

**Degree: Mathematics, B.S. 22-23**

Requirement Area	Course	Course Title	Prerequisites	Units	
<b>First Semester (FALL)</b>					
E	GS 101A	Foundations of Success I		1	
A1	COMM 100	Communication		3	
B1/B3		Physical Science/Laboratory Activity		3	
C1		Arts		3	
B4/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	
				<b>Total:</b>	<b>14</b>
<b>Second Semester (SPRING)</b>					
E	GS 101B	Foundations of Success II		1	
A2		Written Communication		3	
C2		Humanities		3	
D1		Social Science		3	
B2/B3		Life Science/Laboratory Activity		3	
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	3	
				<b>Total:</b>	<b>16</b>
<b>Third Semester (FALL)</b>					
E		Life Long Learning and Self-Development		1	
Second Composition	ENGL 200 or PHYS 230	Writing II		3	
A3	PHIL 100	Workshop in Critical Thinking		3	
Code 1/D2		U.S. Code/Social Science		3	
LD Major	MATH 230	Calculus III	MATH 131 with grade C- or better.	3	
Code 2		U.S. Code		3	
				<b>Total:</b>	<b>16</b>
<b>Fourth Semester (SPRING)</b>					
LD Major	MATH 215	Introduction to Linear Algebra	MATH 130.	3	
LD Major	MATH 285	Introduction to Differential Equations		3	
UD Major	MATH 300	Introduction to Mathematical Proof	MATH 131 with grade C- or better.	3	
UD Major	MATH 305	Math Software	MATH 131 with grade C- or better.	3	
Add'l C1 or C2*		Arts/Humanities		3	
F		Ethnic Studies		3	
				<b>Total:</b>	<b>15</b>
<b>Fifth Semester (FALL)</b>					
UD Major	MATH 320	Abstract Algebra I	MATH 210/215, MATH 300 with grade C- or better.	3	
UD Major	MATH	Applied Mathematics Coursework		3	
UD Major	MATH	Math Elective		3	
UD-C/overlay		UD Arts/Humanities		3	
UD Free Elective				3	
				<b>Total:</b>	<b>15</b>
<b>Sixth Semester (SPRING)</b>					
UD Major	MATH 330	Analysis I	MATH 300	3	
UD Major	MATH	Math Elective		3	
UD Major	MATH	Applied Mathematics Coursework		3	
UD-D/Overlay		UD Social Science		3	
Elective				3	
				<b>Total:</b>	<b>15</b>
<b>Seventh Semester (FALL)</b>					
UD Major	MATH	Theoretical Mathematics Coursework		3	
UD Major	MATH 310	Linear Algebra Theory	MATH 210/215, MATH 300 and MATH 305, all with grade C- or better.	3	
UD-B/Overlay		UD Science Inquiry and Quantitative Reasoning		3	
Elective				3	
Elective				2	
				<b>Total:</b>	<b>14</b>
<b>Eighth Semester (SPRING)</b>					
UD Major		Theoretical Mathematics Coursework		3	
UD Major	MATH 493	Senior Seminar	Department consent.	3	
Elective				3	
Elective				3	
Elective				3	
				<b>Total:</b>	<b>15</b>
<b>Total Units:</b>				<b>120</b>	

<b>CSUEB General Breadth and Graduation Requirement Checklist</b>	
<b>Area A (9 units): Communication in the English Language &amp; Critical Thinking (Must earn passing grade of C-/CR or better)</b>	
<input type="checkbox"/>	A1. COMM 100 or 104, MLL 111
<input type="checkbox"/>	A2. ENGL 101, 102, or 104
<input type="checkbox"/>	A3. PHIL 100
<b>Area B (9 units) : Scientific Inquiry &amp; Quantitative Reasoning</b>	
<input type="checkbox"/>	B1. Physical Science
<input type="checkbox"/>	B2. Life Science
<input type="checkbox"/>	B3. Laboratory Activity
<input type="checkbox"/>	B4. Quantitative Reasoning (Must earn passing grade of C-/CR or better.)
<b>Area C (9 units): Arts &amp; Humanities - Minimum of three different disciplines as designated by course prefix (e.g., ART, THEA, MUS)</b>	
<input type="checkbox"/>	C1. Arts
<input type="checkbox"/>	C2. Humanities
<input type="checkbox"/>	* Additional Lower-division Area C Course in Arts (C1) or Humanities (C2)
<b>Area D (6 units) : Social Sciences - Minimum of three different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)</b>	
<input type="checkbox"/>	D1.
<input type="checkbox"/>	D2.
<b>Area E (3 units) : Lifelong Learning and Self-Development</b>	
<input type="checkbox"/>	E.
<b>Area F (3 units): Ethnic Studies</b>	
<input type="checkbox"/>	F.
<b>Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.</b>	
<input type="checkbox"/>	Second Composition
<b>U.S. Code (American Institutions Requirement) - Two courses (6 units) covering three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. Constitution), and US-3 (California State &amp; Local Government).</b>	
<input type="checkbox"/>	Code 1.
<input type="checkbox"/>	Code 2.
<b>Upper Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)</b>	
<input type="checkbox"/>	UD-B. Upper-division Science Inquiry and Quantitative Reasoning
<input type="checkbox"/>	UD-C. Upper-division Arts OR Humanities
<input type="checkbox"/>	UD-D. Upper-division Social Sciences
<b>Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major</b>	
<input type="checkbox"/>	Diversity (Div)
<input type="checkbox"/>	Social Justice (SJ)
<input type="checkbox"/>	Sustainability (S)
<b>Applied Mathematics Coursework</b>	
Choose two (2) courses from the following for 6 units:	
MATH 370 - Numerical Analysis I Units: 3	
MATH 380 - Linear Programming Units: 3	
MATH 385 - Linear and Nonlinear Systems of Differential Equations Units: 3 (*)	
<b>Theoretical Mathematics Coursework</b>	
Choose two (2) courses from the following for 6 units:	
MATH 321 - Abstract Algebra II Units: 3 (*)	
MATH 331 - Analysis II Units: 3	
MATH 340 - Modern Geometry Units: 3 (*)	
<b>Elective Courses</b>	
Choose two (2) elective courses from the following for 6 units:	
MATH 360 - Number Theory Units: 3 (*)	
MATH 440 - Topics in Geometry Units: 3	
MATH 450 - Combinatorics Units: 3	
MATH 470 - Numerical Analysis II Units: 3	
MATH 497 - Topics in Advanced Mathematics Units: 3	
Or any upper-division mathematics course(s) NOT used to fulfill other major requirements, except MATH 318, 319, 402, 403, or 406.	
Or any graduate level Math course.	
STAT 316 - Statistics and Probability for Science and Engineering Units: 3 (*)	
Making specific course choices within the Math B.S. leads to a certification for students applying for a credential program to teach high school mathematics. The certification, when accompanied by 45 hours of specific service requirements (which also fulfills a state requirement for admission into a teacher credential program), allows a student to waive taking the three required math California Subject Examinations for Teachers (CSETs). This major pathway is indicated throughout by asterisks (*) for each required course. Students should see the Single Subject Math Advisor when ready to plan for upper division courses.	
<b>*Students are required to take a minimum of 40 semester units as upper division (includes 9 units upper division GE)</b>	

Note: No changes to, or from, the credit/no credit pattern are permitted after the Grade Type Change period. There are no exceptions to this rule. Courses in a student's major department, regardless of course prefix, may not be taken "CR/NC," unless that is the only grading pattern in the course.