Plan (Major) **AEROSPACE ENGINEERING**

Subplan/Option _____

Catalog Year **2015 - 2016**

Minimum Units Required **194**

Name _____

Student ID _____

Required Core Courses

Course		Units
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.		
Intro to Aeronautics	ARO 101L	1
Intro to Astronautics	ARO 102L	1
Intro to Aerospace Propulsion	ARO 103L	1
Fundamentals of Aeronautics	ARO 202L	1
Fundamentals of Astronautics	ARO 203L	1
Fluid Dynamics	ARO 301	4
Low-Speed Aerodynamics and Performance	ARO 305	4
Orbital Mechanics	ARO 309	3
Gas Dynamics	ARO 311	3
Aircraft Jet Propulsion	ARO 312	4
Aerospace Feedback Control Systems & Lab	ARO 322/322L	3/1
Aerospace Structural Mechanics I & Lab	ARO 326/326L	3/1
Aerospace Structural Mechanics II	ARO 327	3
Aerospace Structural Analysis and Design	ARO 329	3
Fluid Dynamics and Heat Transfer Lab	ARO 351L	1
High-Speed Aerodynamics Lab	ARO 352L	1
or Low-Speed Aerodynamics Lab	ARO 435L	(1)
Aerospace Structures Lab	ARO 357L	1
Heat, Mass and Momentum Transfer	ARO 401	4
High-Speed Aerodynamics	ARO 404	3
Aircraft Stability and Control	ARO 405	4
Advanced Dynamics and Vibrations of Aerospace Systems	ARO 406	4
Space Launch Vehicle Design Lab I	ARO 471L	2
or Space Vehicle Design Lab I	ARO 481L	(2)
or Air Vehicle Design Lab I	ARO 491L	(2)
Space Launch Vehicle Design Lab II	ARO 472L	2
or Space Vehicle Design Lab II	ARO 482L	(2)
or Air Vehicle Design Lab II	ARO 492L	(2)
Space Launch Vehicle Design Lab III	ARO 473L	2
or Space Vehicle Design Lab III	ARO 483L	(2)
or Air Vehicle Design Lab III	ARO 493L	(2)
Aerosciences Lab	ARO 490L	1
Total Units		**62**

Elective Core Courses

Course	Units
Approved Technical Electives	13
Total Units	**13**

Required Support Courses

Course		Units
The following required support courses should be taken to satisfy the indicated GE Requirements to achieve the minimum units to degree listed at the top of this sheet.		
Fundamentals of Systems Engineering	ARO 201L	1
Chemical Engineering Thermodynamics I	CHE 302	4
or Thermodynamics I	ME 301	(4)
General Chemistry & Lab (B3)	CHM 121/121L	3/1
Elements of Electrical Engineering & Lab	ECE 231/231L	3/1
Project Design Principles and Applications (B5)	EGR 481	2
Project Design Principles and Applications (B5)	EGR 482	2
Ethical Considerations in Technology and Applied Science (C4)	IME 402	4
Analytic Geometry and Calculus I (B4)	MAT 114	4
Analytic Geometry and Calculus II	MAT 115	4
Analytic Geometry and Calculus III	MAT 116	4
Calculus of Several Variables I	MAT 214	3
Calculus of Several Variables II	MAT 215	3
Differential Equations	MAT 216	4
or Elementary Linear Algebra Diff Equations	MAT 224	(4)
Mathematical Analysis of Engineering Problems	MAT 318	3
Vector Statics	ME 214	3
Vector Dynamics	ME 215	4
Materials Science and Engineering	MTE 207	3
General Physics & Lab (B1, B3)	PHY 131/131L	3/1
General Physics & Lab	PHY 132/132L	3/1
General Physics & Lab	PHY 133/133L	3/1
Total		**68**

General Education Requirements

Area	Units
Area A Communication & Critical Thinking	12
1. Oral Communication	
2. Written Communication	
3. Critical Thinking	
Area B Mathematics & Natural Sciences	16
Select at least one lab course from subarea 1 or 2.	
1. Physical Science	
2. Biological Science	
3. Laboratory Activity	
4. Math/Quantitative Reasoning	
5. Science & Technology Synthesis	
Area C Humanities	16
1. Visual and Performing Arts	
2. Philosophy and Civilization	
3. Literature and Foreign Language	
4. Humanities Synthesis	
Area D Social Sciences	20
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
Total Units	**68**

IGE (G.E. Alternative)

IGE 120	4
IGE 121	4
IGE 122	4
IGE 220	4
IGE 221	4
IGE 222	4
IGE 223	4
IGE 224	4
AREA A1	4
AREA A3	4
AREA B	16
AREA C1, C2 or C3	4
AREA C4	4
AREA D4	4

See University Catalog for information on how IGE meets GE requirements.

American Institutions	
Courses that satisfy this requirement may also satisfy GE Area D1	8

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.	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.