

ORANGE COAST COLLEGE

TRANSFER CURRICULUM GUIDE COMPUTER SCIENCES

LOWER DIVISION MAJOR REQUIREMENTS FOR TRANSFER

The following courses should be taken at OCC prior to transfer. Courses not offered at OCC will need to be taken after transfer unless otherwise noted. Four-year colleges and universities often make changes in their requirements for majors. The information contained in this guide is based on the most recent information available from the four-year school and does not constitute an official agreement.

Recent updates to this guide can be found on the Transfer Center Website at:

www.occ.cccd.edu/departments/studentsvcs/transferctr

UNIVERSITY OF CALIFORNIA, BERKELEY

BACHELOR OF ARTS IN COMPUTER SCIENCE

UCB	OCC	(10/13:A16-17)
Minimum Admissions Requirements:		
COMPSCI 61A	No Equivalent Course	
COMPSCI 61B	CS 200 & 250	
COMPSCI 61C	No Equivalent Course	
COMPSCI 70	No Equivalent Course	
MATH 1AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 54	MATH 285(or 285H)	
Recommended sequence for computer courses:		
1st term - CS 115 or 140 or 142 or 170 or 270		
2nd term - CS 150		
3rd term - CS 216, 250		
4th term - CS 200		
*MATH 182H is also equivalent to MATH 1AB.		
Notes: Students should complete as many major prep requirements as possible prior to transfer. Completion of IGETC, strength of academic preparation and GPA are the primary selection criteria for admission. To be competitive for admission, it is recommended that students take UC transferable courses in all equivalent mathematics courses, data structures (CS 200 & 250) and java (preferred) or C++. If admitted, transfer students must achieve a 3.30 cumulative GPA in the remaining prerequisite courses (CS 61A and CS 70) taken at UC Berkeley in order to petition for admission to the major.		

UNIVERSITY OF CALIFORNIA, IRVINE

SMART-ICS	(10/14:W12/16)
UCI's Donald Bren School of Information and Computer Sciences has established the SMART-ICS Articulation Program with OCC. SMART-ICS stands for Standardized Major Articulation Requirements to Transfer into Information and Computer Sciences. This program allows OCC students to complete their lower division computer science and mathematics course requirements for the Information and Computer Science major prior to transferring to Irvine.	
Students who complete the SMART-ICS program of study at OCC are prepared to begin their upper division UCI ICS courses immediately after transfer and will not have to take ICS 52, MATH 6B and MATH 67.	
Students must first be admitted to UCI and into the ICS major before they can obtain the subject credit for completing the SMART-ICS program. In order to be SMART-ICS certified, students must complete all of the following Computer Science courses with grades of "C" or better and must pass all Mathematics courses:	
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SMART-ICS**(10/14:W12/16)**

CS 116, 150, 170, 200, 220, 250, 265

MATH 160(or 160H), 180(or 180H)+, 185(or 185H)+, 230 and either 235 or 285(or 285H)

+MATH 182H can be substituted for these courses.

Fall 1 CS 170, MATH 160(or 160H), 180(or 180H)

Spring 1 CS 150, MATH 185

Fall 2 CS 250, 116, MATH 285(or 285H)

Spring 2 CS 200, 220, 265, MATH 230

Note: For additional information visit the SMART-ICS website: <http://csjava.occ.cccd.edu/~gilberts/smart-ics.html>

Certification is done through the office of Articulation at OCC.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE**UCI****OCC****(10/14:A16-17)****In fulfillment of the requirements below, a single course may be used only once.**

MATH 2AB	MATH 180(or 180H) & 185(or 185H)*
I&C SCI 31 & 32 & 33 <u>or</u> 21 & 22	CS 150 & 250 & No Equivalent Course <u>or</u> CS 170 & 200 & 250
I&C SCI 46	CS 200
I&C SCI 51	CS 216
I&C SCI 45C	CS 250
I&C SCI 52	CS 220
I&C SCI 53/53L	No Equivalent Courses
I&C SCI 90	No Equivalent Course
I&C SCI 6N <u>or</u> MATH 3A	MATH 235 <u>or</u> 285(or 285H)
I&C SCI 6D	CS 262 <u>or</u> MATH 230
I&C SCI 6B	CS 257
STAT 67	No Equivalent Course

Plus: Two Category II GE course (except computing/engineering, economics or mathematics) chosen from: ASTR 100(or 100H), 101, 102, 103, BIOL 100(or 100H), 125, 180, 182, 183, 185, 210, 220, 221, 225, 280, 281, 282(or 282H), 283, CHEM 180, 185, GEOL 105(or 105H), 110, 185, MRSC 100(or 100H), 180, PHYS 110, 120 125, 130, 135, 185, 280, 285, PSYC 250

*MATH 182H is also equivalent to MATH 2AB.

Notes: Preference is given to applicants who complete course requirements with a cumulative GPA of 3.0 or better. As a minimum, applicants must complete the following courses: one year of approved college-level math preferably calculus (MATH 180(or 180H) & 185(or 185H) or MATH 182H) or two semester courses equivalent to other major related math courses and one year of UC transferable computer science courses (at least one course must involve concepts such as those found in Java, Python, C++ or other object-oriented or high-level programming language). Intro to Computer Science does not meet this requirement. Additional computer science courses beyond the two required are strongly recommended, particularly those that align with the major of interest. Students should plan to learn Java, Python and C++ by studying on their own or by completing these courses prior to your first quarter at UCI.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING**UCI****OCC****(10/14:A16-17)****In fulfillment of the requirements below, a single course may be used only once.**

MATH 2AB	MATH 180(or 180H) & 185(or 185H)*
CSE 41/I&C SCI 31 & 42/I&C SCI 32 & CSE 43/I&C SCI 33	CS 150 & 250**
PHYSICS 7CD, LC/LD	PHYS 185 & 280
One Additional Approved Course for the major from:	
MATH 2D	MATH 280(or 280H)
MATH 3A	MATH 235 <u>or</u> 285(or 285H)
MATH 3D	MATH 285(or 285H)
I&C SCI 6B	CS 257
I&C SCI 6D	CS 262 <u>or</u> MATH 230
STATS 67	No Equivalent Course

Engineering and Computing topics Courses:

CSE 31/31L	No Equivalent Courses
CSE 45C	CS 250

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UCI	OCC	(10/14:A16-17)
CSE 46	CS 200	
CSE 50	No Equivalent Course	
CSE 70A	ENGR 285	
CSE 90	No Equivalent Course	
IN4MATX 43	CS 220	
*MATH 182H will also satisfy this requirement.		
**CS 131 is equivalent to I&C SCI 31 only and CS 132 is equivalent to I&C SCI 33 only.		
NOTE: Students should complete as many major prep courses as possible with a 3.0 GPA prior to transfer including the following required courses: one year of approved calculus, one year of calculus-based physics with lab (mechanics, electricity, and magnetism), one year of UC transferable computer science involving concepts found in Java, Python, C++ or other object-oriented, high-level programming language (Intro to CS will not meet this requirement) and one additional approved course for the major in math, science or computer science. Additional computer science courses beyond the two required are strongly recommended, particularly those that align with the major of interest. Java, Python and C++ are used in the curriculum, therefore transfer students should learn these languages on their own or by completing courses prior to their first quarter at UCI.		

BACHELOR OF SCIENCE IN COMPUTER GAME SCIENCE

UCI	OCC	(10/14:A16-17)
MATH 2AB	MATH 180(or 180H) & 185(or 185H)*	
I&C SCI 31 & 32 & 33 <u>or</u> 21 & 22 & 46	CS 150 & 250 & No Equivalent Course <u>or</u> CS 170 & 200 & 250	
I&C SCI 51	CS 216	
I&C SCI 45C	CS 250	
I&C SCI 46	CS 200	
I&C SCI 52	CS 220	
I&C SCI 60	No Equivalent Course	
I&C SCI 61	No Equivalent Course	
I&C SCI 62	No Equivalent Course	
I&C SCI 6N <u>or</u> MATH 3A	No Equivalent Course <u>or</u> MATH 235 <u>or</u> 285(or 285H)	
I&C SCI 6D	MATH 230 <u>or</u> CS 262	
I&C SCI 6B	CS 257	
STAT 67	No Equivalent Course	
PHYS 3A	PHYS 130	
FLM&MDA 85A	No Equivalent Course	
*MATH 182H is also equivalent to MATH 2AB.		
NOTE: Students who satisfactorily complete the following course requirements with a cumulative GPA of 3.0 or higher in required courses will be given admission preference: one year of approved college-level math preferably calculus (MATH 180(or 180H) & 185(or 185H) or MATH 182H) or two semester courses equivalent to other major related math courses, one year of UC transferable computer science involving concepts found in Java, Python, C++ or other object-oriented, high level programming language. Additional computer science courses beyond the two required are strongly recommended, particularly those that align with the major of interest. Intro to Computer Science does not meet this requirement. Java, Python and C++ are used in the curriculum, therefore transfer students should learn these languages on their own or by completing courses prior to their first quarter at UCI.		

UNIVERSITY OF CALIFORNIA, LOS ANGELES

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (Henry Samueli School of Engineering & Applied Science)

UCLA	OCC	(10/13:A16-17)
Preparation Courses Required for Admission:		
MATH 31AB	MATH 180(or 180H)+ & <u>either</u> 182H <u>or</u> 185(or 185H)	
MATH 32AB	MATH 280(or 280H)	
MATH 33AB	MATH 285(or 285H)	
PHYS 1ABC, 4AL, 4BL	PHYS 185 & 280 & 285**	
ENGCMP 3	ENGL 100	
Computer Programming	CS 250+	Continued

UCLA	OCC	(10/13:A16-17)
A second course in English composition: (ENGL 101, 101H, 102, 102H, PHIL 150) is also required for admission.		
Strongly Recommended Additional Requirements:		
MATH 61	MATH 230	
COM SCI 31	CS 150	
COM SCI 32	CS 200	
COM SCI 33	CS 216	
COM SCI M51A	No Equivalent Course	
*MATH 182H is also equivalent to MATH 31AB.		
**Entire physics sequence should be completed at OCC.		
+CS 150 will also be accepted toward this requirement.		
General Education Requirements:		
Applicants to specific majors can fulfill the lower division GE requirements by completing the IGETC (partial IGETC is not accepted). Applicants are not required to complete the HSSEAS GE requirement in order to be admitted, although students should complete one course in each of the following areas: arts, humanities, social sciences and life sciences.		
Note: Admission is highly competitive. The most important selection criteria are completion of the required major prep courses and academic performance. Effective fall 2017 a minimum UC transferable cumulative GPA of 3.4 is required for consideration. Prep courses should be completed by the end of the spring term prior to Fall enrollment. All major prep courses must be taken for a letter grade.		

BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING

See Transfer Guide for Engineering - Computer Science.

UNIVERSITY OF CALIFORNIA, RIVERSIDE

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (Bourns College of Engineering)

UCR	OCC	(10/13:A16-17)
Courses required for admission:		
CS 10	CS 140 <u>or</u> 150*	
CS 12	CS 250*	
MATH 9ABC	MATH 180(or 180H) & 185(or 185H)**	
PHYS 40A	PHYS 185	
Also required prior for admission:		
Three courses from:		Three courses from:
CS <u>or</u> MATH 11		MATH 230
CS 14		CS 200
CS 61		No Equivalent Course
MATH 10A		MATH 280(or 280H)
PHYS 40B		PHYS 185 & 285
PHYS 40C		PHYS 280
Strongly recommended prior to transfer (if not taken above):		
CS/MATH 11		MATH 230
CS 14		CS 200
CS 61		No Equivalent Course
MATH 10A		MATH 280(or 280H)
MATH 31		MATH 235 <u>or</u> 285(or 285H)
MATH 46		MATH 285(or 285H)
PHYS 40B		PHYS 185 & 285
PHYS 40C		PHYS 280
BIOL 2 <u>or</u> BIOL 5A/LA		BIOL 100 <u>or</u> 180
Complete at least three courses from the Humanities or Social Sciences (see UCR GE) prior to transfer.		
*Proficiency in C++ is a required prerequisite. Students who complete both CS 140 or 150 and 250, but still lack proficiency in C++ may be required to complete a C++ course prior to enrolling in upper division courses.		
**MATH 182H is also equivalent to MATH 9ABC		
Note: Admission to this major is selective, based on academic preparation and GPA in all transferable coursework, with a		

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minimum GPA of 2.80. This GPA is a baseline for consideration and not a guarantee of admission. Students must attain a GPA of 2.50 in the calculus sequence and at least one sequence in general chemistry, physics, second year calculus or biology. Major prep course completion should be prioritized ahead of completing the IGETC. AP credit is accepted in lieu of some college course work for courses in computer science and math. For more information call (951) 827-3647.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

BACHELOR OF SCIENCE IN COMPUTER SCIENCE: COMPUTER GAME DESIGN

UCSC	OCC	(10/13:A16-17)
CMPS 12A/12L	CS 150* <u>or</u> 170*	
CMPS 12B/12M	CS 200*	
MATH 19A & 19B	MATH 180(or 180H) & 185(or 185H)**	
CMPE 16	MATH 230	
AMS 10 <u>or</u> MATH 21	MATH 235 <u>or</u> 285	
CMPE 12/12L	CS 216	
ARTG 80G	No Equivalent Course	
ARTG 80H	No Equivalent Course	
CMPM 80K	No Equivalent Course	
FILM 80V	No Equivalent Course	
History of Modern Art	Any course focused on the history of modern art after 1900 C.E. will satisfy this requirement.	
*Course will only be accepted if completed with grade of "B" or better.		
**MATH 182H is also equivalent to MATH 19AB		
<p>Note: Admission to this major is selective. IGETC is discouraged for this major. Priority is given to transfers from California Community Colleges who have completed all the lower division classes and have a high GPA. To be reviewed for admission, you must indicate the School of Engineering major as your first choice on your application. The School of Engineering recommends that students take additional courses in film and digital media production, including but not limited to, digital art (Photoshop, Illustrator), digital modeling (3D Studio Max, Maya) and digital film production (Final Cut Pro, Premiere).</p> <p>It is also recommended that fall transfer students complete CMPS 101 at UCSC during the summer session just prior to fall entry. Transfer students must complete all of the Foundation Courses with a GPA of at least 2.8: CS 150 or 170 & 200, MATH 180(or 180H)**, 185(or 185H)**, 230. A student lacking one foundation course may be admitted if they have completed CMPE 12/L. It is highly recommended that students complete this course prior to admission. It must be clear that you are capable of completing the major in a reasonable period of time. For additional information consult the website: https://www.soe.ucsc.edu or call (831) 459-5840.</p>		

BACHELOR OF ARTS IN COMPUTER SCIENCE

UCSC	OCC	(10/13:A16-17)
CMPS 12A/12L	CS 150* <u>or</u> 170*	
CMPS 12B/12M	CS 200+	
MATH 19AB <u>or</u> MATH 11AB	MATH 180(or 180H) & 185(or 185H)**	
CMPE 16	MATH 230	
AMS 10 <u>or</u> MATH 21	MATH 235 <u>or</u> 285	
CMPE 12/12L	CS 216	
*Course will only be accepted if completed with grade of "B" or better.		
**MATH 182H is also equivalent to MATH 19AB		
<p>Note: Admission to this major is selective. IGETC is discouraged for this major. Priority is given to transfers from California Community Colleges who have completed all the lower division classes and have a high GPA. To be reviewed for admission, you must indicate the School of Engineering major as your first choice on your application.</p> <p>Transfer students must complete all of the Foundation Courses with a GPA of at least 2.8: CS 150 or 170 & 200, MATH 180(or 180H)**, 185(or 185H)**, 230. A student lacking one foundation course may be admitted if they have completed CMPE 12/L. It is highly recommended that students complete this course prior to admission. Transfer students who are not familiar with both Java and C may need to take an extra course. For additional information consult the website: https://www.soe.ucsc.edu or call (831) 459-5840.</p>		

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

UCSC	OCC	(10/13:A16-17)
CMPS 12A/12L	CS 150* or 170*	
CMPS 12B/12M	CS 200*	
MATH 19AB	MATH 180(or 180H) & 185(or 185H)**	
CMPE 16	MATH 230	
AMS 10 or MATH 21	MATH 235 or 285	
MATH 23A	MATH 280(or 280H)	
CMPE 12/12L	CS 216	
PHYS 5A/5L or 6A/AL or CHEM 1ABC, 1M/1N	PHYS 185, 280, 285 or 130 & 135*** or CHEM 180 & 185	
*Course will only be accepted if completed with grade of "B" or better.		
**MATH 182H is also equivalent to MATH 19AB		
***Physics courses are articulated in-series only.		
Note: Admission to this major is selective. IGETC is discouraged for this major. Priority is given to transfers from California Community Colleges who have completed all the lower division classes and have a high GPA. To be reviewed for admission, you must indicate the School of Engineering major as your first choice on your application.		
It is also recommended that fall transfer students complete CMPS 101 at UCSC during the summer session just prior to fall entry. Transfer students must complete all of the Foundation Courses with a GPA of at least 2.8: CS 150 or 170 & 200, MATH 180(or 180H)**, 185(or 185H)**, 230. A student lacking one foundation course may be admitted if they have completed CMPE 12/L. It is highly recommended that students complete CS 216 or PHYS 185, 280 & 285 prior to admission. It is highly recommended that students complete this course prior to admission. Transfer students who are not familiar with both Java and C may need to take an extra course. For additional information consult the website: www.soe.ucsc.edu or call (831) 459-5840.		

UNIVERSITY OF CALIFORNIA, SAN DIEGO**BACHELOR OF ARTS IN COMPUTER SCIENCE (College of Engineering)**

UCSD	OCC	(10/13:A16-17)
MATH 20ABC	MATH 180(or 180H)* & 185(or 185H)* & 280(or 280H)	
MATH 18	MATH 235 or 285(or 285H)	
CSE 8AB or 11	No Equivalent Course or CS 170	
CSE 12	CS 200	
CSE 15L	No Equivalent Course	
CSE 20	MATH 230 or CS 262	
CSE 21	No Equivalent Course	
CSE 30	CS 216	
PHYS 2AB or CHEM 6AB or BILD 1 & 2	PHYS 185 & 280 or CHEM 180 & 185 or BIOL 180 & 185	
*MATH 182H is also equivalent to MATH 20AB		
Note: Admission to this major is impacted. Visit http://cse.ucsd.edu for full information. It is advised that students complete the equivalents to the courses above and the highest level computer programming language course prior to transfer. Major prep is required. For details visit: http://admissions.ucsd.edu/MajorPrep		

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

UCSD	OCC	(10/13:A16-17)
MATH 20ABC	MATH 180(or 180H) & 185(or 185H)** & 280(or 280H)	
MATH 18	MATH 235 or 285	
CSE 8AB or 11	No Equivalent Course or CS 170	
CSE 12	CS 200	
CSE 15L	No Equivalent Course	
CSE 20	MATH 230 or CS 262	
CSE 21	No Equivalent Course	
CSE 30	CS 216	
PHYS 2AB or CHEM 6AB or BILD 1 & 2	PHYS 185 & 280 or CHEM 180 & 185 or BIOL 180 & 185	
*MATH 182H is also equivalent to MATH 20AB		

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Note: Admission to this major is impacted. Visit <http://cse.ucsd.edu> for full information. It is advised that students complete the equivalents to the courses above and the highest level computer programming language course prior to transfer. Major prep is required. For details visit: <http://admissions.ucsd.edu/MajorPrep>

BACHELOR OF ARTS IN MATHEMATICS/Computer Science

UCSD	OCC	(11/13:A16-17)
MATH 20AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 20CD	MATH 280(or 280H) & 285(or 285H)	
MATH 20E	No Equivalent Course**	
MATH 18	MATH 235 or 285	
CSE 8B or 11	CS 170 or No Equivalent Course	
CSE 12	CS 200	
CSE 30	CS 216	
*MATH 182H is also equivalent to MATH 20AB.		
**Students who have completed this course equivalent at a non-UC college must pass a "Requirement Fulfillment Exam" to demonstrate their level of comprehension to satisfy this requirement.		
Note: Transfer students are strongly advised to complete as many major prep courses as possible prior to enrolling at UCSD. Major prep is required. For details visit: http://admissions.ucsd.edu/MajorPrep		

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

BACHELOR OF ARTS IN COMPUTER SCIENCE (College of Engineering)

UCSB	OCC	(10/13:A16-17)
Required base preparation courses:		
MATH 3AB	MATH 180(or 180H) & 185 (or 185H)*	
MATH 4AB	MATH 285(or 285H)	
PHYS 1 & 2, 3/3L	PHYS 185, 280 & 285	
CMPSC 16	CS 150	
CMPSC 24	CS 200	
CMPSC 40	MATH 230	
Strongly recommended advanced preparation courses:		
CMPSC 32	CS 250	
CMPSC 64	CS 216	
MATH 6A	MATH 280(or 280H)	
Other major prep courses:		
CMPSC 48	No Equivalent Course	
CMPSC 56	No Equivalent Course	
PSTAT 120A	No Equivalent Course	
*MATH 182H is also equivalent to MATH 3AB.		
Suggested sequence for computer courses needed to prepare for this major:		
1 st term	CS 170	
2 nd term	CS 160	
3 rd term	CS 216, 250	
4 th term	CS 200	
Note: Applicants to the Computer Science major who complete the equivalent of all the REQUIRED UCSB major preparation courses and as many of the STRONGLY RECOMMENDED courses as possible with a major GPA of 3.6 or higher are the most competitive for admission. Applicants without all of the REQUIRED courses will be reviewed for admission, but will have less competitive applications. It is strongly advised to complete as many major prep courses as possible prior to transfer. Students should focus on completing major prep courses and if time permits work on general education courses.		

CALIFORNIA STATE UNIVERSITY, LONG BEACH

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

CSULB	OCC	(10/14:A16-17)
CECS 100	No Equivalent Course	
CECS 105	No Equivalent Course	
CECS 174	CS 170	
CECS 225	No Equivalent Course	
CECS 228	MATH 230 <u>or</u> CS 262	
CECS 229	No Equivalent Course	
CECS 274	CS 200 <u>or</u> 132	
CECS 277	CS 272	
CECS 282	No Equivalent Course	
ENGR 101 & 102	No Equivalent Courses**	
MATH 122	MATH 180(or 180H)*	
MATH 123	MATH 185(or 185H)*	
A two semester science sequence selected from (12 units): (A grade of "C" or better is required)		
CHEM 111AB	CHEM 180 & 185	
PHYS 151 & 152	PHYS 185 & 280	
EE 210 & 210L	No Equivalent Courses	
Remaining units for above 12 unit requirement should be taken from: BIOL 100(or 100H), 221, 225 <u>or</u> MRSC 180/180L.		
*MATH 182H is equivalent to MATH 122 & 123		
**This requirement can be waived by taking 3 units of CSU GE Area E.		
Note: This major is impacted. See CSULB catalog for supplemental major specific admission criteria. Transfer students must complete 60 units or more and the CSU GE requirements in Written and Oral Communication, Critical Thinking and Mathematics/Quantitative Reasoning with a grade of "C" or better by the end of the prior spring term for fall admission or by the end of the prior summer for spring admission. Critical thinking may be waived for Engineering students as this is integrated throughout the engineering baccalaureate programs. Students are encouraged to take as many of these courses prior to transfer as possible. A minimum GPA of 2.5 and completion of lower division prep courses with grade of "C" or better is required. Major specific admission details can be found at: http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html		

CALIFORNIA STATE UNIVERSITY, FULLERTON

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Options: Multimedia & Digital Game Technologies, Internet & Enterprise Computing Technologies, Software Engineering, Scientific Computing, and Customized

CSUF	OCC	(11/13:A15-16)
CPSC 120	CS 150*	
CPSC 121	CS 250* <u>or</u> 122*	
CPSC 131	CS 200* <u>or</u> 132*	
CPSC 223H <u>or</u> 223J <u>or</u> 223N	CS 142* <u>or</u> 170* <u>or</u> 140*	
CPSC 240	CS 216* or 242*	
CPSC 254	No Equivalent Course*	
MATH 150AB	MATH 180(or 180H) & 185(or 185H)	
MATH 270A	MATH 230 <u>or</u> CS 262	
MATH 270B	MATH 235	
Science/Mathematic Electives		
12 units from:	12 units from:	
BIOL 101/101L	BIOL 100	
BIOL 172	BIOL 180	
MATH 250A	MATH 280(or 280H)	
MATH 250B	MATH 285(or 285H)	
One sequence from:	One sequence from:	Continued

CSUF	OCC	(11/13:A15-16)
PHYS 225/225L, 226/226L	PHYS 185 & 280	
CHEM 120A & 125	CHEM 180 & 185	
GEOL 101/101L & 201/201L	GEOL 105(or 105H) & 105L(or 105M) & 185/185L	
For Scientific Computing** add:		
MATH 250A	MATH 280(or 280H)	
MATH 250B	MATH 285(or 285H)	
*Students may take the Computer Science Placement Exam to waive one or more of these courses.		
** MATH 250AB cannot be counted toward both the Scientific Computing track and the Science/Mathematics electives.		
Note: All majors must select an elective track. A maximum of 6 units with a grade of "D" can count towards elective track courses in mathematics and science courses only. A "C" average and a grade of "C" or better is required in all courses applied to the major.		

CAL POLY, POMONA

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

CPP	OCC	(10/14:A16-17)
Required Core Courses:		
CS 130	MATH 230 or CS 262	
CS 140	No Equivalent Course	
CS 141	No Equivalent Course	
CS 210	No Equivalent Course	
CS 240	CS 200 or 132	
CS 241	No Equivalent Course	
CS 245	No Equivalent Course	
CS 256	CS 250	
CS 260	No Equivalent Course	
CS 264	No Equivalent Course	
MAT 216	MATH 285(or 285H)	
Required Support Courses:		
PHYS 131/L, 132/L, 133/L	PHYS 185, 280, 285*	
MAT 114, 115, 116	MATH 180(or 180H) & 185(or 185H)**	
MAT 208	MATH 235	
MAT 214 & 215	MATH 280(or 280H)	
BIO 110/111L	BIOL 100	
*PHYS 130 & 135 & 285 also satisfies this requirement.		
**MATH 182H also satisfies this requirement.		
Note: This major is impacted. A supplementary admission process is required by the department.		

SAN DIEGO STATE UNIVERSITY

BACHELOR OF ARTS/SCIENCE IN BIOLOGY

SDSU	OCC	(10/13:A16-17)
CS 107	CS 170	
CS 108	CS 200	
CS 237	No Equivalent Course	
MATH 150 & 151	MATH 180(or 180H) & 185(or 185H)*	
MATH 245	No Equivalent Course	
STAT 250	MATH 160	
MATH 254	MATH 235	
One sequence from:	One sequence from:	
PHYS 195/195L, 196/196L	PHYS 185(or 185H) & 280	
CHEM 200 & 201	CHEM 180 & 185	
BIOL 203/203L, 204/204L	BIOL 180(or 180H) & 182/182L & 183/183L	Continued

*MATH 182H is also equivalent to MATH 150 & 151.

Note: This major is impacted. For additional information regarding admission to specific majors:

https://sunspot.sdsu.edu/pubred/!tap.disp?p_action=list_majors

CAL POLY, SAN LUIS OBISPO

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (College of Engineering)

CPSLO	OCC	(10/14:A16-17)
Major Courses:		
CSC 101	CS 150 <u>or</u> 170 <u>or</u> 250	
CSC 102 <u>or</u> 108	No Equivalent Courses	
CPE 101, 102 & 103	No Equivalent Courses	
CSC 123	No Equivalent Course	
CSC 225	No Equivalent Course	
Support Courses:		
CHEM 124, 125, 126 <u>or</u> PHYS 141, 132, 133	CHEM 180, No Equivalent Course, No Equivalent Course <u>or</u> PHYS 185, 285, 280	
MATH 141 & 142	MATH 180(or 180H) & 185(or 185H)*	
MATH 143	MATH 185(or 185H)	
MATH 206 <u>or</u> 224	MATH 235 <u>or</u> 285(or 285H)	
ENGL 149	ENGL 105**	
Life Science elective	BIOL 100 <u>or</u> 183/183L <u>or</u> 210	
Math elective	MATH 280(or 280H)	
Science elective	One Science elective course from: BIOL 100+, 183/183L+, 210+, CHEM 180+, PHYS 185+	
*MATH 182H is also equivalent to MATH 141 & 142.		
**Credit only granted when approved GE A3 course is passed.		
+If not already used above		
Note: Major specific selection criteria for transfer students can be found at:		
http://admissions.calpoly.edu/applicants/transfer/criteria.html		

CALIFORNIA STATE UNIVERSITY, SAN MARCOS

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Option: Computer Information Systems

CSUSM	OCC	(10/13:A16-17)
CS 111	No Equivalent Course	
CS 211	No Equivalent Course	
CS 231	No Equivalent Course	
MATH 160	MATH 180(or 180H)	
MATH 162	MATH 185(or 185H)	
MATH 242	No Equivalent Course	
MATH 264	MATH 235	
MATH 270	No Equivalent Course	
PHYS 201	PHYS 185	
PHYS 202	No Equivalent Course	
For Computer Information Systems add:		
ECON 201	ECON 170	
ECON 202	ECON 175	
ACCT 201	ACCT 101	
ACCT 202	ACCT 102	
Note: All courses for the major must be completed with a grade of "C" or better.		

CHAPMAN UNIVERSITY (Orange)

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Options: Software Engineering, Games Development

Chapman	OCC	(1/08:A09-10)
MATH 110 & 111	MATH 180(or 180H) & 185(or 185H)*	
MATH 210	MATH 280(or 280H)	
MATH 211	MATH 235	
MATH 250	MATH 230	
CPSC 230	Under Review	
CPSC 231	Under Review	
CPSC 236	Under Review	
CPSC 250	Under Review	
*MATH 182H is also equivalent to MATH 110 & 111.		
Recommended sequence for computer courses needed to prepare for this major:		
1 st term	CS 115 <u>or</u> 140 <u>or</u> 142 <u>or</u> 170 <u>or</u> 270	
2 nd term	CS 150	
3 rd term	CS 116, 250	
4 th term	CS 200	

UNIVERSITY OF SOUTHERN CALIFORNIA

Note: Students may fulfill four of the six required GE requirements with transfer courses taken before starting USC (see USC GE requirements). Credit for courses is not granted if (1) the course is taken before high school graduation, (2) the grade is lower than C-, (3) is a lab science or foreign language course and is not taken in a traditional classroom setting, (4) is offered through "study abroad", (5) repeats credit from another college course or from an AP or IB exam.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

USC	OCC	(10/13:A16-17)
WRIT 130	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	One course from: ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
MATH 125 & 126	MATH 180(or 180H) & 185(or 185H or 182H**)+	
MATH 226	MATH 280(or 280H)	
BISC 120 & 220	BIOL 180 & 182/182L & 183/183L <u>or</u> 180 & 185	
CHEM 105AB	CHEM 180 & 185	
PHYS 151	PHYS 130 <u>or</u> 185(or 185H) & 285	
PHYS 152	PHYS 185(or 185H) & 280	
*ENGL 100 is a prerequisite to these courses.		
**MATH 182H is equivalent to MATH 126		
+Subject credit for MATH 180 & 185 can be earned by successful completion of MATH 280(or 280H)		

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (Games)

USC	OCC	(10/13:A16-17)
WRIT 130	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	One course from: ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
MATH 125 & 126	MATH 180(or 180H) & 185(or 185H or 182H**)+	
PHYS 151	PHYS 130 <u>or</u> 185(or 185H) & 285	Continued

*ENGL 100 is a prerequisite to these courses.

**MATH 182H is equivalent to MATH 126

+Subject credit for MATH 180 can be earned by successful completion of MATH 185(or 185H)

ADDITIONAL AGREEMENTS ARE AVAILABLE ON THE INTERNET FOR THE FOLLOWING SCHOOLS AT:

www.assist.org

<i>Campus</i>	<i>Campus</i>
UC Davis	UC Santa Cruz
CSU Bakersfield	CSU Channel Islands
CSU Chico	CSU Dominguez Hills
CSU East Bay	CSU Fresno
Humboldt State University	CSU Los Angeles
CSU Monterey Bay	CSU Sacramento
CSU San Bernardino	San Jose State University
CSU Stanislaus	