

# Information for Prospective Graduate Students

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## ADMISSION REQUIREMENTS FOR MS COMPUTER SCIENCE

Admission to the Master of Science program in Computer Science requires an acceptable baccalaureate degree from an accredited institution and good standing at the last college or university attended. The following additional **departmental** requirements must be met for admission:

**Grade Point Average:** Applicants with a Computer Science, Software Engineering, or Computer Engineering undergraduate degree are required to have a minimum 3.0 GPA in the last 90 quarter hours (60 semester hours), including a minimum 3.0 GPA in major courses. Minimum 3.25 GPA is required for all other applicants.

**Graduate Record Exam (GRE):** Applicants are expected to achieve the following minimum scores:

**148** - Verbal, **158** - Quantitative, **4.0** - Analytical Writing

*Test scores prior to 2011, please note the score requirements:*

425 - Verbal, 650 - Quantitative, 4.0 - Analytical Writing

For GRE information visit ([www.ets.org/gre](http://www.ets.org/gre)) online or call 1-866-473-4373.

*Request that scores be sent to Cal Poly.*

**Letters of Recommendation:** Applicants must submit 3 letters of recommendation from individuals who can attest to the applicant's academic performance and potential to succeed in graduate study.

Letters should be submitted through **Interfolio** ([apply.interfolio.com/22104](http://apply.interfolio.com/22104)).

**International (Foreign) Applicants:** Applicants are expected to achieve the following minimum TOEFL scores: 80 for internet-based test with at least 20 on each portion; 213 for computer-based test; 550 for paper-based test. Additionally, a minimum score of 4.5 is expected for TWE.

The Cal Poly on-line application requires the University's institution code of **4038** and department code for Computer Science of **0402**. These numbers do not change.

Satisfaction of the minimum requirements does **not** guarantee admission to the program. When the number of qualified applicants is greater than the number who can be admitted, applicants are evaluated on a competitive basis. Applicants with the best grades, test scores, recommendations, and statements of purpose are accepted.

The graduate courses in Computer Science require preparation equivalent to undergraduate studies in a Computer Science major or comparable professional experience. Our program does not require this background for admission and is designed to permit the student to complete the necessary undergraduate course work at Cal Poly ("conditional admission"). Until the background coursework is completed, the student is designated as an "unclassified" graduate student in computer science, but has all of the official status of a graduate student in the university. When the Advancement to Candidacy form is accepted, the student becomes a "classified" graduate student. An applicant who has not taken any undergraduate courses will need about five quarters to complete the required preparatory coursework and their prerequisites prior to enrolling in the required Masters' courses.

Preparatory coursework required for unclassified graduate students may be done at another University, with the consent of the Graduate Coordinator. Students may transfer no more than 12 units of approved 400-500 level courses to their Formal Study Plan. For more detailed graduate student information, refer to the Graduate Programs section in the Cal Poly Catalog at <http://www.catalog.calpoly.edu>. Please refer to the Cal Poly Admissions website <http://admissions.calpoly.edu/> for **University** application requirements. All documents required by the University Admissions must be mailed directly to the Admissions Office.

## APPLICATION DEADLINES FOR MS COMPUTER SCIENCE

### Domestic

Term	Application Deadline	File Completion Deadline	Decision By
Fall	April 1	May 1	May 30
Winter	September 1	October 1	October 30

### International

Term	Application Deadline	File Completion Deadline	Decision By
Fall (Only)	April 1	May 1	May 30

Deadlines and application quarters vary from College to College. The "Application Deadline" date indicates when your application is due to the University Admissions Office. Your completed file will be sent to the department for a decision.

## BLENDDED BS + MS (4+1) ADMISSION REQUIREMENTS

Students majoring in BS Computer Science, BS Software Engineering and BS Computer Engineering are eligible to apply to the blended program if they meet the following minimum eligibility requirements:

- Junior status and completion of 20 units of CSC courses past CPE 103.
- Meet the minimum GPA requirement of 3.0
- Have NOT enrolled in senior project

## BLENDDED BS + MS (4+1) APPLICATION DEADLINES

Term	Application Deadline	Decision By
Fall	April 1	May 30
Winter	September 1	October 30
Spring	January 10	January 30

## ACADEMIC REQUIREMENTS

### **Formal Study Plan GPA Requirement**

A 3.0 GPA or above is required in all graduate level coursework taken to complete the 45 unit requirement. This is a University requirement that must be met by all graduate students.

### **Graduate Writing Requirement (GWR)**

Catalog requirements state that graduate students are required to attempt to pass the GWR their first quarter of study. GWR completion information is available from the Writing & Rhetoric Center at (805) 756-2067, [writingcenter@calpoly.edu](mailto:writingcenter@calpoly.edu) or online at [http://www.writingcenter.calpoly.edu/content/gwr/gwr\\_faq](http://www.writingcenter.calpoly.edu/content/gwr/gwr_faq).

### **Advancement to Candidacy for Conditional Admits**

Advancement to candidacy requires that an applicant without a computer science degree must complete the following preparatory courses and receive a "B" or better in each:

CPE 103	Fundamentals of Computer Science III (4)
CPE 307*/308	Software Engineering I (4)
CPE 315	Computer Architecture (4)
CPE 349	Design and Analysis of Algorithms (4)
CPE 357	Systems Programming (4)
CPE 430	Programming Languages I (4)
CSC 445	Theory of Computation I (4)
CPE 453	Introduction to Operating Systems (4)

\*CPE 307 is the preferred course.

In special circumstances the Graduate Coordinator may add or remove courses from the list, depending on your background. If you are unsure of the preparatory courses you need to take, make an appointment with the Graduate Coordinator as soon as possible.

If a grade in any preparatory course is below a B-, an academic probation letter will be mailed to the student. If you receive a letter, make an appointment with the Graduate Coordinator to discuss your options and obtain his/her signature on the letter.

These courses plus those listed on the Formal Study Plan must be taken for a grade, except for those courses that allow only Credit/No Credit grading or prerequisites to preparatory courses, which may be taken Credit/No Credit.

The following page displays a chart outlining the preparatory courses and their prerequisites. Please discuss taking any of the preparatory course prerequisites with the Graduate Coordinator.

## Advancement to Candidacy for Conditional Admits Flowchart

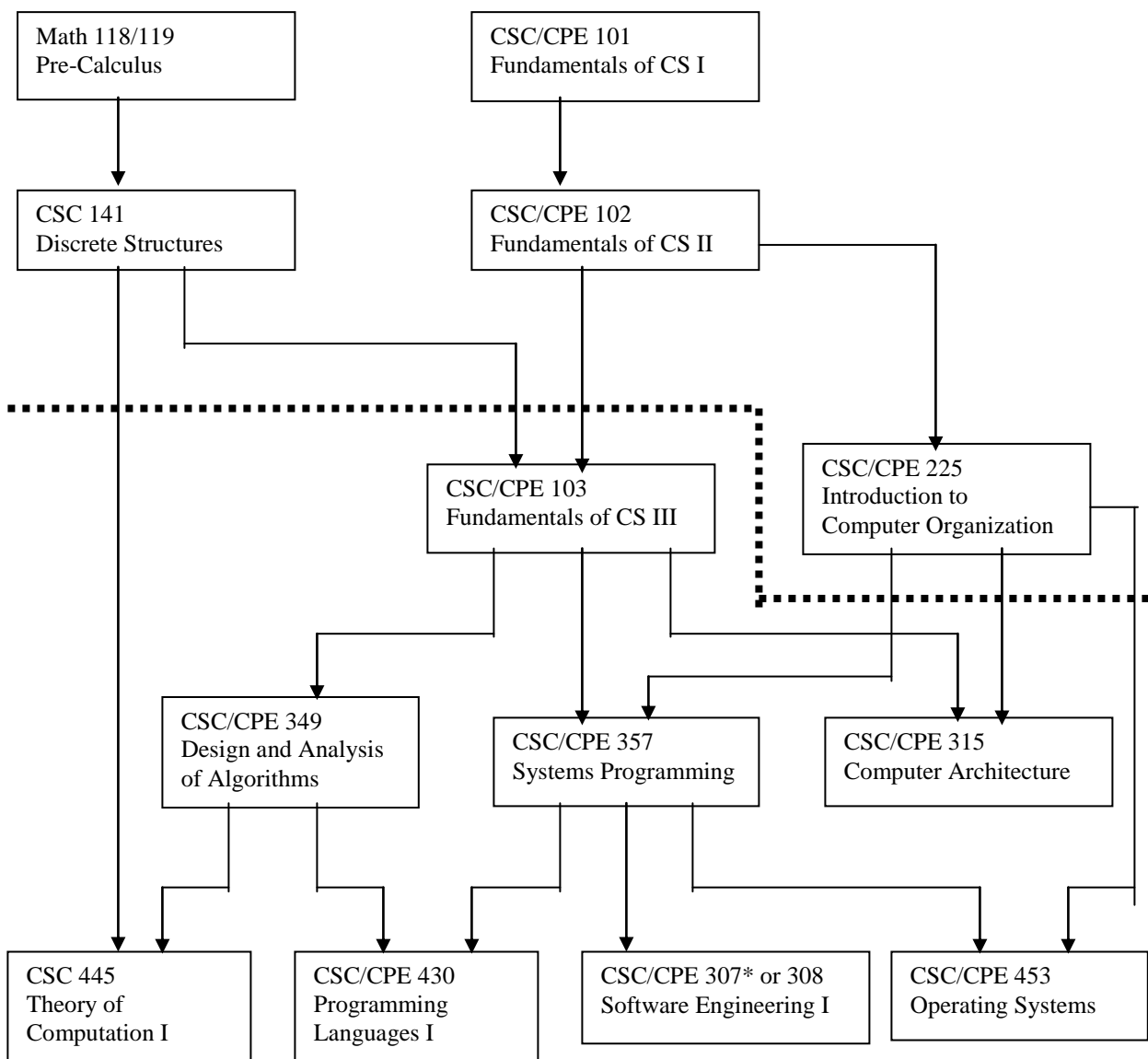


Diagram of preparatory courses (8 courses) and their prerequisites (located above the dotted lines) to be taken prior to the 45 units for the Master's degree in Computer Science.

\*CSC/CPE 307 is the preferred course.

## GENERAL INFORMATION

### **Web Site**

Consult the CSC website for general department information, faculty information or current news at <http://www.csc.calpoly.edu>.

### **Computer Labs**

Computer science graduate students can expect to use a variety of PCs, workstations and servers. Some will be shared campus resources; some will be exclusive to computer science majors. The Computer Systems Lab's (CSL) special use labs include: software engineering, computer graphics, animation and virtual reality, distributed systems, database systems, human-computer interaction, artificial intelligence, operating systems, and networking/communications.

### **CSC Study Support Center**

The CSC study support center offers free assistance on an individual basis to students in the introductory CSC courses: CSC/CPE 101, 102, 103 and 141. Tutoring may also be available on some nights for CSC/CPE 357. Tutoring is provided by carefully chosen upper-class students from the CSC and CPE majors. The center provides assistance Sunday through Thursday evenings. Flyers giving more information on the time and location of the tutoring will be posted at the beginning of the second week of each quarter. Students interested in tutoring should contact Dr. Clint Staley (cstaley@calpoly.edu). More information can be found at <http://www.csc.calpoly.edu/resources/tutoring>.

### **Information Resources**

<b>Academic Resources</b>	
Cal Poly homepage	<a href="http://www.calpoly.edu">http://www.calpoly.edu</a>
College of Engineering homepage	<a href="http://ceng.calpoly.edu/">http://ceng.calpoly.edu/</a>
CS Dept homepage	<a href="http://www.csc.calpoly.edu">http://www.csc.calpoly.edu</a>
Catalog	<a href="http://www.catalog.calpoly.edu">http://www.catalog.calpoly.edu</a>
Academic calendar	<a href="http://www.catalog.calpoly.edu/">http://www.catalog.calpoly.edu/</a>
CSC Graduate Coordinator	<a href="mailto:dekhtyar@calpoly.edu">dekhtyar@calpoly.edu</a>
CENG Advising Center	<a href="http://www.eadvise.calpoly.edu">http://www.eadvise.calpoly.edu</a>
Graduate Education Office	<a href="http://www.grad.calpoly.edu/">http://www.grad.calpoly.edu/</a>
GWR Information	<a href="http://www.writingcenter.calpoly.edu/content/gwr/gwr_faq">http://www.writingcenter.calpoly.edu/content/gwr/gwr_faq</a>
Admissions Office	<a href="http://admissions.calpoly.edu/">http://admissions.calpoly.edu/</a>
Registration Fees	<a href="http://www.afd.calpoly.edu/fees">http://www.afd.calpoly.edu/fees</a>
<b>Campus Facilities</b>	
Eateries	<a href="http://www.calpolydining.com/">http://www.calpolydining.com/</a>
Library	<a href="http://www.lib.calpoly.edu">http://www.lib.calpoly.edu</a>
Maps of the campus	<a href="http://www.maps.calpoly.edu">http://www.maps.calpoly.edu</a>
Campus tour	<a href="http://www.calpoly.edu/visitors/visitors.html">http://www.calpoly.edu/visitors/visitors.html</a>
Parking	<a href="http://afd.calpoly.edu/police/services_parking.asp?pid=7">http://afd.calpoly.edu/police/services_parking.asp?pid=7</a>
Performing Arts Center	<a href="http://www.pacslo.org">http://www.pacslo.org</a>
<b>Communications and Events</b>	
Events, publications, news releases, highlights	<a href="http://www.calpolynews.calpoly.edu">http://www.calpolynews.calpoly.edu</a>
On-Campus Telephone directory	<a href="http://www.servicedesk.calpoly.edu/telephone_support/phonedirectory.html">http://www.servicedesk.calpoly.edu/telephone_support/phonedirectory.html</a>

<b>Computing Resources</b>	
Help Desk	<a href="http://www.helpdesk.calpoly.edu">http://www.helpdesk.calpoly.edu</a>
Information Technology Services (ITS) - computing resources, services, policies, help desk, ...	<a href="http://www.servicedesk.calpoly.edu">http://www.servicedesk.calpoly.edu</a>
<b>TA Resources</b>	
Lots of links to campus computing, library, calendars, academic personnel, publications, maps, etc; SLO cultural resources, government, outdoor activities, housing, public transportation	<a href="http://www.cla.calpoly.edu/~dschwart/newfaculty/newfacultyresource.html">http://www.cla.calpoly.edu/~dschwart/newfaculty/newfacultyresource.html</a> <a href="http://www.calpoly.edu/faculty/faculty.html">http://www.calpoly.edu/faculty/faculty.html</a>
TA Coordinator for Computer Science	<a href="mailto:sabrownl@calpoly.edu">sabrownl@calpoly.edu</a>
<b>San Luis Obispo County</b>	
Central coast visiting guide	<a href="http://www.centralcoast.com">http://www.centralcoast.com</a>
SLO visiting guide	<a href="http://www.visitslo.com">http://www.visitslo.com</a>
The Tribune newspaper	<a href="http://www.sanluisobispo.com">http://www.sanluisobispo.com</a>
Public schools	<a href="http://www.greatschools.net/california/san-luis-obispo/public/schools">http://www.greatschools.net/california/san-luis-obispo/public/schools</a> <a href="http://www.slocoe.org/resource/maps/gmaps">http://www.slocoe.org/resource/maps/gmaps</a>
Housing websites	<a href="http://www.housing.calpoly.edu">http://www.housing.calpoly.edu</a> <a href="http://www.slorent.com">http://www.slorent.com</a> <a href="http://www.slorentals.net">http://www.slorentals.net</a> <a href="http://www.california-west.com/sloads">http://www.california-west.com/sloads</a> <a href="http://www.regmgmt.com">http://www.regmgmt.com</a> <a href="http://www.sanluisobispo.com">http://www.sanluisobispo.com</a>
<b>Student Resources</b>	
Enrolled students – records, testing, library, financial aid, clubs, housing, policies	<a href="http://www.calpoly.edu/student/enrolled.html">http://www.calpoly.edu/student/enrolled.html</a>



## CURRICULUM INFORMATION

### **Degree Requirements**

The MS degree requires at least 45 units beyond the undergraduate degree. Courses must be chosen according to the following requirements:

**Core graduate courses:** ..... 20 units

Select five courses from the following list:

- CSC 508 Software Engineering I (4)
- CSC 509 Software Engineering II (4)
- CSC 520 Computer Architecture (4)
- CSC 530 Language and Translators (4)
- CSC 540 Theory of Computation II (4)
- CSC 541 Numerical Methods (4)
- CSC 550 Operating Systems (4)
- CSC 556 Computer Security (4)
- CSC 560 Database Systems (4)
- CSC 564 Computer Networks: Research Topics (4)
- CSC 568 Distributed Systems (4)
- CSC 569 Distributed Computing (4)
- CSC 570 Current Topics in Computer Science (2-4)
- CSC 572 Computer Graphics (4)
- CSC 580 Artificial Intelligence (4)
- CSC 581 Computer Support for Knowledge Management (4)

**Electives to be selected with Graduate Coordinator's approval:** ..... 16 units

Electives must be 400-500 level courses, and are most typically in computer science subject matter.

**Thesis coursework** ..... 9 units

- CSC 590 Thesis Seminar (1)
- CSC 596 Thesis I (2)
- CSC 597 Thesis II (3)
- CSC 599 Thesis III (3)

**TOTAL** ..... **45 units**

For further information or advisement students should communicate with the Graduate Coordinator of the Computer Science Department.

### **Courses**

Yearly course offerings planned by the department are available at <http://www.csc.calpoly.edu/courses>.

## FINANCIAL AID AND FELLOWSHIPS

Engineering students feel enough pressure pursuing their education without having to worry about money. Cal Poly's Financial Aid Department has several services for students who need financial assistance. Further information about services available at the Financial Aid Office can be located on their website at <http://financialaid.calpoly.edu/>.

### **Scholarships**

Each year students with good grade point averages can apply for and receive scholarships in amounts ranging from \$500 to \$5,000. All applicants must complete the normal Cal Poly scholarship application process. This includes filing the Free Application for Federal Student Aid (FAFSA). Step-by-step instructions are available at <http://financialaid.calpoly.edu/finaid/apply/index.htm>. The University scholarship application deadline is March 2, and applications are filed in the Financial Aid Office. The Computer Science awards are presented at the ACM/CSC Banquet.

Department scholarship information is available online at <http://www.csc.calpoly.edu/resources/scholarships>.

### **Fellowships**

#### **JL Moore Fellowship**

Cal Poly BS graduates and admitted CSC MS students interested in a Ph.D. in computer science are eligible to apply for the Computer Science department fellowship. The Department offers several Endowed Fellowships of up to \$10,000 each per year for full time doctoral study in computer science in any recognized computer science department. Ongoing support for up to a total of three years may be provided. Fellowship recipients must be enrolled in [and admitted to] a recognized doctoral program in computer science in the USA

- Applicants must have a BS or MS degree from the Computer Science department of Cal Poly, SLO (in any major) or are currently enrolled in the BS or MS program in the CSC department (in any major) and will graduate during the Fellowship application year.
- Applicants must intend to pursue a Ph.D. degree in CSC at a recognized university in the US.
- Applicants must have a strong academic record, promising successful completion of Ph.D. degree.
- Applicants must be United States citizens or permanent resident aliens of the United States.

*Fellowship Application Deadline:* March 1 of the award year

Find more information and application at <http://www.csc.calpoly.edu/resources/moore-doctoral-fellowship>. Questions may be directed to the Graduate Faculty Coordinator, Alex Dekhtyar ([dekhtyar@calpoly.edu](mailto:dekhtyar@calpoly.edu)).

#### **Graduate Equity Fellowship**

This program seeks to increase the diversity of students completing graduate degree programs in the CSU and encourages continuation on to doctoral programs and consideration of university faculty careers. It provides fellowships for economically disadvantaged students, especially from groups that are underrepresented among graduate degree recipients in their areas of study, and promotes faculty mentoring and research opportunities. More information and application are available at <http://www.grad.calpoly.edu/resources/fellowship.html>.

## **OTHER SOURCES OF INCOME**

### **Instructional Student Assistant Positions**

The Computer Science Department may employ graduate students as instructional student assistants. Sometimes graduate students are also used as laboratory assistants or graders in more advanced courses.

Criteria for employment include (1) good academic standing as a graduate student, (2) evidence of (or the promise of) skill as a teacher, and (3) knowledge of the content of the course to be taught, and (4) currently enrolled. Preference is given to applicants who have already been graduate students on campus for at least one quarter; however, new graduate students are encouraged to apply.

Graduate students interested in an ISA appointment in CSC should submit an application, transcripts, current resume and a teaching preference list to the department. Applicants lacking experience as a paid teacher or tutor are encouraged to attach a description of their experience as a volunteer teacher, coach, or mentor. Forms are available at <http://www.csc.calpoly.edu/jobs/ta>. Questions may be directed to the Graduate Faculty Coordinator.

### **Student Assistant Grader/Tutor**

Graduate students may also earn money grading for upper level courses or working in the CSC Study Support Center. The pay range for graduate students is approximately \$11.00 to \$14.00 per hour.

### **Research Assistantships**

Several faculty in the Computer Science department are involved in research projects each quarter. Seek the advice of the Graduate Coordinator as to which faculty members are working on projects.

### **Co-Ops**

Graduate students may decide to get some industry experience before they finish their degree by taking CSC 594 or CSC 595 units for co-op for one or two quarters. Generally co-ops are a good avenue to gain valuable experience in a desired field, make contacts and earn additional money. Graduate students may not use co-op units, 12 for full time and 6 for half-time employment, towards the degree.

### **Non-Resident Tuition Waivers**

A limited number of non-resident tuition waivers are available for out-of-state graduate students. Tuition waivers will normally be for four consecutive quarters, beginning with the first term of enrollment and are non-renewable (students may be able to establish California residency during that period). International students are also eligible.

A request for tuition waiver for Fall quarter admission must be received by June 1. A request for tuition waiver for Winter quarter must be received by December 1. More information is available on-line at <http://grad.calpoly.edu/resources/non-resident.html>. Questions may be addressed to the Graduate Education office (email: [grad@calpoly.edu](mailto:grad@calpoly.edu), phone: (805)756-2328).

## THESIS

A Computer Science graduate student will complete a thesis and related coursework to fulfill their thesis requirement. A committee-approved copy must be completed in accordance with university specifications. Guidelines to be followed in preparing final copy for filing with the university can be obtained from the Graduate Education Office or on-line at <http://www.grad.calpoly.edu/policies/index.html>.

### **Thesis Guidelines**

The following are general guidelines for a thesis.

#### **What is a Master's Thesis?**

- A written product of a systematic study of a significant problem
- Identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation
- Evidences originality, critical and independent thinking, appropriate organization and format, and thorough documentations
- Normally, an oral defense of the thesis is required
- Potentially publishable.