BS COMPUTER SCIENCE

2019-2020 *updated 04.04.19* **Units Required 180-181**

NOTE: This document can be used as a compact display of courses and other curricular requirements at the time of publication of the 2019-2020 catalog. The Degree Progress Report must be used to track students' progress in all degree requirements, throughout their Cal Poly

Note: No major, support, or concentration courses may be selected as credit/no credit.

MAJOR COURSES (88)	Units
CSC/CPE 101 Fund Computer Science I	4
CSC/CPE 108 *or* CSC/CPE 202	4
CSC/CPE 203 Proj-Base Obj-Orient Prgrm & Design	4
CSC/CPE 123 Introduction to Computing [1]	4
CSC 225 Intro to Computer Organization	4
CSC 300 Professional Responsibilities	4
CSC 307 Intro to Software Engineering *or*	4 *or*
CSC 308 & CSC 309 Software Engineering II [2]	4, 4
CPE 315 Computer Architecture	4
CSC 348 Discrete Structures	4
CSC 349 Design and Analysis of Algorithms	4
CSC/CPE 357 Systems Programming	4
CSC 430 Programming Languages	4
CSC/CPE 431 Complier Construction	4
CSC 445 Theory of Computation I	4
CSC/CPE 453 Introduction to Operating Systems	4
CSC 491 & CSC 492 *or*	4
CSC 497 & CSC 498	
Concentration or Technical Electives	20/24
Select concentration, or select from the lists in	
technical electives guidelines on reverse [3,4,7]	

SUPPORT COURSES (52-53)

Life Science Support Elective	4-5
Select from the following: BMED 213 *and* BIO 213;	
BIO 111, 161; BOT 121; MCRO 221, 224 (B2) [5]	
ENGL 149 Technical Writing for Engineers (A3) [5]	4
MATH 141 Calculus I (B1) [5]	4
MATH 142 Calculus II (B1) [5]	4
MATH 143 Calculus III	4
MATH 206 or 244	4
STAT 312 Statistical Methods for Engineers (B6) [5]	4
Upper-division Electives	4
Select from any upper division	
Mathematics/Statistics Electives	4
Select from: MATH 241, 248, 306, 335, 336, 437, 470; STAT 313, 323, 324, 330, 331, 334, 416, 418, 419, 434	

Additional Science Elective (Additional Area B) [5,6]	4-5
Select from: BIO 111, 161; BOT 121; CHEM 124; MCRO 221, 224; PHYS 141	
Physical Science Electives (B3/B4) (Additional Area B) [5]	12
CHEM 124, 125, 126 *or*	
PHYS 141, 132, 133	

GENERAL EDUCATION (GE)   **40**

72 units required, *32 of which are in Support*

Refer to current schedule or http://www.ge.calpoly.edu to choose GE courses. You will not receive credit for courses not on the approved lists.

Minimum of 8 units required at the 300 level.

Area A Communication   **8**
A1 Expository Writing ……...……....…………...……….4
A2 Oral Communication …………………………………4
A3 Reasoning, Argu & Writing (*4 units in Support*)[5]

Area B Math, Sci., and Quant. Reason (no add'l units req'd)
28 units are listed in Support [5]

Area C Arts and Humanities   **16**
C1 Literature ………………..………………………………4
C2 Philosophy ………….……………………...………….4
C3 Fine/Performing Arts …………….……..……………4
C4 Upper-division elective...……………..…………….4

Area D Society and the Individual   **12**
D1 The American Exp (40404) …………………………4
D2 Political Economy ………..……………………….4
D3 Comp Social Institutions ……………………………4

Area E Lifelong Learning and Self-Development   **4**
(formerly Area D4)

FREE ELECTIVES ……………………………………. **0**

[1] An additional 4 units of CSC/CPE technical electives may be substituted, although new students are strongly encouraged to take CSC/CPE 123.

[2] CSC 309 counts as technical elective. Students in the Interactive Entertainment Concentration are advised to take CSC 307 instead of CSC 308 & 309.

[3] Consultation with advisor is recommended prior to selecting technical electives or approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

[4] An additional 4 units of CPE/CSC technical electives is needed if CSC 123 is not taken.

[5] Required in Support; also satisfies GE.

[6] No double counting is allowed between Additional Science Support Elective and Life Science Support Elective or Physical Science Support Elective.

[7] Any course selected to satisfy this requirement may not be used to satisfy another Major or Support course requirement. No double counting allowed between Major and Support courses.

OTHER DEGREE REQUIREMENTS:
- **Cal Poly, Higher Ed, and Major GPA must all be at least 2.00**
- **For students admitted Fall 2016 and after, a grade of C- or higher is required in GE A1, A2, A3, and one GE B1 course**

All students must complete:
- **United States Cultural Pluralism Requirement**
- **Graduation Writing Requirement**
- **60 units Upper Division (any 300-400 level classes)**
- **Upper Division units in the Major: 27**
- **Residency Requirements: See Degree Progress Report for details**

TECHNICAL ELECTIVES

Courses used to satisfy any other major, support, or general education requirement are not allowed to count toward Technical Elective requirement. Credit/No Credit grading is not allowed.
Select Technical Electives from the following:
CSC 301, 305, 309, 313, 321, 323, 325, 344, 365, 366, 369, 371, 377, 378, 400, 402, 405, 406, 409, 410, 422, 424, 429, 435, 436, 437, 448, 466, 468, 473, 474, 477, 478, 480, 481, 482, 483, 484, 486, 487, 489, 490, 496, 508, 509, 521, 530, 540, 550, 560, 566, 570, 572, 580, 581, 582;
CSC/CPE 454, 458, 471, 476, 515, 564, 569;
CPE 400, 416, 419, 428, 464, 465, 482, 485, 488; DATA 301

Note: The following restrictions must be satisfied.
4 units must be satisfied by a course that has as a prerequisite either
1) An upper-division course required by the major (excluding CSC 357 & 348) *or*
2) Another technical elective.
Select from the following:
CSC 325, 366, 402, 405, 406, 409, 410, 422, 424, 429, 435, 437, 448, 466, 468, 473, 474, 477, 478, 481, 482, 483, 484, 486, 487, 489, 508, 509, 521, 530, 540, 550, 560, 566, 572, 580, 581, 582;
CSC/CPE 454, 476, 515, 564;
CPE 416, 465
Up to 4 units may be taken from CSC 400, CPE 400 (maximum 2 units), or CSC 490.

Up to 4 units may be taken from approved external electives listed below:
AERO 450;
ART 384;
BUS 310;
CHEM 216, 217, 218, 312;
ECON 339;
EE 201 & 251, 314, 424; EE/CPE 336;
ENVE 542;
IME 301, 314, 315, 356;
MATH 241, 242, 248, 304, 341, 350, 412;
ME 211, 212, 405;
PHIL 412, 422;
PSY 329, 333, 357;
STAT 313, 323, 324, 330, 331, 334, 416, 418, 419, 434

CONCENTRATION

Interactive Entertainment (24)

CSC 371 Game Design	4
CSC 378 Interactive Entertainment Engineering	4
CSC/CPE 471 Introduction to Computer Graphics	4
CSC/CPE 476 Real-Time 3D Computer Graphics Software	4
CSC 480 Artificial Intelligence	4
Select from the following CSC 377, 473, 474, 478, 484, 572, 580;	4