)**
CS 490	Computer Science Recapitulation **(2)**
CS 491AB	Software Design Laboratory **(3,3)**

Upper Division Technical Electives (24 units)

Select 6 additional upper division Computer Science courses (CS3xx/4xx except CS342)

Faculty and students work together on programming assignments.

Master of Science

The Master of Science degree in Computer Science prepares students to work at advanced levels in industry, business or government, further graduate work, or to teach at the community college. Students are able to tailor their program to fit career interests and goals.

Program Requirements (45-52 units)

The MSCS degree requires completion of 45-52 units as described in (i) through (iv) below. At least 36 of the 45 units must begin after the student has been admitted to the master's degree program.

(i) Core (12 units)

a. CS512 Analysis and Design of Algorithms (4)
b. CS537 Advanced Software Engineering (4)
c. CS520 Web Programming (4)

(ii) Concentration (12 units) With prior advisor consent, select three courses from A, B, or C .

A. Application Software:
CS522 Advanced Database Systems (4)
CS540 Adv Topics in Operating Systems (4)
CS550 Adv Computer Graphics (4)
CS560 Adv Topics - Artificial Intelligence (4)
CS570 Networks & Distributed Processing (4)
CS575 Human Issues in Computing (4)
CS581 Computer & Network Security (4)

B. System Software:
CS540 Adv Topics in Operating Systems (4)
CS565 Reliable Computing (4)
CS570 Networks & Distributed Processing (4)
CS580 Computer Systems Security (4)
CS588 Languages and Translators (4)

C. Computer Theory:
CS522 Advanced Database Systems (4)
CS560 Adv Topics in Artificial Intelligence (4)
CS565 Reliable Computing (4)
CS586 Theory of Computing (4)
CS588 Languages and Translators (4)

(iii) Four Elective courses (16 units): Choose four other CS 400/500 level courses with the prior approval of the advisor (at least 8 units from 500 level)

(iv) Culminating Experience (5 or 12 units)

- Thesis/Project Option: CS599AB (5 units)
- Comprehensive Exam Option: (12 units)
  i. Choose 12 additional units of 400/500 level courses (at least 8 units from 500 level)
  ii. CS 596 Comprehensive Exam (0 units)