



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

Plan (Major) **AEROSPACE ENGINEERING, B.S.**

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 for the major in order to receive a degree in the major.

- ARO 101L - Introduction to Aeronautics (1)
- ARO 102L - Introduction to Astronautics (1)
- ARO 103L - Introduction to Aerospace Propulsion (1)
- ARO 201L - Fundamentals of Systems Engineering (1)
- ARO 202L - Fundamentals of Aeronautics (1)
- ARO 203L - Fundamentals of Astronautics (1)
- ARO 301 - Fluid Dynamics (4)
- ARO 305 - Low-Speed Aerodynamics and Performance (4)
- ARO 309 - Orbital Mechanics (3)
- ARO 311 - Gas Dynamics (3)
- ARO 312 - Aircraft Jet Propulsion (4)
- ARO 322/322L - Aerospace Feedback Control Systems (3/1)
- ARO 326/326L - Aerospace Structural Mechanics I (3/1)
- ARO 327 - Aerospace Structural Mechanics II (3)
- ARO 329 - Aerospace Structural Analysis and Design (3)
- ARO 351L - Fluid Dynamics and Heat Transfer Laboratory (1)

- ARO 352L - High-Speed Aerodynamics Laboratory (1) or
- ARO 435L - Low-Speed Aerodynamics Laboratory (1)

- ARO 357L - Aerospace Structures Laboratory (1)
- ARO 401 - Heat, Mass and Momentum Transfer (4)
- ARO 404 - High-Speed Aerodynamics (3)
- ARO 405 - Aircraft Stability and Control (4)
- ARO 406 - Advanced Dynamics and Vibrations of Aerospace Systems (4)

- ARO 471L - Space Launch Vehicle Design Laboratory I (2) or
- ARO 481L - Space Vehicle Design Laboratory I (2) or
- ARO 491L - Air Vehicle Design Laboratory I (2)

- ARO 472L - Space Launch Vehicle Design Laboratory II (2) or
- ARO 482L - Space Vehicle Design Laboratory II (2) or
- ARO 492L - Air Vehicle Design Laboratory II (2)

- ARO 473L - Space Launch Vehicle Design Laboratory III (2) or
- ARO 483L - Space Vehicle Design Laboratory III (2) or
- ARO 493L - Air Vehicle Design Laboratory III (2)

- ARO 490L - Aerosciences (1)

Total Units 63

Elective Core Courses

Approved Technical Electives (13)

Total Units 13

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.

- CHE 302 - Chemical Engineering Thermodynamics I (4) or
- ME 301 - Thermodynamics I (4)

- CHM 121 - General Chemistry (3)
- CHM 121L - General Chemistry Laboratory (1) (B3)
- ECE 231/231L - Elements of Electrical Engineering (3/1)
- EGR 481 - Project Design Principles and Applications (2) (B5)
- EGR 482 - Project Design Principles and Applications (2) (B5)
- IME 402 - Ethical Considerations in Technology and Applied Science (4) (C4)
- MAT 114 - Analytic Geometry and Calculus I (4) (B4)
- 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 216 - Differential Equations (4) or
- MAT 224 - Elementary Linear Algebra and Differential Equations (4)

- MAT 318 - Mathematical Analysis of Engineering Problems (3)
- ME 214 - Vector Statics (3)
- ME 215 - Vector Dynamics (4)
- MTE 207 - Materials Science and Engineering (3)

- PHY 131 - General Physics (3) (B1) and
- PHY 131L - General Physics Laboratory (1) (B3)

- PHY 132 - General Physics (3) and
- PHY 132L - General Physics Laboratory (1)

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

Total Units 67

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 |

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.

8

American Cultural Perspectives Requirement

Refer to the University Catalog General Education Program section for a list of courses that satisfy this requirement. Course may also satisfy major, minor, GE, or unrestricted elective requirements.

4

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.