

Degree: Industrial Engineering, B.S. 22-23				
Requirement Area	Course	Course Title	Prerequisites	Units
First Semester (FALL)				
LD Major/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
B1/B3 LD Major	CHEM 110	General Chemistry for Engineering		3
A2	ENGL 102			3
LD Major	PHYS 135	Physics for Scientists and Engrs. I		4
		Total:		14
Second Semester (SPRING)				
LD Major	PHYS 136	Physics for Scientists and Engrs. II	MATH 130 and PHYS 135.	4
LD Major	MATH 131	Calculus II	MATH 130 with grade C- or better.	3
LD Major/Second Comp	ENGR 200	Introduction to Engineering and Design		3
LD Major	ENGR 210	Manufacturing Materials and Processes	CHEM 110 and MATH 130.	4
		Total:		14
Third Semester (FALL)				
A1				3
LD Major	MATH 215	Introduction to Linear Algebra	MATH 130.	3
B2/Sustainability Overlay				3
LD Major	ENGR 220	Statics	PHYS 135.	3
UD Major	INDE 330	Engr. Statistics and Prob.	MATH 130.	3
		Total:		15
Fourth Semester (SPRING)				
A3	PHIL 100	Workshop in Critical Thinking		3
D1/LD Major	PSYC 100	General Psychology		3
LD Major	ENGR 215	Computer Methods in Engr.	MATH 131.	3
LD Major	ENGR 230	Electric Circuits I	PHYS 136 and MATH 215.	3
UD Major	INDE 340	Design of Engr. Experiments	INDE 330 or STAT 316.	3
		Total:		15
Fifth Semester (FALL)				
Code 1/D2				3
C1/Diversity Overlay				3
UD Major	ENGR 320	Engr. Economics	MATH 130.	3
UD-B/UD Major	INDE 390	Human Factors and Work Methods	INDE 330 or STAT 100; and completion of GE A1, A2, A3, and B4.	4
UD Major	INDE 360	Operations Research	MATH 131.	4
		Total:		17
Sixth Semester (SPRING)				
UD Major	INDE 410	Facilities Plan. Dsgn. and Mat. Handling	ENGR 210.	3
UD Major	INDE 430	Design of Work Systems	INDE 390.	4
UD Math		student choice		3
C2				3
Add'l C1 or C2*				3
		Total:		16
Seventh Semester (FALL)				
F		Ethnic Studies		3
UD-C/Social Justice Overlay				3
UD Major	INDE 420	Discrete Event Simulation	ENGR 215, and INDE 330 or STAT 316.	3
UD Major	INDE 440	Sustainable Production and Supply Systems	INDE 360, and either INDE 330 or STAT 316.	4
UD Math		student choice		3
		Total:		16
Eighth Semester (SPRING)				
UD-D/Code	HIST 382 (Recommended)			3
UD Major	INDE 450	Systems Quality and Reliability	ENGR 210, and either INDE 330 or STAT 316.	4
UD Major	INDE 460	Service & Manu. Systems Modeling	INDE 360.	4
UD Major	INDE 492	Senior Design	Completion or enrollment in any three courses from: INDE 410, INDE 420, INDE 440, INDE 450, INDE 460.	4
		Total:		15
Total Units:				122

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.

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)	
<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	
Area B (9 units) : Scientific Inquiry & Quantitative Reasoning	
<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.)	
Area C (9 units): Arts & Humanities - Minimum of two different disciplines as designated by course prefix (e.g., ART, THEA, MUS)	
<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)	
Area D (6 units) : Social Sciences - Minimum of two different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)	
<input type="checkbox"/> D1.	
<input type="checkbox"/> D2.	
Area E (3 units) : Lifelong Learning and Self-Development	
<input type="checkbox"/> E.	
Area F (3 units): Ethnic Studies	
<input type="checkbox"/> F.	
Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.	
<input type="checkbox"/> Second Composition	
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 & Local Government).	
<input type="checkbox"/> Code 1.	
<input type="checkbox"/> Code 2.	
Upper Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)	
<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	
Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major	
<input type="checkbox"/> Diversity (Div)	
<input type="checkbox"/> Social Justice (SJ)	
<input type="checkbox"/> Sustainability (S)	
Elective Courses	
Under consultation with their advisor, students shall select a minimum of 6 units of approved, upper-division Math/Basic Science elective courses.	

***Students are required to take a minimum of 40 semester units as upper division (includes 9 units upper division GE)**