Degree: Computer Science, B.S. 21-22				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester (FALL)				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 130	Calculus I	One from the following: Satisfactory score of 78 or higher on Mathematics Placement Exam, MATH 120 or MATH 125 (either course with grade C- or better).	4
D1				3
Elective				1
			Total:	15
Second Semester (SPRING)				
E	GS 101B	Foundations of Success II		1
A2	ENGL 102			3
C1				3
LD Major	CS 101	Computer Science I	Mathematics/QR Placement Category I or II, or successful completion of GE area B4.	4
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	3
Elective				1
			Total:	15
Third Semester (FALL)				
E				1
B1/B3	PHYS 135	Physics for Engineers I		4
LD Major	CS 211	Discrete Structures	MATH 130 with grade C- or better.	3
LD Major	CS 201	Computer Science II	CS 101 with grade C- or better.	4
A3	PHIL 100	Workshop in Critical Thinking		3
			Total:	15
Fourth Semester (SPRING)				
LD Major/D2	CS 230	Computing and Social Responsibility		3
Second Composition	ENGL 200 or PHYS 230			3
Code 1				3
LD Major	CS 221	Assembly Language and Computer Architecture	CS 100 or CS 101, both with grade C- or better.	3
LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	15
Fifth Semester (FALL)				
UD-B/Overlay				3
F		Ethnic Studies		3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	CS 211 and CS 221, both with grade C- or better.	3
			Total:	15
Sixth Semester (SPRING)				
C2				3
Code 2				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 441	Computer Networks	CS 301	3
UD Major	CS 413	Analysis of Algorithms	CS/MATH 211 and CS 301	3
			Total:	15
Seventh Semester (FALL)				
UD-D/Overlay				3
UD Major	CS 401	Software Engineering	CS 301 with grade C- or better.	3
UD Major	CS 421	Operating Systems	CS 301 with grade C- or better.	3
UD Major	CS 411	Automata and Complexity	CS 211 and MATH 225, both with grade C- or better.	3
UD Major	CS Breadth			3
			Total:	15
Eighth Semester (SPRING)				
Add'l C1 or C2*				3
UD-C/Overlay				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				120

CSUEB General Breadth and Graduation Requirement Checklist
Area A (9 units): Communication in the English Language & Critical Thinking (Must earn passing grade of C-/CR or better)
☐ A1. COMM 100 or 104, MLL 111
☐ A2. ENGL 101, 102, or 104
☐ A3. PHIL 100
Area B (9 units) : Scientific Inquiry & Quantitative Reasoning
☐ B1. Physical Science
☐ B2. Life Science
☐ B3. Laboratory Activity
☐ B4. Quantitative Reasoning (Must earn passing grade of C-/CR or better.)
Area C (9 units): Arts & Humanities - Minimum of three different disciplines as designated by course prefix (e.g., ART, THEA, MUS)
☐ C1. Arts
☐ C2. Humanities
☐ *Additional Lower-division Area C Course in Arts (C1) or Humanities (C2)
Area D (6 units) : Social Sciences - Minimum of three different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)
☐ D1.
☐ D2.
Area E (3 units) : Lifelong Learning and Self-Development
☐ E.
Area F (3 units): Ethnic Studies
☐ F.
Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.
☐ Second Composition
covering three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S.
☐ Code 1.
☐ Code 2.
of A1, A2, A3, and B4 with a C- (CR)
☐ UD-B. Upper-division Science Inquiry and Quantitative Reasoning
☐ UD-C.Upper-division Arts OR Humanities
☐ UD-D. Upper-division Social Sciences
Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major
☐ Diversity (Div)
☐ Social Justice (SJ)
☐ Sustainability (S)
Computer Science Breadth Coursework
Students must complete two (2) courses of the following for 6 units:
CS 351 - Website Development Units: 3
CS 431 - Database Architecture Units: 3
CS 453 - Mobile Programming Units: 3
CS 455 - Computer Graphics Units: 3
CS 461 - Artificial Intelligence Units: 3
CS 471 - Security and Information Assurance Units: 3
Elective Courses
Students must take two (2) courses with the CS prefix numbered 300 or above for a minimum of 6 units. Courses must not be the same as those already used. Note: 1-3 units of CS 498 Cooperative Education and/or 1-3 units of CS 490 Independent Study may be used to fulfill the Electives category.

Degree: Computer Science, B.S.				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 130	Calculus I	One from the following: Satisfactory score of 78 or higher on Mathematics Placement Exam, MATH 120 or MATH 125 (either course with grade C- or	4
	ENGL 100 or 103			3
	ENGL 109			1
			Total:	15
Second Semester				
E	GS 101B	Foundations of Success II		1
A2	ENGL 101 or 103			3
	ENGL 109			1
C1				3
LD Major	CS 101	Computer Science I	Mathematics/QR Placement Category I or II, or successful completion of GE area B4.	4
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	3
			Total:	15
Third Semester				
E				1
B1/B3	PHYS 135	Physics for Engineers I		4
LD Major	CS 211	Discrete Structures	or better.	3
LD Major	CS 201	Computer Science II	better.	4

A3	PHIL 100	Workshop in Critical Thinking		3
			Total:	15
Fourth Semester				
LD Major/D1	CS 230	Computing and Social Responsibility		3
Writing II/Second Com	ENGL 200 or PHYS 230			3
Code 1/D2				3
LD Major	CS 221	Architecture	with grade C- or better.	3
LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	15
Fifth Semester				
UD-B				3
F				3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	CS 211 and CS 221, both with grade C- or better.	3
			Total:	15
Sixth Semester				
C2				3
Code 2				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 413	Analysis of Algorithms	CS/MATH 211 and CS 301	3
UD Major	CS 441	Computer Networks	CS 301	3
			Total:	15
Seventh Semester				
UD-D/Overlay				3
UD Major	CS 401	Software Engineering	better.	3
UD Major	CS 421	Operating Systems	better.	3
UD Major	CS 411	Automata and Complexity	both with grade C- or	3
UD Major	CS Breadth			3
			Total:	15

Eighth Semester				
Add'l C1 or C2*				3
UD-C/Overlay				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				120

Degree: Computer Science, B.S.				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 115	College Algebra		3
B4 Support	MATH 15			1
D1				3
			Total:	14
Second Semester				
E	GS 101B	Foundations of Success II		1
A2	ENGL 102			3
C1				3
	MATH 120	Precalculus		3
LD Major	CS 101	Computer Science I	Mathematics/QR Placement Category I or II, or successful completion of GE area B4.	4
F		Ethnic Studies		3
			Total:	17
Third Semester				
E				1

LD Major	MATH 130	Calculus I	One from the following: Satisfactory score of 78 or higher on Mathematics Placement Exam, MATH 120 or MATH 125 (either course with grade C- or better).	4
B1/B3	PHYS 135	Physics for Engineers I		4
LD Major	CS 201	Computer Science II	better.	4
A3	PHIL 100	Workshop in Critical Thinking		3
			Total:	16
Fourth Semester				
LD Major	CS 211	Discrete Structures	or better.	3
LD Major	MATH 131	Calculus II	or better.	3
LD Major/D2	CS 230	Computing and Social Responsibility		3
Second Comp	ENGL 200 or PHYS 230			3
LD Major	CS 221	Architecture	with grade C- or better.	3
LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	18
Fifth Semester				
UD-B/Overlay				3
Code 1				3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	with grade C- or better.	3
			Total:	15
Sixth Semester				
C2				3
Code 2/D3				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 413	Analysis of Algorithms	301	3

UD Major	CS 441	Computer Networks	CS 301	3
			Total:	15
Seventh Semester				
UD-D/Overlay				3
UD Major	CS 401	Software Engineering	better.	3
UD Major	CS 421	Operating Systems	better.	3
UD Major	CS 411	Automata and Complexity	both with grade C- or	3
UD Major	CS Breadth			3
			Total:	15
Eighth Semester				
UD-C/Overlay				3
Add'l C1 or C2*				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				125

Degree: Computer Science, B.S.				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 115	College Algebra		3
B4 Support	MATH 15			1
	ENGL 100 or 103			3
	ENGL 109			1
			Total:	15
Second Semester				
E	GS 101B	Foundations of Success II		1
A2	ENGL 101 or 104			3
	ENGL 109			1
C1				3
	MATH 120	Precalculus		3
LD Major	CS 101	Computer Science I	Mathematics/QR Placement Category I or II, or successful completion of GE area B4.	4
F				3
			Total:	18
Third Semester				
E				1
LD Major	MATH 130	Calculus I	Satisfactory score of 78	4
B1/B3	PHYS 135	Physics for Engineers I		4

LD Major	CS 201	Computer Science II	better.	4
A3	PHIL 100	Workshop in Critical Thinking		3
			Total:	16
Fourth Semester				
LD Major	CS 211	Discrete Structures	or better.	3
LD Major	MATH 131	Calculus II	or better.	3
LD Major/D1	CS 230	Computing and Social Responsibility		3
Writing II/Second Com	ENGL 200 or PHYS 230			3
LD Major	CS 221	Architecture	with grade C- or better.	3
LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	18
Fifth Semester				
UD-B/Overlay				3
Code 1/D2				3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	with grade C- or better.	3
			Total:	15
Sixth Semester				
C2				3
Code 2/D3				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 413	Analysis of Algorithms	301	3
UD Major	CS 441	Computer Networks	CS 301	3
			Total:	15
Seventh Semester				
UD-D/Overlay				3
UD Major	CS 401	Software Engineering	better.	3
UD Major	CS 421	Operating Systems	better.	3
UD Major	CS 411	Automata and Complexity	both with grade C- or	3
UD Major	CS Breadth			3
			Total:	15
Eighth Semester				

UD-C/Overlay				3
Add'l C1 or C2*				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				127

Degree: Computer Science, B.S.				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 125	Precalculus with Algebra		5
D1				3
			Total:	15
Second Semester				
E	GS 101B	Foundations of Success II		1
A2	ENGL 102	English Composition		3
C1				3
LD Major	MATH 130	Calculus I	One from the following:	4
LD Major	CS 101	Computer Science I	Mathematics/QR	4
			Total:	15
Third Semester				
E				1
B1/B3	PHYS 135	Physics for Engineers I		4
LD Major	MATH 131	Calculus II	MATH 130 with grade C-	3
LD Major	CS 201	Computer Science II	better.	4
A3	PHIL 100	Workshop in Critical Thinking		3
F				3
			Total:	18
Fourth Semester				
LD Major	CS 211	Discrete Structures	or better.	3
LD Major/D2	CS 230	Computing and Social Responsibility		3
Writing II/Second Com	ENGL 200 or PHYS 230			3
LD Major	CS 221	Architecture	with grade C- or better.	3

LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	15
Fifth Semester				
UD-B				3
Code 1				3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	with grade C- or better.	3
			Total:	15
Sixth Semester				
C2				3
Code 2/D3				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 413	Analysis of Algorithms	301	3
UD Major	CS 441	Computer Networks	CS 301	3
			Total:	15
Seventh Semester				
UD-D				3
UD Major	CS 401	Software Engineering	better.	3
UD Major	CS 421	Operating Systems	better.	3
UD Major	CS 411	Automata and Complexity	both with grade C- or	3
UD Major	CS Breadth			3
			Total:	15
Eighth Semester				
Add'l C1 or C2*				3
UD-C				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				123

Degree: Computer Science, B.S.				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester				
E	GS 101A	Foundations of Success I		1
A1	COMM 100	Communication		3
B2				3
B4	MATH 125	Precalculus with Algebra		5
	ENGL 100 or 103			3
	ENGL 109			1
			Total:	16
Second Semester				
E	GS 101B	Foundations of Success II		1
A2	ENGL 101 or 104			3
	ENGL 109			1
C1				3
LD Major	MATH 130	Calculus I	One from the following:	4
LD Major	CS 101	Computer Science I	Mathematics/QR	4
			Total:	16
Third Semester				
E				1
B1/B3	PHYS 135	Physics for Engineers I		4
LD Major	MATH 131	Calculus II	MATH 130 with grade C-	3
LD Major	CS 201	Computer Science II	better.	4
A3	PHIL 100	Workshop in Critical Thinking		3
F				3
			Total:	18
Fourth Semester				
LD Major	CS 211	Discrete Structures	or better.	3
LD Major/D1	CS 230	Computing and Social Responsibility		3

Writing II/Second Com	ENGL 200 or PHYS 230			3
LD Major	CS 221	Architecture	with grade C- or better.	3
LD Major	MATH 225	Numerical Algorithms and Linear Algebra	CS 101 and MATH 130.	3
			Total:	15
Fifth Semester				
UD-B				3
Code 1/D2				3
UD Major	STAT 316	Statistics for Science and Engineering	MATH 131	3
UD Major	CS 301	Data Structures	CS 201 and CS 211	3
UD Major	CS 321	Computer Architecture	with grade C- or better.	3
			Total:	15
Sixth Semester				
C2				3
Code 2/D3				3
UD Major	CS 311	Programming Language Concepts	CS 201 and CS 221.	3
UD Major	CS 413	Analysis of Algorithms	301	3
UD Major	CS 441	Computer Networks	CS 301	3
			Total:	15
Seventh Semester				
UD-D				3
UD Major	CS 401	Software Engineering	better.	3
UD Major	CS 421	Operating Systems	better.	3
UD Major	CS 411	Automata and Complexity	both with grade C- or	3
UD Major	CS Breadth			3
			Total:	15
Eighth Semester				
Add'l C1 or C2*				3
UD-C				3
UD Major	CS Breadth			3
UD Major	CS Elective			3
UD Major	CS Elective			3
			Total:	15
Total Units:				125