



**California State Polytechnic University, Pomona
Degree Curriculum Sheet**

Plan (Major) **MECHANICAL ENGINEERING**

Catalog Year **2017-2018**

Name _____

Subplan/Option _____

Minimum Units Required **194**

Student ID _____

Required Core Courses

Required of all students. A 2.0 cumulative GPA is required in core courses in order to receive a degree in the major.

- ME 100L - Mechanical Engineering Orientation (1)
- ME 214 - Vector Statics (3)
- ME 215 - Vector Dynamics (4)
- ME 218 - Strength of Materials I (3)
- ME 219 - Strength of Materials II (3)
- ME 220L - Strength of Materials Laboratory (1)
- ME 224L - Mechanics Laboratory (1)
- ME 232 - Engineering Digital Computations (2)
- ME 232A - Engineering Digital Computations Activity (1)
- ME 233/233L - Introduction to Mechanical Design (3/1)
- ME 301 - Thermodynamics I (4)
- ME 302 - Thermodynamics II (4)
- ME 311 - Fluid Mechanics I (3)
- ME 312 - Fluid Mechanics II (3)
- ME 313L - Fluid Mechanics Laboratory (1)
- ME 315 - Engineering Materials (4)
- ME 316 - Intermediate Dynamics (3)
- ME 319 - Stress Analysis (4)
- ME 325/325L - Machine Design/Laboratory (3/1)
- ME 330A - Engineering Numerical Computations Activity (1)
- ME 340 - Modeling and Simulation of Dynamic Systems (3)
- ME 350L - Engineering Materials and Selection Laboratory (1)
- ME 406/406A - Finite Element Analysis (3/1)
- ME 415 - Heat Transfer (4)

- ME 418/418L - Air Conditioning/Laboratory (3/1) or
- ME 427 - Thermal Systems Design (4)

- ME 435/435L - Theory and Design for Mechanical Measurement/Laboratory (3/1)
- ME 439/439L - Control of Mechanical Systems/Laboratory (3/1)
- MAT 115 - Analytic Geometry and Calculus II (4)
- MAT 116 - Analytic Geometry and Calculus III (4)
- MAT 214 - Calculus of Several Variables I (3)
- MAT 215 - Calculus of Several Variables II (3)
- MAT 224 - Elementary Linear Algebra and Differential Equations (4)

- PHY 133 - General Physics (3) and
- PHY 133L - General Physics Laboratory (1)

Total Units 100

Required Emphasis Courses

The Mechanical Engineering program requires each student to select technical elective courses in one of the two technical emphases to meet the graduation requirement: Mechanical Design and Energy Systems. Each Mechanical Engineering student is required to specify three courses out of one of the two emphases as listed below. No other courses from any other department or university will be accepted as substitutes for these courses. The courses included in the two required technical emphasis courses pool are as follows: (please see back side of Curriculum Sheet.)

Total Units 12

Required Support Courses

The following major support courses should be used to satisfy the indicated GE requirements. If these courses are not used to satisfy GE, the total units to degree may be more than 194 units.

Students may receive senior project credit by taking EGR 481 and EGR 482, provided they satisfy all prerequisite requirements for senior project and get approval from the department by completing the department senior project form. For senior project prerequisites, please refer to prerequisites for ME 461 and ME 462.

- CHM 121 - General Chemistry (3) (B1) and
- CHM 121L - General Chemistry Laboratory (1) (B3)

- EC 201 - Principles of Economics (4) (D2) or
- EC 202 - Principles of Economics (4) (D2)

- ECE 231/231L - Elements of Electrical Engineering (3/1)
- EGR 100/100L - Engineering, Society, and You (3/1) (E)

- EGR 481 - Project Design Principles and Applications (2) (B5) and
- EGR 482 - Project Design Principles and Applications (2) (B5)

- IME 402 - Ethical Considerations in Technology and Applied Science (4) (C4)
- IME 403 - Asset Allocation in Technical Decision Making (4) (D4)
- MAT 114 - Analytic Geometry and Calculus I (4) (B4)
- MFE 126/126L - Engineering Graphics I/Laboratory (2/1)
- MFE 201/201L - Manufacturing Systems Processes/Laboratory (3/1)

- PHY 131 - General Physics (3) and
- PHY 131L - General Physics Laboratory (1) (B3)

***To receive senior project credit, the student must have successfully passed all 300 level courses in the core.**

Total Units 43

Interdisciplinary General Education

See Interdisciplinary General Education Courses on the back of the Curriculum Sheet.

Total Units 32

General Education Requirements

Area A Communication & Critical Thinking (12 units)

1. Oral Communication
2. Written Communication
3. Critical Thinking

Area B Mathematics & Natural Sciences (16 units)

1. Physical Science
2. Biological Science
3. Laboratory Activity
4. Math/Quantitative Reasoning
5. Science & Technology Synthesis

Area C Humanities (16 units)

1. Visual and Performing Arts
2. Philosophy and Civilization
3. Literature and Foreign Language
4. Humanities Synthesis

Area D Social Sciences (20 units)

1. U.S. History, Constitution, American Ideals
 - a. United States History
 - b. Introduction to American Government
2. History, Economics and Political Science
3. Sociology, Anthropology, Ethnic & Gender Studies
4. Social Science Synthesis

Area E Lifelong Understanding & Self Development (4 units)

Total Units 68

American Institutions

Courses that satisfy this requirement may also satisfy GE Area D1

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American Cultural Perspectives Requirement

Refer to catalog for list of courses that satisfy this requirement. Course may also satisfy major, minor, GE, or unrestricted elective requirements.

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All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the quarter following completion of 120 units for undergraduates.

Mechanical Design Emphasis

ME 330 - Engineering Numerical Computations (4)
 ME 405 - Acoustics and Noise Control (4)
 ME 413 - Mechanical Vibrations (4)

ME 418/418L - Air Conditioning/Laboratory (3/1) * or
 ME 427 - Thermal Systems Design (4) *

ME 421 - Dynamics of Machinery (4)
 ME 425/425L - Advanced Machine Design/Laboratory (3/1)
 ME 499/499A/499L - Special Topics for Upper Division Students (1-4/1-4/1-4) (lecture component:
 ME 499 (4)**)

* ME 418/418L or ME 427 may be taken depending on which one was used by the student to satisfy the ME major core requirement, i.e. if the student used ME 427 in ME major core requirement, he or she can take ME 418/418L in the Mechanical Design emphasis.

** Deviations pending approval per Academic Advisor and Mechanical Engineering Curriculum Committee approval.

Energy Systems Emphasis

ME 307 - Alternative Energy Systems (4)
 ME 330 - Engineering Numerical Computations (4)
 ME 407/L - Solar Thermal Engineering (3/1)
 ME 408 - Nuclear Engineering (4)
 ME 411/411L - Heat Power/Laboratory (3/1)
 ME 412/412L - Internal Combustion Engines/Laboratory (3/1)

ME 418/418L - Air Conditioning/Laboratory (3/1) * or
 ME 427 - Thermal Systems Design (4) *

ME 499/499A/499L - Special Topics for Upper Division Students (1-4/1-4/1-4) (lecture component:
 ME 499 (4)**)

* ME 418/418L or ME 427 may be taken depending on which one was used by the student to satisfy the ME major core requirement, i.e. if the student used ME 427 in ME major core requirement, he or she can take ME 418/418L in the Energy Systems emphasis.

** Deviations pending approval per Academic Advisor and Mechanical Engineering Curriculum Committee approval.

Interdisciplinary General Education

An alternate pattern for partial fulfillment of GE Areas A, C, D, and E available for students is the Interdisciplinary General Education (IGE) program. Students should see an advisor for specific GE coursework required by their major. Students must be exempt from or score at least 147 on the EPT to qualify for IGE. Please refer to the University Catalog General Education Program section for additional information.

How IGE fulfills General Education Requirements:

Year	Completion of IGE Courses	Satisfies GE Requirements
Freshman	IGE 120, IGE 121, IGE 122	A2 as well as any 2 courses from C1-C3
Sophomore	IGE 220, IGE 221, IGE 222	D1 (8 units) and D3
Junior	IGE 223, IGE 224	D2 and Area E