BS INDUSTRIAL ENGINEERING
2022-2026

CAL POLY

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Note: No Major or Support courses may be selected as credit/no credit.

MAJOR COURSES		
IME 101	Intro to Industrial & Manufacturing Engr	1
IME 141	Manufacturing Processes: Net Shape	1
IME 144	Introduction to Design and Manufacturing	4
IME 156	Basic Electronics Manufacturing	2
IME 212	Introduction to Enterprise Analytics	4
IME 223	Process Improvement Fundamentals	4
IME 301	Operations Research I	4
IME 305	Operations Research II	4
IME 312	Data Management and System Design	4
IME 315	Financial Decision Making for Engineers	3
IME 319	Human Factors Engineering	3
IME 326	Engineering Test Design and Analysis	4
IME 372	Applications of Enterprise Analytics	4
IME 410	Production Planning and Control Systems	4
IME 417	Supply Chain and Logistics Management	4
IME 420	Simulation	4
IME 429	Ergonomics Laboratory	1
IME 430	Quality Engineering	4
IME 443	Facilities Planning and Design	4
IME 481 & IME 482 & IME 483	Senior Design Project I **and** Senior Design Project II **and** Senior Design Project III [1, 2]	6
Technical Electives **(see reverse for list)**		13
Total Major Units		**82**

SUPPORT COURSES		
Select from the following:		6
CE 204	Mechanics of Materials I	
EE 321	Electronics	
ME 212	Engineering Dynamics	
BIO 213 & BMED 213	Life Science for Engineers **and** Bioengineering Fundamentals (B2) [6]	4
CHEM 124	General Chemistry for Physical Science and Engineering I (B1 & B3) [6]	4
CSC 232 or CPE/CSC 101	Computer Program for Scientists & Engineers [7] Fundamentals of Computer Science	3
EE 201	Electric Circuit Theory	3
EE 251	Electric Circuits Laboratory	1
ENGL 147	Writing Arguments about STEM (A3) [6]	4
MATE 210	Materials Engineering	3
MATE 215	Materials Laboratory I	1
MATH 141	Calculus I (B4) [6]	4
MATH 142	Calculus II (B4) [6]	4
MATH 143	Calculus III (Area B Electives) [6]	4
MATH 241	Calculus IV	4
MATH 244	Linear Analysis I	4
ME 211	Engineering Statics	3
PHYS 141	General Physics IA (Area B Electives) [6]	4
PHYS 142	General Physics II	4
PHYS 143	General Physics III	4
PSY 201 or PSY 202	General Psychology (E) [6] General Psychology (E) [6]	4
STAT 321	Probability and Statistics for Engineers and Scientists (Upper-Division B) [6]	4
Total Support Units		**72**

GENERAL EDUCATION		
Area A English Language Communication and Critical Thinking		
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking (4 units in Support) [6]	0
Area B Scientific Inquiry and Quantitative Reasoning		
B1	Physical Science (4 units in Support) [6]	0
B2	Life Science (4 units in Support) [6]	0
B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (8 units in Support) [6]	0
Upper-Division B (4 units in Support) [6]		0
Area B Electives (8 units in Support) [6]		0
Area C Arts and Humanities		
Lower-division courses in Area C must come from three different subject prefixes.		
C1	Arts	4
C2	Humanities	4
Lower-Division C Elective - Select a course from either C1 or C2.		4
Upper-Division C		4
Area D Social Sciences		
D1	American Institutions (Title 5, Section 40404 Requirement)	4
Area D Elective - Select either a lower-division D2 or upper-division D course.		4
Area E Lifelong Learning and Self-Development		
Lower-Division E (4 units in Support) [6]		0
Area F Ethnic Studies		
F	Ethnic Studies	4
Total GE Units		**36**
FREE ELECTIVES		**0**
TOTAL DEGREE UNITS		**190**

FOOTNOTES

1 ENGR 459, ENGR 460 and ENGR 461 (6) may substitute for IME 481, IME 482 and IME 483 (6).

2 ENGR 463, ENGR 464 and ENGR 465 (6) may substitute for IME 481, IME 482 and IME 483 (6).

3 If a course is taken to meet the Technical Electives requirement, it cannot be double-counted to satisfy another Major or Support requirement.

4 Consultation with an advisor is recommended prior to selecting Technical Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals. Upper-division courses not on this list may substitute as Technical Electives, if approved by an advisor and the Industrial and Manufacturing Engineering department chair.

5 IME 400 requires a Special Problems form and no more than 4 total units are allowed.

6 Required in Major or Support; also satisfies General Education (GE) requirement.

7 Excess unit from CPE/CSC 101 can count as Category B technical elective.

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Technical Electives [3,4] — 13

Select from Category A (8-13 units) & Category B (0-5 units) below:

Category A

DATA 301	Introduction to Data Science
EE 321	Electronics
EE 361	Electronics Laboratory
EE 434	Automotive Engineering for a Sustainable Future
IME 303	Project Organization and Management
IME 331	Intermediate Metal Casting
IME 335	Computer-Aided Manufacturing I
IME 336	Computer-Aided Manufacturing II
IME 356	Manufacturing Automation
IME 400	Special Problems for Advanced Undergraduates [5]
IME 403	Software Product Management
IME 408	Systems Engineering
IME 409	Economic Decision Systems
IME 415	Service Enterprises Engineering and Management
IME 416	Automation of Industrial Systems
IME 418	Product-Process Design
IME 424	Industrial Engineering in Healthcare
IME 428	Engineering Metrology
IME 432	Additive Manufacturing
IME 435	Reliability for Design and Testing
IME 451	Radio Frequency Identification and Sensing System Design
IME 456	The Industrial Internet of Things
IME 457	Advanced Electronic Manufacturing
IME 458	Microelectronics and Electronics Packaging
IME 470	Selected Advanced Topics
IME 471	Selected Advanced Laboratory
IME 510	Systems Engineering I
IME 511	Systems Engineering II
IME 520	Advanced Information Systems for Operations
IME 527	Design of Experiments
IME 535	Change Management for Engineering Leaders
IME 541	Advanced Operations Research
IME 542	Applied Reliability Engineering
IME 543	Applied Human Factors
IME 544	Advanced Topics in Engineering Economy
IME 545	Advanced Topics in Simulation
IME 549	Network Analysis and Optimization
IME 565	Predictive Data Analytics for Engineers
MATH 344	Linear Analysis II
MATH 350	Mathematical Software
ME 302	Thermodynamics I
ME 305	Introduction to Mechatronics
ME 341	Fluid Mechanics I
STAT 324	Applied Regression Analysis
STAT 330	Statistical Computing with SAS
STAT 331	Statistical Computing with R
STAT 414	Multilevel and Mixed Modeling
STAT 415	Bayesian Reasoning and Methods
STAT 416	Statistical Analysis of Time Series
STAT 419	Applied Multivariate Statistics
STAT 431	Advanced Statistical Computing with R

Category B

AG/ISLA/EDES/ ENGR/SCM/ UNIV 350	The Global Environment
BUS/ENGR 310	Introduction to Entrepreneurship
BUS 311	Managing Technology in the International Legal
BUS 346	Principles of Marketing
BUS 382	Leadership and Organizations
CE 204	Mechanics of Materials I
CE 207	Mechanics of Materials II
CPE 202	Data Structures
IME 239	Industrial Costs and Controls
IME 244	Intermediate Design and Manufacturing
IME 401	Sales Engineering
IME 421	Engineering Management
IME 441	Engineering Supervision I
IME 460	Introduction to Value Chain Analysis
ME 212	Engineering Dynamics
PSY 350	Teamwork