

COMPUTER SCIENCE UNDERGRADUATE STUDENT HANDBOOK



**Computer Science Department
College of Engineering and Computer Science
California State University, Sacramento**

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DEPARTMENT OF COMPUTER SCIENCE MISSION STATEMENT

The mission of the Department of Computer Science is to:

- Be a department of choice for high-quality and innovative undergraduate and graduate degree programs in computer science, software engineering, and computer engineering.
- Educate a diverse student population.
- Foster research and professional development activities that enable faculty to maintain currency in their fields, and engage students in research.
- Provide technological leadership to the University community and the Sacramento region.
- Provide experiences that reflect state-of-the-art/state-of-the-practice by incorporating new areas and technologies into its academic programs.
- Strive to serve regional educational needs for professional development and interdisciplinary programs.
- Participate in the development of new technologies that drive local, regional, and national economies through interaction with industry.

B.S. OF COMPUTER SCIENCE PROGRAM EDUCATIONAL OBJECTIVES

Three to five years after graduation, a graduate of the B.S. in computer science should have:

1. Made contributions to the development, maintenance, and support of real world computing systems.
2. Taken initiative and assumed responsibilities as an effective member of project teams.
3. Worked independently and functioned effectively in an environment with incomplete information.
4. Progressed in the computing field, engaged in professional development, and/or pursued an advanced degree.
5. Produced quality technical and non-technical documents and presentations for a variety of audiences.
6. Adhered to the ethical standards of the profession and understood the implications of his/her professional activities.

COMPUTER SCIENCE STUDENT LEARNING OUTCOMES

At graduation, a B.S. in computer science graduate should be able to:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- 3-a. Communicate effectively in speech in a variety of professional contexts.
- 3-b. Communicate effectively in writing in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

COMPUTER SCIENCE FACULTY

TEACHING INTERESTS & AREAS OF SCHOLARSHIP

Faculty	Teaching Interests	Areas of Scholarship
Arad, Behnam	Hardware Design and Validation using EDA tools; Computer architecture; Parallel computing.	Design of Power-efficient Hardware; Validation of Complex Embedded Systems; Hardware Security.
Baynes, Anna	Information Visualization, Algorithms, Software Engineering, Information Analytics.	Information Visualization, Visual Analytics
Chen, Haiquan (Victor)	(No)SQL Databases, Data Analytics and Mining; Dynamic Webs, Data Science Education.	Machine Learning; Security on Location-based Social Networks; Cyber-Physical Systems.
Cheng, Yuan	Algorithms; Security; Cloud Computing.	Security; Privacy; Social Computing; Cloud Computing.
Dai, Jun	Network Security; Computer Networking; Computer Forensics.	Network and Distributed System Security; Big Data in Enterprise Cyber Security Space; Cloud Security; Mobile Security.
Faroughi, Nikrouz	Digital Logic; Computer Architecture.	Single and Multiprocessor Systems Architecture; Computer Security through Hardware.
Ghansah, Isaac	Computer Security and Privacy; Computer Networks; Computer Architecture.	Security Issues in Critical Infrastructures such as Smart Grid; Computer Forensic Investigation.
Gordon, V. Scott	Artificial Intelligence; Graphics; Video Game Architecture.	Artificial Intelligence; Neural and Evolutionary Computation; Computer Science K12 Education.
Jin, Ying	Database Design, Database System Implementation, Data structures; Algorithm Analysis.	Database Systems and Applications; Event and Rule Processing in Centralized and Distributed Environments; Data Security and Privacy.
Krovetz, Ted	Computer programming; Discrete mathematics; Design and Analysis of Algorithms; Compilers; Cryptography.	High-speed Provable Symmetric Cryptography; Authenticated Encryption; Universal Hashing; Specification and Implementation of Cryptographic Algorithms.
Muyan-Ozcelik, Pinar	Computer Games and Graphics; Mobile Computing; GPU Computing.	Running Real-time Tasks on Embedded Systems using GPU Computing; Multitasking among such tasks.
Ouyang, Jinsong	Distributed Systems; Data Structures and Algorithm Analysis; Operating Systems.	Distributed Systems Including Cloud Computing, Mobile and Ubiquitous Computing, and Computer Networks.
Phoulady, Parham	Algorithms; Theory of Computation; Discrete Structures; Machine Learning.	Machine Learning; Medical Image Analysis; Biomedical Image Segmentation.
Salem, Ahmed	Software Engineering; Software Testing and Quality Assurance;	Requirements Specification and Design Modeling; Verification and Validation

	System Requirements Engineering.	Methodology and Techniques; Information Assurance.
Shobaki, Ghassan	Compilers; Algorithms and Theory of Computation; Operating Systems.	Compiler Optimizations; Combinatorial Optimization Algorithms; Computer Architecture and System Performance.
Sun, Xiaoyan	Computer Networks; Network Security; System Security.	Enterprise-level Network/Distributed System Security; Cloud Security; Cyber Situational Awareness; Vehicular Ad hoc Network (VANET); Intelligent Transportation System (ITS).
Wang, Xuyu	Computer Network; Machine Learning; Mobile Computing; Algorithms.	Computer Network; Deep Learning; Indoor Localization; Internet of Things; Mobile Health; Wireless Systems.
Yang, Jingwei	Software Engineering; Requirements Engineering; Java Programming; Data Structures; Data Science.	Software Engineering; Requirements Engineering; Knowledge Engineering; Data Analytics; Human-Computer Interaction.
Zhang, Cui	Programming Language Theories and Paradigms; Formal Methods for Secure Software Engineering; Software Architecture.	Formal Methods for Secure Software Engineering; Secure Coding for Software Security; Software Architecture; Programming Language Theories and Paradigms.

CAREER POSSIBILITIES

- ◆ Computer Scientist
- ◆ Software Engineer
- ◆ Information Technology Specialist
- ◆ Scientific Application Programmer
- ◆ Computer Services Coordinator
- ◆ Computer Game Developer
- ◆ Data Processing Manager
- ◆ Network Administrator
- ◆ Software Requirements Engineer
- ◆ Software Quality Assurance Specialist
- ◆ Systems Manager
- ◆ Computer Graphics Specialist
- ◆ Systems Engineer
- ◆ Information Assurance Specialist
- ◆ Data Mining Analyst
- ◆ IT Business Analyst
- ◆ Technical Control Specialist
- ◆ Computer Engineer
- ◆ Computing Science Educator
- ◆ Computer Systems Analyst
- ◆ Computer Operations Manager
- ◆ Database Administrator
- ◆ Data Communications Manager
- ◆ Data Processing Application Programmer
- ◆ Programmer Analyst
- ◆ Software Architect
- ◆ Software Development Project Manager
- ◆ Systems Programmer
- ◆ Knowledge Engineer
- ◆ Cyber Security Specialist
- ◆ Information Security Officer
- ◆ Web/eCommerce Developer
- ◆ IT Infrastructure Specialist
- ◆ Technical Representative

DEGREE REQUIREMENTS AND CATALOG RIGHTS

The computer science program has major changes that are in effect beginning Fall 2021. The degree requirements are located on the University [Catalog website](#).

Continuing students or transfer students that have catalog rights from prior years (see below) have the option to follow the degree requirements in effect at that time. See the [Archived Catalog](#)

Catalog rights prior to Fall 2021, the program offered Math and science requirements that were flexible, allowing many choices. The courses you choose should reflect your goals, preparation and interests. See page 9 for more detailed information.

If students are unsure catalog rights to pick, please consider the following [information](#) that was created by the department to help guide your decision:

Speaking of catalog rights...

Since University requirements change periodically, it is important that you know which set of GE and major requirements apply to you, and what catalog options are available to you:

- ◆ **First Year.** Students who enter Sacramento State as a first year use the catalog requirements in effect when they begin at Sacramento State. For example, if you graduated from high school last Spring and began at Sacramento State in the Fall Semester 2020, your catalog rights begin in Fall 2020 and you are required to fulfill the GE and major requirements outlined in the University catalog in effect in Fall 2020. As long as you maintain continuous enrollment (defined below), you will not be responsible for any requirements added after that time. Students also have the option of choosing to meet the catalog requirements in effect when they graduate from Sacramento State.
- ◆ **Transfer Students.** Students who transfer to Sacramento State may use (1) the catalog requirements in effect when they enter Sacramento State, (2) the catalog requirements in effect when they graduate from Sacramento State, or (3) the requirements which were in effect when their continuous enrollment (defined below) began. For example, if you began at Sierra College in Fall 2018 and have been continuously enrolled since then, you have catalog rights to Fall 2018.
- ◆ **Continuous Enrollment** - begins when you have graduated from high school and enroll in either a California State University (such as Sacramento State) or a California Community College (such as American River College). You maintain continuous enrollment as long as you register one semester in each calendar year.
- ◆ For more information, please see: <https://catalog.csus.edu/baccalaureate-degree-requirements/>

ADVISING FOR MATH & SCIENCE REQUIREMENTS

(only valid for Catalog 2020-21 and prior)

1. General Advice

Math and science requirements are flexible, allowing many choices. The courses you choose should reflect your goals, preparation and interests.

Calculus. Your first choice is whether to take MATH 26A/26B or MATH 30/31. The MATH 26 sequence is more conceptual and focuses on applications in social and life science. MATH 26A/26B is less rigorous than MATH 30/31, requiring only Algebra II from high school (or MATH 11) as a prerequisite. MATH 30/31 is designed for math, science and engineering majors; and prepares students for more advanced study in mathematics. Which should you take? You should probably take MATH 30/31 if you have done well in mathematics courses through pre-calculus, you are considering graduate study or changing majors to engineering, or you would like to take some more advanced math courses. MATH 30/31 leaves open to you more options.

Statistics. If you take MATH 26A/26B, then you must take STAT 50. If you take MATH 30/31 then you have a choice between STAT 50 and ENGR 115. STAT 50 is a four unit course that covers a wider variety of topics at a deeper level. ENGR 115 is a two unit short course with most students and examples coming from the realm of engineering. STAT 50 should be taken unless the two unit difference allows you to take an extra math or science course that otherwise would not fit in your academic plan.

Physics. If you take MATH 26A/26B, then you must take PHYS 5A. If you take MATH 30/31 then you have a choice between PHYS 5A and PHYS 11A. PHYS 11A uses calculus to explain many natural phenomena and PHYS 5A does not. If you take MATH 30/31, PHYS 11A is recommended. It's a perfect opportunity to see why Isaac Newton needed to invent calculus. When you choose your electives, PHYS 5B and PHYS 11C are good choices because they deal with electricity, which helps understand computer hardware at the physical level.

Electives. Beyond the courses discussed above, you must complete enough additional math and science electives to bring your math and science total to at least 24 units. Depending on the calculus and statistics course you choose, this means an additional 8-10 units. At least one elective course must be another math or statistics course, or PHIL 160, but the remainder may be either more math or more science. Because linear algebra is a pervasive tool in many branches of science and engineering, including computer science, MATH 100 is highly recommended as one of your elective choices.

Math minor, statistics minor or physics certificate. You can get a math or statistics minor (which is a great complement to computer science and looks good on your resume) if you complete MATH 30, MATH 31, STAT 50 and three upper division math or statistics courses. These six courses along with PHYS 5A or PHYS 11A will satisfy the computer science math and science requirements and earn you a minor at the same time. This path requires 25 units of math and science, which is only one more than what is already required. Some upper-division applied math courses especially good for computer science are MATH 100, 150, and STAT 155. Students wanting a strong background in probability and statistics can get a math minor by taking MATH 100, STAT 115A, 115B, or a statistics minor by taking STAT 103, 115A, 115B. You can receive a "scientific computing and simulation" certificate from the physics department if you choose PHYS 5B or 11C, and PHYS 162 and 163 as electives, but this requires a minimum of 27 units (ie, one extra class).

Questions? See your advisor.

2. Sample Math and Science Pathways

The following are common ways to satisfy the math and science requirements. You may choose one that meets your goals, preparation and interests, or design your own pathway. As always, see your advisor if you have any questions.

First Year and Transfer Students (24-26 units)

Requirements: MATH 30, MATH 31, STAT 50 or ENGR 115, PHYS 11A

Electives: MATH 100, PHYS 11C, and any math or science elective of interest

Notes: Good for first-year students who have done well in a pre-calculus course or are considering graduate school or changing majors to computer engineering. Also good for transfer students who have already taken MATH 30, 31, and PHYS 11A, 11C (eg, AS-T degree holders).

MATH 26A/26B (24 units)

Requirements: MATH 26A, MATH 26B, STAT 50, PHYS 5A

Electives: MATH 100, PHYS 5B, and any math or science elective of interest

Notes: For students not interested in MATH 30/31. Elective options are limited because many courses have MATH 30 or 31 as prerequisite.

Math Minor (25 units)

Requirements: MATH 30, MATH 31, STAT 50, PHYS 11A

Electives: Any three upper-division MATH or STAT courses with calculus as a prerequisite.

Notes: Highly recommended courses are MATH 100, 150 and STAT 155. Other good courses are MATH 101, 170, STAT 115A, 115B.

Statistics Minor (25 units)

Requirements: MATH 30, MATH 31, STAT 50, PHYS 11A

Electives: STAT 103, STAT 115A, STAT 115B.

Scientific Computing and Simulation Certificate (27-29 units)

Option 1: MATH 30, 31, 100, STAT 50 or ENGR 115, PHYS 11A, 11C, 162, 163

Option 2: MATH 26A, 26B, 100, STAT 50, PHYS 5A, 5B, 162, 163

Notes: In both options, a math elective is also required. MATH 100 is recommended.

Math courses for computer science students

All of the following courses are appropriate for computer science majors and count as a math elective. (Prerequisites in parentheses). More applied courses: MATH 100 Applied Linear Algebra (MATH 26B or 31), MATH 150 Numerical Analysis (MATH 31), STAT 103 Intermediate Statistics (STAT 50), STAT 155 Introduction to Techniques of Operations Research (MATH 31, STAT 50). More theoretical: MATH 101 Combinatorics (MATH 31), MATH 170 Linear Programming (MATH 31, 100), PHIL 160 Deductive Logic II (CSC 28), STAT 115A Introduction to Probability Theory (STAT 50).

3. Math 26A/26B Track vs Math 30/31 Track

MATH 26A/26B Track (24 units)

Required (14)

- | | | |
|-----|----------|--|
| (3) | MATH 26A | Calculus I for Social and Life Sciences (MATH 11) |
| (3) | MATH 26B | Calculus II for Social and Life Sciences (MATH 26A or appropriate high school based AP credit) |
| (4) | STAT 50 | Introduction to Probability and Statistics (MATH 26A or MATH 30) |
| (4) | PHYS 5A | General Physics: Mechanics, Heat, Sound (MATH 9) |

Electives (10)

Note: To satisfy the requirement of CAC, the Computing Accreditation Commission of ABET, which accredits computer science programs, **one or more electives must be from MATH, STAT, or PHIL** (MATH 100 Linear Algebra is recommended).

- | | | |
|-----|----------|---|
| (3) | MATH 100 | Linear Algebra (MATH 26B or MATH 31) |
| (3) | CSC 148 | Modeling and Experimental Design (MATH 26B or MATH 31, STAT 50 or ENG 115, and proficiency in a programming language) |
| (5) | CHEM 1A | General Chemistry I (High school chemistry, college algebra, or minimum grade of "C" in CHEM 4) |
| (3) | PHIL 160 | Deductive Logic II (CSC 28 or PHIL 60) |
| (4) | PHYS 5B | General Physics: Light, Electricity, and Magnetism, Modern Physics (PHYS 5A) |
| (3) | PHYS 162 | Scientific Computing: Basic Methods (MATH 26A or MATH 30 and PHYS 5A, or MATH 30 and PHYS 11A, or MATH 105A concurrently) |
| (3) | PHYS 163 | Scientific Computing: Modeling, Simulation, and Visualization (PHYS 162) |

MATH 30/31 Track (24 units)

Required (14-16)

- | | | |
|-------|----------|--|
| (4) | MATH 30 | Calculus I (MATH 29) |
| (4) | MATH 31 | Calculus II (MATH 30) |
| (2-4) | | |
| (4) | STAT 50 | Introduction to Probability and Statistics (MATH 26A or MATH 30) |
| | or | |
| (2) | ENGR 115 | Statistics for Engineers (MATH 31, may be taken concurrently) |
| (4) | PHYS 5A | General Physics: Mechanics, Heat, Sound (MATH 9) |
| | or | |
| | PHYS 11A | General Physics: Mechanics (MATH 30, 31) |

Electives (8-10)

Note: To satisfy the requirement of CAC, the Computing Accreditation Commission of ABET, which accredits computer science programs, **one or more electives must be from MATH, STAT, or PHIL** (MATH 100 Linear Algebra is recommended).

- | | | |
|-------|--|--|
| (3-4) | <u>Any MATH or STAT course with calculus as a prerequisite</u> may be taken, e.g., MATH 32, 45, 100, 101, 102. | |
| (3) | CSC 148 | Modeling and Experimental Design (MATH 26B or MATH 31, STAT 50 or ENGR 115, and proficiency in a programming language) |
| (5) | CHEM 1A | General Chemistry I (High school chemistry, college algebra, or "C" in CHEM 4) |
| (4) | CHEM 1E | General Chemistry for Engineering (MATH 30 and minimum grade of "C" in CHEM 4) |
| (3) | PHIL 160 | Deductive Logic II (CSC 28 or PHIL 60) |

- (4) PHYS 5B General Physics: Light, Electricity, and Magnetism, Modern Physics (PHYS 5A)
- (4) PHYS 11B General Physics: Heat, Light, and Sound (MATH 31, PHYS 11A)
- (4) PHYS 11C General Physics: Electricity and Magnetism, Modern Physics (MATH 31, PHYS 11A)
- (3) PHYS 106 Introduction to Modern Physics Computing (MATH 31; PHYS 11A, PHYS 11B, PHYS 11C or PHYS 5A, 5B)
- (3) PHYS 162 Scientific Computing: Basic Methods (MATH 26A or MATH 30 and PHYS 5A, or MATH 30 and PHYS 11A, or MATH 105A concurrently)
- (3) PHYS 163 Scientific Computing: Modeling, Simulation, and Visualization (PHYS 162)

MAJOR Status: Pre-CSC vs CSC...

ALL undergraduate students, even transfer students, enter Sac State as a Pre-major (aka "Pre-computer science").

Students remain "Pre-CSC" while completing all of the lower division requirements (ie CSC 15, 20, 28, 35, 60; Math 26A/26B track OR Math 30/31 track). Once you have completed all the required courses with a C- grade or better, you need to complete the Change of Major form to switch from "Pre-CSC" to full "CSC" major. After you submit the form to the department for approval, it will be forwarded to Admissions and Records on your behalf.

Please know that a lot of the upper division courses (CSC 133 and above) have a prerequisite that requires full major (ie CSC) status. Be aware that failure to complete the lower division requirements in a timely manner may cause problems during the registration process.

Computer Science Department CHANGE OF MAJOR FORM (Undergraduates Only)

Student Name:	_____	SAC STATE ID #:	_____
Street Address:	_____	Telephone:	_____
City, State, Zip:	_____	CSUS GPA:	_____
Email (mandatory):	_____	Overall GPA:	_____
Current major:	_____	Catalog Year:	_____

Check only one option and sign below:

_____ **#1. Pre-Computer Science** (2.5 CSUS/Overall GPA and completed Math 29)
a student enters the major as "Pre-CSC" until you have completed all the courses listed below

OR

_____ **#2. Computer Science** (2.0 CSUS and overall GPA is necessary, plus completion of the courses below with a C- grade or better)

CSc 15
CSc 20
CSc 28
CSc 35
CSc 60
Math 26A or Math 30
Math 26B or Math 31

- To verify your completion of these courses with a C- or better, attach a printout of your unofficial transcript from "MY SAC STATE" (<https://my.csus.edu/>).
- HIGHLIGHT OR CIRCLE the pertinent courses on the printout.
- For non-articulated courses read the instructions on the reverse side of this document ("Verification of Equivalency for Non-Articulated Courses") and complete each step before leaving this Change of Major form with the Computer Science Department.

Note: Students who are exempt from any course due to catalog rights are still required to take the course if it is a prerequisite to another required course or desired elective.

Student Signature: _____ Date: _____

Department/Program Recommendation. Effective _____

(Semester/Yr)

CURRICULUM ROADMAP AND PREREQUISITES

The department offers curriculum pattern roadmaps to assist students in planning out their semesters to help ensure a timely graduation. When viewing roadmaps and course planning, please take into consideration the following:

- ◆ Are you working to support yourself? The amount of hours studying might be more limited if working 20+ hours/week.
- ◆ How many units is realistic for you to be able to do well?
- ◆ Everyone moves at their own pace, comparing yourself to “how well” classmates seem to do is not fair to yourself.
- ◆ Students should also look at their Academic Requirements page (located in your Student Center) to verify the courses completed are counted correctly towards degree requirements.

All roadmaps are located on the csc website, [Forms](#) page.

YES, you must take prerequisites!

- ◆ The computerized “MY SAC STATE” registration system enforces individual prerequisites (as well as full major status in the case of upper division CSC courses).
- ◆ You may view a full list of prerequisites on the website, Forms page.
- ◆ Pay special attention to prerequisite sequences because they require planning *two to four semesters in advance*.

Please note that prerequisites override catalog rights.

- ◆ When changes are made to pre-requisites there is usually a grace period for current students. After that period even if your catalog rights exempt you from a course, you **must** take it if it is a prerequisite to a course you wish to take.

Computer Science Electives by Topic

You are required to take three Computer Science upper-division elective courses. We offer a variety of topics to supplement the knowledge you will gain in the core requirements; many of them also reflect the special interests of the faculty. Electives are numbered from 140 to 189. In addition, experimental courses are offered under the number 196X (where X is a letter); these can also be used to satisfy this requirement. Currently, electives are offered in the following areas (prerequisites are listed in parenthesis):

♦ **Advanced Algorithms**

CSc 140 Advanced Algorithm Design and Analysis (CSc 130)

♦ **Artificial Intelligence**

CSc 180 Intelligent Systems (CSc 130, CSc 135, Math 31, Stat 50)

♦ **Compilers**

CSc 151 Compiler Construction (CSc 135)

♦ **Computer Architecture**

CSc 142 Advanced Computer Organization (CSc 137)

♦ **Computer Games**

CSc 165 Computer Games Architecture and Implementation (CSc 130, CSc 133, Math 30, Physics 11A)

♦ **Database and Data Mining**

CSc 174 Database Management Systems (CSc 131, CSc 134)

CSc 176 Advanced Database Management Systems (CSc 174)

CSc 177 Data Warehousing and Data Mining (CSc 134, Stat 50)

♦ **Data Communication and Networking**

See 196 courses

♦ **Graphics**

CSc 155 Advanced Computer Graphics (CSc 133)

♦ **Information Security**

CSc 152 Cryptography (CSc 60, CSc 130, Stat 50)

CSc 153 Computer Forensics Principles and Practice (CSc 138)

CSc 154 Computer Systems Attack and Countermeasures (CSc 138)

♦ **Operating Systems**

CSc 159 Operating System Pragmatics (CSc 139)

♦ **Simulation**

CSc 148 Modeling and Experimental Design (Math 31, Stat 50)

♦ **Software Engineering**

CSc 170 Software Requirements and Specification (CSc 131)

CSc 171 Software Engineering Project Management (CSc 131)

CSc 179 Software Testing and Quality Assurance (CSc 131)

Since most of these courses are not offered every semester (a two-year schedule for electives is included in this manual), it is recommended that students plan their programs carefully to ensure that they have the proper prerequisites at the time their chosen electives are offered. Prerequisite sequences are noted on the next page.

Prerequisite Sequences for Computer Science Electives

Note: Math and other non-computer science prerequisites are not listed here.

♦ **Advanced Algorithms**

130 → 140* (requires at least 2 semesters)

♦ **Artificial Intelligence**

35 and 130 → 135 → 180* (requires at least 3 semesters)

♦ **Compilers and Operating Systems**

35 and 130 → 135 → 151* (requires at least 3 semesters)

35 and 130 → 60 and 137 → 139 → 159 (requires 4 semesters)

♦ **Computer Architecture**

35 and 130 → 137 → 142 (requires 3 semesters)

♦ **Database and Data Mining**

130 and 131 → 134 → 174 (requires at least 3 semesters)

130 and 131 → 134 → 174 → 176* (requires at least 4 semesters)

130 → 134 → 177* (requires at least 3 semesters)

♦ **Graphics and Computer Games**

130 and 131 → 133 → 155* (requires at least 3 semesters)

130 → 133 → 165* (requires at least 3 semesters)

♦ **Information Security**

60 and 130 → 152* (requires at least 2 semesters)

60 and 130 → 138 → 153* (requires at least 3 semesters)

60 and 130 → 138 → 154* (requires at least 3 semesters)

♦ **Simulation**

No upper division → 148*

♦ **Software Engineering**

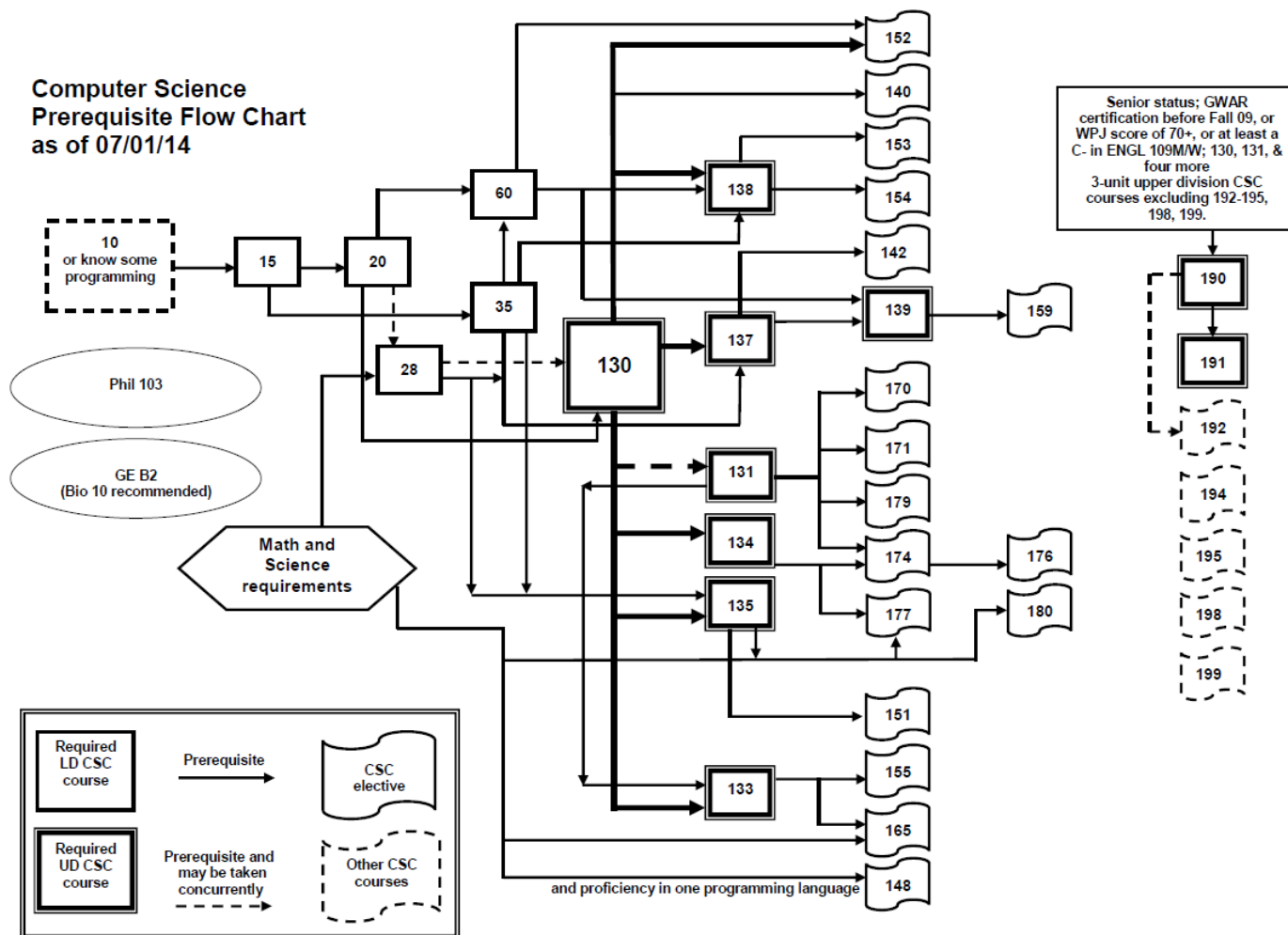
130 and 131 → 170 (requires at least 2 semesters)

130 and 131 → 171* (requires at least 2 semesters)

130 and 131 → 179* (requires at least 2 semesters)

*May not be offered every semester.

Computer Science Prerequisite Flow Chart



Computer Science Elective Schedule

most current version on CSC website

TENTATIVE
2-YEAR SCHEDULE
COMPUTER SCIENCE UNDERGRADUATE ELECTIVES
2020-2022

Fall 2020	Spring 2021	Fall 2021	Spring 2022
142 Adv Computer Organization	140 Adv Algorithm Design & Analysis	142 Adv Computer Organization	140 Adv Algorithm Design & Analysis
148 Modeling and Exp Design	142 Adv Computer Organization	148 Modeling and Exp Design	142 Adv Computer Organization
151 Compiler Construction	148 Modeling and Experimental Design	151 Compiler Construction	152 Cryptography
152 Cryptography	152 Cryptography	152 Cryptography	153 Comp Foren Principles & Practices
153 Comp Foren Principles & Practices	153 Comp Foren Principles & Practices	153 Comp Foren Principles & Practices	154 Comp Sys Attacks & Counter
154 Comp Sys Attacks & Counter	154 Comp Sys Attacks & Counter	154 Comp Sys Attacks & Counter	159 Operating System Pragmatics
155 Adv Computer Graphics	159 Operating System Pragmatics	155 Adv Computer Graphics	165 Comp Game Architecture & Design
159 Operating System Pragmatics	165 Comp Game Architecture & Design	159 Operating System Pragmatics	170 Software Reg & Specifications
196U Parallel Programming with GPUs	177 Data Warehousing & Data Mining	163 Parallel Programming with GPUs	176 Adv Database Management Sys
170 Software Req & Specifications	179 Software Testing & Quality Assur	171 Software Req & Specifications	177 Data Warehousing & Data Mining
174 Database Management Systems	180 Intelligent Systems	174 Database Management Systems	180 Intelligent Systems
180 Intelligent Systems	194 Computer Science Seminar	180 Intelligent Systems	194 Parallel Programming with GPUs
196P Cloud & Mobile Comp Pragmatics	196P Cloud & Mobile Comp Pragmatics	196P Cloud & Mobile Comp Pragmatics	196P Cloud & Mobile Comp Pragmatics

NOTE: This is a planning document and not a guarantee that the schedule above will be followed. All lower and upper division core courses (CSC 15, 20, 28, 35, 60, 130-139), and 190, 191, 192, 195, 198, and 199 are offered every semester. Experimental courses (196's) and new courses will be added as appropriate. Students with a GPA of 3.0 or better may want to consider taking some of the graduate elective courses offered.

Substitution-Waiver / Math Equivalency Forms

The substitution / waiver forms below are to be used for the following reasons:

- **Form A:** Use this form when non-articulated Math courses taken at another University need to be verified with the Math department. You will return the form to the CSC office and it will be placed in your student file.
- **Form B:** Use this form when non-articulated CSC courses taken at another University need to be verified with a CSC advisor. You will return the form to the CSC office and it will be placed in your student file.
- **Form C:** This form is to be used when making any changes to courses submitted on your graduation application. Example: you planned to take CSC 179 during Spring 2016 but decided to take CSC 152 instead. Additionally, after submitting Form A and/or Form B to the CSC office, the dept will complete Form C and forward to Admissions and Records to ensure the information is correctly reflected to your academic requirements.

California State University, Sacramento
Computer Science Department Math Course Equivalency Form

Student Name _____ SAC STATE ID # _____
Email Address _____ Phone _____

THE FOLLOWING CLASSES ARE CONSIDERED EQUIVALENT**
BY THE DEPARTMENT OF MATHEMATICS AND STATISTICS.

Sac State Course	Units	Course / Institution	Sem Units	Qtr Units	Comments
Math 26A or 30	4				
Math 26B or 31	4				
Math 32	4				
Math 45	3				
Math 100	3				
Stat 50	4				
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

**If a course is not exactly equivalent to a Sac State course, please indicate the percentage of overlap and the topic(s) which are missing.

Math Department Approval _____ Date _____
CSC Chair / Assoc. Chair Approval _____ Date _____

Form A

COMPUTER SCIENCE DEPARTMENT
SUBSTITUTION OR WAIVER PETITION FOR BS STUDENTS

BS students: Use this form to establish approval of non-articulated course substitutions or waivers BEFORE you submit a Restricted Registration Request, a Change of Major petition, or a BS Graduation Application to the department. If approved, you may list the substitution(s) on any or all of the above. However, after you have submitted your approved graduation application to Admissions and Records, do not use this form. Use the University's official "Course Substitution and Waiver" form.

SAC STATE ID # _____
Last Name _____ First Name _____
Email Address: _____ Catalogued (year): _____
Check one: ☐ BS Program ☐ 2nd Bachelor ☐ Minor
CSCS course required for major or minor: _____
Substitution (course number/institution): _____
Additional comments by Course Coordinator/Chair/Associate Chair: _____

Computer Science Coordinator	Student
<input type="checkbox"/> The proposed substitute course has at least the same number of semester units and is an adequate substitution for the required course.	If approved, list this course on your paperwork opposite the required course.
<input type="checkbox"/> The substitute course has fewer units or quant system units but otherwise is an adequate substitution for the required course.	
<input type="checkbox"/> An additional course is recommended. The course is: _____	If approved, list both courses on your paperwork opposite the required course.
<input type="checkbox"/> Waiving the difference in units is recommended. The student already has a background that compensates for the units missed and will not be short units needed to graduate or short units needed for the ABET accreditation requirement.	If approved, list the course on your paperwork opposite the required course. Also note "difference in units waived."

APPROVED: _____ Date _____
Computer Science Course Coordinator

APPROVED: _____ Date _____
Computer Science Chair or Associate Chair

Form B

SACRAMENTO STATE
Major/Minor Course Substitutions and Waivers

This form is to be used for updates to major/minor requirements of course(s) is not listed as an option in the University catalog. After department approval, please submit to the Office of the University Registrar, Lagoon Hall 2000. This form should not be used for Special Major/Minors. The Revision to Special Major/Minor form may be obtained from Academic Affairs, Sacramento Hall Room 234 or at www.cscs.edu/officeforms.

PLEASE PRINT IN BLUE OR BLACK INK

Student ID # _____
Name: Last _____ First _____ Middle _____
Daytime Phone: _____ Email: _____
Major(s): _____ Minor(s): _____
Expected Graduation Date: _____ Semester _____ Catalog Year _____

PLEASE NOTE THAT SUBSTITUTIONS AND WAIVERS MAY NOT MEET PREREQUISITES FOR REGISTRATION PURPOSES

Major Course Substitution(s)

Sacramento State Course	Substitute Course	College	Department Chair Signature

Minor Course Substitution(s)

Sacramento State Course	Substitute Course	College	Department Chair Signature

Major/Minor Waiver(s)
Indicate course and/or units being waived _____ Department Chair Approval _____

STUDENT'S SIGNATURE _____ DATE _____
For Office Use Only
REV 10/16/13

Form C

New for the Spring 2019 semester: The CSC Department can now initiate substitutions or waivers online. In order to have this done, you will need to contact the Department and tell them the course(s) you are trying to substitute

Form C

ADVISING AND FACULTY OFFICE HOURS

It is mandatory that you see a Computer Science faculty advisor at least once a year. Holds are placed on all CSC students; failure to do advising will result in being unable to register for courses.

Plan to visit your major advisor well BEFORE you attempt registration for the next semester, and get advising while classes are in session during Fall or Spring semesters. **Faculty members are not available for advising during Finals Week, Winter Intersession, Spring Break or Summer Session.**

(For GE advising, please go to the Academic Advising Center in Lassen Hall.)

- ❖ **Step 1:** Complete the "BS Advising Form" and "BS Course Planning form". The "BS Course Planning form" is a tentative plan for at least the next four semesters. Please fill out these forms prior to meeting with your assigned advisor.

- CONTINUING students should pick up their previous advising form in RVR 3018.

- NEW students (ie – this is your first year @ Sac State) should go to <https://www.csus.edu/college/engineering-computer-science/computer-science/forms.html> and print the "BS Advising Form" and "BS Course Planning Form."

- ❖ **Step 2:** Go see the faculty advisor assigned to you during their office hours.
<http://www.ecs.csus.edu/csc/> → Faculty Information → "Office Hours" link

Who is my advisor???

Example: if your last name is "SMITH" choose your advisor from Muyan-Ozcelik, Salem, Wang or Zhang (Q-Z block). If these advisors are not available, you can see someone else. The important thing to remember is to try and see the same professor (whomever you choose).

- ❖ **Step 3:** After your advisor signs the "BS Advising form", return it to RVR 3018.

ATTENTION:

To remove any confusion, let's clarify the advising policy for the Computer Science Department- According to the University Policy Manual, major advising is mandatory ONCE per academic year (so during Fall or Spring semester). Every semester ****think Fall 2020****, the department places an advising hold on all CSC majors. Then dept staff goes through and removes the hold for everyone who did major advising the previous ****Spring 2020**** semester (because those students technically won't require advising until the following year ****Spring 2021****). The department then sends out a mass generic email to all CSC majors reminding them to do advising. The department encourages advising every semester, but if you know what you plan to take next semester, you are fine.

Please check your *My SacState* first. If you know that you completed major advising last semester, you should not have a hold on your record.

Computer Science Department
STUDENT ADVISING FORM

Planned Graduation Date:

This form is for major advising purposes only. It is based on information supplied by the student and is not an official evaluation.

CSC Upper Division Electives (9 units)				
Course	Units	Sam	Grade	Notes
CSc				
CSc				
CSc				
Other Courses Required for the Major				
Phil 103*	3			
GE B-2 +	3			

[†]Bio 10 is recommended.

[illegible]

*Also satisfies GE requirements:

Math 26A / 30

B4-3 units

Math 26B / 31 B4-3 units

B4-3 units

Phvs 5A/ 11A B1-3 units

B1-3 units

Phil 103 D—3 units: counts as upper division

D-3 units: c

⁵Math & Science: See "Advising for Math & Science requirements" in the Undergraduate Student Handbook for more detailed information.

*One or more electives must be from MATH, STAT, or PHIL (MATH 100 - Linear Algebra - is recommended)

^a The Math / Science course chosen cannot also be used to satisfy the General Education B2 requirement; if CSC 148 is chosen, it cannot also be used as a computer science elective.

²Experiential electives: Choose from CSc 192, 194, 195, 195A-D, 198 or 199. (Note: If CSc 199 was taught as a 3-unit course and not independent study, it may be used as a CSc Upper Division Elective instead.)

COURSE PLANNING FORM FOR NEXT FOUR SEMESTERS

Name: _____ SAC STATE ID: _____ Date: _____

of hours per week you plan to work:# of hours per week you plan to work:# of hours per week you plan to work:# of hours per week you plan to work:

Student: This form is in addition to, and is not to be used in lieu of, the advising form.



GENERAL EDUCATION WORKSHEET

Graduation Requirements <i>Items with * require C- or better</i>	✓
Total Unit Requirements:	
# Total units required for a CSC BS	120 units
# Total major-related units	81 units
# Total units outside of major	39 units
American Institutions:	
# US History	<i>Recommend HIST 17A or 17B</i>
# US Constitution	<i>Recommend POLS 1</i>
# CA State & Local Government	<i>Recommend POLS 1</i>
Race & Ethnicity in American Society (R+E)	[Dropdown]
English Composition:	
# Written Communication*	ENGL 5/5M or 11/11M
# Second Semester Composition*	ENGL 20/20M
Graduation Writing Assessment Requirement (GWAR):	
# Writing Placement for Juniors(WPJ) or ENGL 109W	[Dropdown]
# Writing Intensive (WI) Course*	[Dropdown]
Foreign Language (FL)	EXEMPT ✓

Next Semester Course Option (Units)

1.	[Text Box]	()
2.	[Text Box]	()
3.	[Text Box]	()
4.	[Text Box]	()
5.	[Text Box]	()
6.	[Text Box]	()
Total Units:		0

To Do:

General Education Requirements <i>Items with * require C- or better</i>				
A. Basic Subjects (9 units)	Suggestion or Requirement	Course	Semester	Grade
A1. Oral Communication*	COMS 4 or COMS 5	[Dropdown]	[Dropdown]	
A2. Written Communication*	ENGL 5/5M or ENGL 11/11M	[Dropdown]	[Dropdown]	
A3. Critical Thinking*			[Dropdown]	
B. Physical Universe & Its Life Forms (12 units)				
B1. Physical Science & B3. Lab*	Met by major: PHYS 5A or 11A	[Dropdown]	[Dropdown]	
B2. Life Forms*	<i>Recommend: Bio 10</i>	[Dropdown]	[Dropdown]	
B4. Quantitative Reasoning*	Met by major: MATH 26A or 30	[Dropdown]	[Dropdown]	
B5. Upper Division GE			[Dropdown]	
C. Arts & Humanities (12 units)				
C1. Arts			[Dropdown]	
C2. Humanities			[Dropdown]	
Any Area C Course Arts or Hum			[Dropdown]	
Upper Division GE*	<i>Recommend: Writing Intensive</i>		[Dropdown]	
D. The Individual & Society (12 units)				
U.S. History	<i>Recommend: HIST 17A or 17B</i>	[Dropdown]	[Dropdown]	
U.S. Constit., CA State, & Local Govt	<i>Recommend: POLS 1</i>	[Dropdown]	[Dropdown]	
Any Area D Course			[Dropdown]	
Upper Division GE*	Met by major: PHIL 103		[Dropdown]	
E. Understanding Personal Development (3 units)				
3 units of lower division courses*	First-Year Seminar or one 3-unit lower division Area E course.		[Dropdown]	

REGISTERING FOR CLASSES

Registering for Lecture/Lab Courses

Use "MY SAC STATE" to register (<https://my.csus.edu>). Check your schedule again just before you attend class – there are often last-minute changes to class schedules and the department may not be able to send an email beforehand.

Registration limits (can change each semester):

- ◆ Continued Probation: 14 units
- ◆ On academic contract: Maximum number of units allowed by your counselor
- ◆ Graduating Seniors: 21 units
- ◆ All others, during Priority Registration: **in recent semesters, a "unit cap" has been placed on all students. Check your My Sac State to find out the unit limit.**
- ◆ All others, during Late Registration: **in recent semesters, a "unit cap" has been placed on all students. Check your My Sac State to find out the unit limit.**
- ◆ To register for 21 or more units, obtain an "Excess Units Petition" from the Registrar's website (available for a limited time during late registration period)

If You Cannot Register Yourself Using "MY SAC STATE"...

The department enforces prerequisites. If you took a prerequisite at another institution, the course may not appear on your Sac State record yet and/or the registration system may not recognize that you have had the prerequisite. (There may also be a delay if you had to establish equivalency with a substitution/waiver form.) The department can register you if you submit a **Registration Request Permit**. If your request is approved, and there is still space in the course, the department will enroll you. If the course is full, you will be placed on the waitlist. *(If the course is full AND the wait-list is full, you will likely have to try to add in person with the instructor on the first day of class. Once the semester begins, ALL add requests require instructor signature on the add permit.)*

There could be another reason you are unable to register yourself – "My Sac State" won't let you add an upper division course (CSc 133-191) if you are still a "pre-major." In that case, the department can register you for upper division CSC courses if all requirements (except Change of Major form) are completed or if it is determined that you are likely to complete the requirements to become a full major by the end of the current semester. In addition to submitting the documents listed above, submit a **Change of Major** form. And please do your best to submit everything at the same time.

If you cannot enroll in a Math / Phys / History / Engl course, then you will need to contact the Math / Phys / History / Engl department, respectively. The CSC department can only enroll you in CSC courses.

Adding after Instruction Begins

- ◆ If the class is full, but the instructor has decided to let you in, have him/her sign the department's registration permit, during the first 4 weeks of classes only. (Note: You may need to show the instructor evidence that you have passed the prerequisites.)
- ◆ Deliver the signed form to the department before the census date (the end of the fourth week of instruction). We will do our best to process it quickly, but it is your responsibility to check your schedule and make sure that you have been added to the class by the census date.
- ◆ **Note:** trying to add/drop AFTER the Census date requires the "Add/Drop petition" located on the University Registrar's website, signatures of Instructor, Dept Chair AND College Dean, and written note from student explaining the late request.

REGISTERING FOR CLASSES

Tips and Reminders

Computer Science Department
Registration Request Permit
PLEASE fill out COMPLETELY; missing information will delay processing.

Semester/Year: _____

Name: _____ (last) _____ (first) _____ (m.i.) Sac State ID: _____ must include!! Time Stamp: _____

Phone: _____ Email Address: _____ best email to reach you if there are issues Registration Date / Time: _____

Major: ☐ Pre-CSC ☐ CSC ☐ CpE ☐ EEE ☐ Other: _____ Level: ☐ Undergrad ☐ Graduate

► Prerequisites will be verified - If you have taken any prerequisite course(s) at another institution (in the past 2 semesters), attach a copy of your unofficial transcript from that institution.

(If equivalency to Sac State courses is not listed on www.assist.org, see reverse side of form.)

► The Computer Science dept CANNOT OVERRIDE: registration holds OR time conflicts OR the unit cap.

► "First come, First served" - If the class is full, you will be placed on the waitlist. If the waitlist is full, you will have to try to add (in person) on the first day of classes.

Add for Credit (before the University Census Date)						
Class #	Course # (ex: CSC 130)	Sec. #	# Units	Prerequisite(s) & grade	Instructor Signature (required beginning 1 st day of classes)	Date
	CSC					
	CSC					

This field refers to the 5 digit # that relates to the course

Prereq info can be found on the CSC roadmap or in the course catalog.

Not needed unless classes have started.

Audit (after getting signatures, take this to Admission before the University Census Date)						
Class #	Course #	Sec. #	# Units	Instructor Signature (required beginning 1 st day of classes)	Date	
	CSC					
	CSC					

Drop (before the University Census Date only)						
Class #	Course #	Sec. #	# Units	Instructor Signature (required beginning 1 st day of classes)	Date	
	CSC					
	CSC					

**use this form BEFORE Census date
(the end of the 4th week of classes)**

I authorize the CSC department to Add/Drop the course(s) listed above; it is my responsibility to check MY SAC STATE for class schedule accuracy and inform the CSC office of any errors. I understand that I am responsible for any additional fees associated with these changes.

Student Signature: _____ Date: _____

*****Department Use Only*****

Chair / Coordinator Approval: _____ Date: _____

Comments: _____ ☐ Added by: _____ Date: _____

REGISTERING FOR SUPERVISED COURSES

Paperwork can be found at <https://www.csus.edu/college/engineering-computer-science/computer-science/forms.html>

CSc 195, Fieldwork in Computer Science

This is for someone who already has a job in the field that qualifies for academic credit.

- ◆ Read the guidelines “*Fieldwork (Internship) Guidelines*”.
- ◆ There are **two forms required** for registering in CSC 195. The first is the required campus-wide form, called “Student Learning Agreement.” The second is the CSC Department registration form, titled “Student Internship Registration Form.” Both forms require supervisor signature.
- ◆ If you think you qualify, fill out the forms, get your work supervisor’s signature, and turn it in to the department before the census date (the end of the fourth week of instruction). The department will enroll you.
- ◆ Note that you must turn in a written report and an evaluation by your workplace supervisor at the end of the semester in order to receive credit. See “*Student Internship Report Guidelines*” and “*Supervisor Evaluation of Student Internship Form*”
- ◆ Credit will only be given in the semester you are working. **Example: if you are working during Summer break, you must register for CSC 195; you cannot work during the Summer and get credit during Fall semester.**

CSc 195A-D, Professional Practice (Co-op)

If you do not already have a job that qualifies for fieldwork, and you want to be placed in a “Co-op” internship, please apply with the Career Counselor & Experiential Learning Coordinator in the Academic Advising and Career Center, Lassen Hall 1013. If you are accepted, the Co-op Counselor will contact the department staff directly to request you be enrolled.

CSc 198, Co-curricular Activities in Computer Science

Students will serve in leadership roles in computer science activities, provide tutoring or technical assistance in labs, assist instructors in grading coursework, or assist in other activities related to the subject matter and concerns of the department. Graded: Credit / No Credit.

Contact the department chair for more information.

CSc 199, Special Problems (Independent Study)

Individual projects or directed reading in specified topics in computer science. Note: Open only to students who appear competent to carry on individual work; approval of faculty supervisor and advisor required. May be repeated for credit. Graded: Credit / No Credit.

- ◆ Fill out a “Supervisory Course Petition” and have your faculty sponsor sign it. Deliver it to the department before the census date (the end of the fourth week of instruction). The department will enroll you.

DROPPING CLASSES

Dropping Before the Census Date (the end of the 4th week of class)

- ◆ Drop classes using “MY SAC STATE” (<https://my.csus.edu>) during the dates specified you student center.
- ◆ After online registration has closed, you can drop a CSC course by emailing cscreg@csus.edu and include the required information of your name, student ID number, and **the 5-digit course call number of the class** you are requesting to drop. Please be sure to copy your instructor in this email – in case other students are still trying to add this course.
- ◆ We will do our best to process it quickly, but it is your responsibility to check your schedule and make sure that you have been dropped from the class by the census date.

Late Withdrawal After the Census Date (the end of the 4th week of class)

- ◆ Complete the online form found in [My Sac State](#) (under OnBase forms) or under [Records and Registration Forms](#).
Be sure to READ the guidelines (below) for withdrawing at this point. You must attach a note or it will likely be denied.

Summer Term Policies	Add Policy	Drop Policy	Withdrawal Policy
<p>Drops after the fourth week of the semester (census date) are called withdrawals, and are only granted for serious, compelling reasons. After required approval signatures are obtained, the Add/Drop/Withdraw petition must be submitted to the Registrar's Office after the fourth week.</p> <p>Undergraduate students may withdraw from no more than 18 units in their undergraduate career, unless an exception is granted (any "W" grades received prior to the Fall 2010 semester do not count towards the 18 unit maximum).</p> <p>If you are seeking to withdraw from an individual course(s) after the fourth week of the semester and have reached the University maximum of 18 units of "W" grades allowable, then you must submit this approved Add/Drop/Withdraw petition as a supplement to your <i>Petition for Exception: Withdrawal in Excess of 18 Units</i>.</p>			<p>Withdrawal during the 5th and 6th week of the semester requires the <i>signature of the course instructor and the department chair</i>. Reasons for dropping in during this period include medical, carrying an excessive course load, student's inadequate academic preparation for the course, or the student having significant job or career changes.</p> <p>Withdrawal during the 7th through the 12th week requires the <i>signature of the course instructor, the department chair, and the college dean</i>. Reasons for withdrawal during this period include only medical or work-related reasons clearly beyond the control of the student; a student-initiated job change, carrying an excessive course load or inadequate preparation does not qualify.</p> <p>Withdrawal is allowed after the 12th week of instruction only in exceptional cases, such as in cases of accident or serious illness where the cause is due to circumstances beyond the student's control. Withdrawals approved during the last three weeks of the semester will not count towards the 18 unit maximum; however, a grade of "W" is still recorded on the transcript.</p>

- ◆ Submit the form online AND any necessary documentation attached that will aid your request. It will route to Instructor. I suggest you also email instructor after you submit the form to make them aware of need for approval. After, it will route for dept chair approval.
- ◆ After the 6th week of school (beginning October 9th), IF dept chair approves, then the form will be forwarded to the Dean's Office for the Associate Dean (Dr. Behnam Arad) review. IF the Associate Dean approves, then the form will be forwarded to Registrar's office for processing.

PLEASE take care of this ASAP. The more time passes, the harder it will be to get approval.

Withdrawing From All Courses

- ◆ If you must withdraw from all classes, do not use drop forms.
- ◆ Use the official "Semester Withdrawal Form" which can be accessed via My SacState, specifically the [OnBase Portal](#).

Refunds

- ◆ Refer to the Sacramento State Bursar's Office (<https://www.csus.edu/apply/enrollment-costs-fees/refunds/>) for information.

REPEATING COURSES

INCOMPLETE GRADES AND REPEAT POLICY CHANGES EFFECTIVE FALL 2010.

- ◆ Students may not repeat courses where an "I" grade has been previously assigned unless the "I" grade has lapsed or a grade of "C-" or lower has been assigned
- ◆ Students may not repeat courses where a grade of "C" or higher was previously received unless the course may be taken more than once for credit
- ◆ Students will be prevented from enrolling in a course where the grade previously earned is a "C" or better (or Credit).
- ◆ Students may repeat a maximum of 16 units for grade forgiveness
- ◆ Courses taken prior to Fall 2010 will not count towards the 16 units of grade forgiveness
- ◆ Students may repeat an individual course for grade forgiveness no more than two times without review and written approval by your academic advisor and/or department chair.
- ◆ Students may repeat an additional 12 units for grade average beyond the 16 units of forgiveness

The new Repeat Policy is applicable to all undergraduate students and applies only to courses taken at Sacramento State. Please note that students will be blocked at registration from attempting to enroll in courses where a grade of "I" or "C" or higher has been received.

The Repeat Exception Petition (<http://www.csus.edu/registrar/forms/>) is to be used by students asking for an exception to the new repeat policy which prohibits students from repeating "C" or better grades or repeating a class more than two times.

- ◆ Be mindful of university repeat policy: <https://www.csus.edu/student-life/class-schedules/registration/repeating-courses.html>
- ◆ Students may repeat an individual course for grade forgiveness no more than two times without review and written approval by your academic advisor and/or department chair.
- ◆ Students may repeat no more than a total of 28 units

DELETING, ADDING, OR APPEALING A GRADE

DELETING A GRADE

- ◆ If this is the first semester you have received a “WU” (Unauthorized Withdrawal), you may be able to delete the grade. The “WU” may be assigned in the case where the student has not completed sufficient course assignments or participated in sufficient course activity to make it possible, in the opinion of the instructor, to report satisfactory or unsatisfactory completion of the class by use of a letter grade (A - F).
- ◆ Fill out a “**Petition to Discount First WU Grade(s)**” form found in [My Sac State](#) (under OnBase forms) or under [Records and Registration Forms](#).
- ◆ The University may also grant a deletion of a failing grade if you have documentation of a serious medical condition which interfered with your completion of the course. Fill out an “Academic Standards Committee - Deletion of Grade Petition”, available from Student Service Counter (Lassen Hall, first floor Lobby).

ADDING A GRADE

If you attended class but neglected to register for it, ***and you paid sufficient fees to cover the class***, you may be able to have it added to your record.

- ◆ Fill out an “Academic Standards Committee - Special Consideration Petition,” available from Registrar’s Office website.
- ◆ Obtain the signatures of the instructor of record and the department chair.
- ◆ Follow instructions on the form to submit appropriately.

APPEALING A GRADE

- ◆ The official University student grade appeal process is described on the web at: http://www.csus.edu/umanual/Acad%20Affairs/Grade_Appeal_Policy.htm
- ◆ Read and follow instructions carefully, or you may lose the right to an appeal. Grade appeals must be started within three weeks of the semester following the one in which you received the grade!
- ◆ Be prepared to submit the originals of all of your graded work with your appeal paperwork.

GRADUATION

HOW TO SUBMIT YOUR GRADUATION APPLICATION

Bachelor's graduation applications are due approximately one year before your projected graduation date (October 1st for Spring or Summer graduation, Feb 1st for Fall graduation).

The Computer Science department is part of a group of majors that complete the graduation application online. Please visit the following link for the most up-to-date information: <https://www.csus.edu/student-affairs/centers-programs/student-services-center/forms.html>

Other useful graduation links:

General Commencement information: <https://www.csus.edu/president/commencement/>

HOW TO UPDATE YOUR APPLICATION AFTER FILING

After you have filed your application, submit an official Sacramento State "Major/Minor Course Substitution and Waiver" Form (<http://www.csus.edu/registrar/forms/#eval>) if any of the following occurs:

- ◆ You need to change your electives
- ◆ You want to substitute a course from another institution

AND/OR

- ◆ If you need to change your graduation date, you must complete the "Bachelor's Degree Date Change Form"

Note: After the form has been approved by the Chair or Associate Chair, you must return it to Admissions and Records yourself.

ATTENDING THE COMMENCEMENT CEREMONY

- ◆ Your name will be in the printed program if you file your graduation petition by the publicized deadline.
- ◆ General Commencement information: <https://www.csus.edu/president/commencement>
- ◆ If you wish to have your name read aloud during the ceremony, sign up in the Dean's Office (RVR 2014) at least one week before.
- ◆ Note: You may walk in the Commencement Ceremony even if you have not fulfilled all your requirements to graduate yet.
- ◆ New as of Spring 2019: Commencement ceremonies will now only be held at the end of the Spring semester. If you are graduating in a semester other than Spring, you may still walk in the ceremony. To do so, you will need to submit a Participation Request via the Commencement website, available here: <https://www.csus.edu/president/commencement>

APPENDIX I: Policy on Academic Integrity

Computer Science students are required to adhere to University guidelines for academic integrity. These guidelines are outlined in the *CSUS University Policy Manual on Academic Honesty*, available at <https://www.csus.edu/um anual/student/stu-100.htm>.

Definitions of Academic Dishonesty

Cheating. At Sacramento State, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at Sacramento State includes but is not limited to:

- ❖ Copying, in part or in whole, from another's test or other evaluation instrument.
- ❖ Using crib notes, "cheat sheets," or any other device, including electronic devices not permitted by the instructor as an aid in writing an examination.
- ❖ Submitting work previously graded in another course unless doing so has been approved by the course instructor or by department policy.
- ❖ Submitting work simultaneously presented in more than one course, unless doing so has been approved by the respective course instructors or by the department policies of the respective departments.
- ❖ Altering or interfering with grading or grading instructions.
- ❖ Sitting for an examination by a surrogate, or as a surrogate.
- ❖ Any other act committed by a student in the course of his or her academic work that defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

Plagiarism. Plagiarism, as a form of cheating, is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person's contribution. Regardless of the means of appropriation, incorporation of another's work into one's own requires adequate identification and acknowledgement. Plagiarism is doubly unethical because it deprives the author of rightful credit and gives credit to someone who has not earned it. Acknowledgement is not necessary when the material used is common knowledge. Plagiarism at Sacramento State includes but is not limited to:

- ❖ The act of incorporating into one's own work the ideas, words, sentences, paragraphs, or parts thereof, or the specific substance of another's work without giving appropriate credit thereby representing the product as entirely one's own. Examples include not only word-for-word copying, but also the "mosaic" (i.e., interspersing a few of one's own words while, in essence, copying another's work), the paraphrase (i.e., rewriting another's work while still using the other's fundamental idea or theory); fabrication (i.e., inventing or counterfeiting sources), ghost-writing (i.e., submitting another's work as one's own) and failure to include quotation marks on material that is otherwise acknowledged; and
- ❖ Representing as one's own another's artistic or scholarly works such as musical compositions, computer programs, photographs, paintings, drawing, sculptures, or similar works.

APPENDIX II: IMPORTANT COMPUTER SCIENCE ACCOUNTS



- Every CSUS student should set up a SacLink account with the University. This account will provide you with, among other things, free E-mail and Internet access to “MY SAC STATE” (<https://my.csus.edu>). This can be done via the Internet at: <https://www.saclink.csus.edu/> .
- Are you signed up for the “CSCUNDERGRADLIST”? We will only use it to warn you of advising holds and announce special events and job opportunities.