

University of Texas at El Paso
Aerospace and Mechanical Engineering Department

Phone: (915) 747-5450

B.S. in Aerospace Engineering Degree Plan

| Year | Semester I | | | Hrs | Semester II | | | Hrs |
|-----------------------------|------------|-------------------|--|-----------|--------------|--------------|--|-----------|
| Freshman | MECH | 1305 | Graphic and Design Fundamentals + | 3 | MECH | 1321 | Mechanics I – Statics + (MATH 1411+ PHYS 2320/2120 or PHYS 2420+) | 3 |
| | RWS | 1301 | Rhetoric & Composition I + | 3 | HIST | 1301 | History of US to 1865 + | 3 |
| | MATH | 1411 | Calculus I + | 4 | RWS | 1302 | Rhetoric & Composition 2 + (RWS 1301+) | 3 |
| | PHYS | 2320/2120 or 2420 | Physics I (MATH 1411 is CO requisite) | 4 | MATH | 1312 | Calculus II + (MATH 1411+) | 3 |
| | CS | 1310 or 1320 | Component Area (CS 1310, CS 1320, EL 1301, or UNIV1301)+ | 3 | CHEM CHEM | 1305 1105 | Chemistry I + | 4 |
| | | | | 17 | | | | 16 |
| Sophomore | MECH | 2322 | Mechanics of Materials + (MECH 1321+) | 3 | MECH | 2340 | Mechanics II – Dynamics + (MECH 1321+) | 3 |
| | MATH | 2313 | Calculus III + (MATH 1312+) | 3 | MECH | 2311 | Introduction to Thermo-Fluid Science + (MATH 1312+) | 3 |
| | AERO | 2331 | Aerospace materials + (CHEM 1305+,CHEM 1105+) | 3 | MECH | 2103 | Engineering Computations + (MATH1312+) | 1 |
| | AERO | 2131 | Aerospace materials Lab (MECH 1305+) | 1 | MECH | 2342 | Electro-Mechanical Systems + (MATH 1312+) | 3 |
| | HIST | 1302 | History of US since 1865 | 3 | CE | 2326 | Engineering Economics + | 3 |
| | | | Science Elective + (see NOTE 1) | 4 | MATH | 2326 | Differential Equations | 3 |
| | | | | | 17 | | | |
| Junior | | | Laboratory Experience (see NOTE 2) | 1 | | | Laboratory Experience (see NOTE 2) | 1 |
| | MECH | 3352 | Engineering Analysis (MATH 2326) | 3 | COMM | 1302 | Business and Professional Communication + | 3 |
| | AERO | 3312 | Aerodynamics I (MECH 2311+) | 3 | AERO | 3343 | Aerospace Dynamics and Controls (MATH 2326+, MECH 2340+, MECH 2342+) | 3 |
| | AERO | 3323 | Aerospace Structures I (AERO 2331+, MECH 2322+) | 3 | | | Aero concentration I (NOTE 5) | 3 |
| | POLS | 2310 | Introduction to Politics + | 3 | | | Humanities Electives + | 3 |
| | MATH | | Math Elective (see NOTE 3) | 3 | | | Science/Math Elective+ (see NOTE 4) | 3 |
| | | | | | 16 | | | |
| Senior | | | Aero concentration II (NOTE 5) | 3 | AERO | 4366 | Aerospace Senior Design (CE 2326, see Note 7). | 3 |
| | AERO | 4322 | Propulsion (AERO 3312) | 3 | | | Aero Free Elective (NOTE 6) | 3 |
| | | | Aero concentration III (NOTE 5) | 3 | | | Aero Free Elective (NOTE 6) | 3 |
| | MECH | 4326 | Finite Element Analysis | 3 | POLS | 2311 | American Government and Politics | 3 |
| | AERO | 4312 | Aircraft Design (AERO3312, AERO 3323, MECH 3352) | 3 | | | Visual and Performing Art Elective | 3 |
| | | | | | 15 | | | |
| Total 128 Credit hrs | | | | | | | | |

| Laboratory Experience | | | |
|-----------------------|------|----------------------------------|---|
| MECH | 3123 | Solid Mechanics Lab (MECH 2322+) | 1 |
| MECH | 3113 | Thermo-fluid Lab (MECH 2311+) | 1 |
| MECH | 3103 | Mechatronics Lab (MECH 2342+) | 1 |

| Aerostructures Concentration | | | |
|------------------------------|------|--|---|
| AERO | 4313 | Aerospace structures II (AERO 3323) | 3 |
| AERO | 4325 | Vibrations | 3 |
| AERO | 4335 | Aerospace structural dynamics (MECH 2340+, MECH 2342+) | 3 |
| AERO | 4329 | Special topics in aerospace structures | 3 |

| Propulsion and Aerodynamics Concentration | | | |
|---|------|------------------------------|---|
| AERO | 4331 | Aerodynamics II (AERO 3312) | 3 |
| AERO | 4319 | Special topics in propulsion | 3 |

| Aerospace Dynamics and Controls Concentration | | | |
|---|------|---|---|
| AERO | 4311 | Flight Dynamics and Controls (AERO 3312, AERO 3343) | 3 |
| AERO | 4351 | Orbit and Attitude Dynamics (MATH 2326+, AERO 3343) | 3 |
| AERO | 4359 | Special Topics in Aerospace Dynamics and Controls | |

| Aerospace Systems Concentration | | | |
|---------------------------------|------|---|---|
| AERO | 4332 | Hypersonic Vehicle Design (MECH 3352) | 3 |
| AERO | 4339 | Advanced topics in Aerospace Systems Engineering (Hypersonic) | 3 |
| AERO | 4353 | Spacecraft Environments (MATH 2326 or PHYS 2420) | 3 |
| AERO | 4355 | Space Mission Design | 3 |
| AERO | 4364 | Aerospace Communications (MECH 2342+) | 3 |
| AERO | 4365 | Aerospace System Engineering (CE 2326+, COMM 1302+) | 3 |

Notes: Prerequisites listed in parentheses, +Grade of C or better required

1. Must be either CHEM 1306 with CHEM 1106, PHYS 2321/2121 or PHYS 2421, or by permission of advisor.
2. From the department-approved list of Laboratory Experience courses
3. Selected from MATH 3323, 3335, 4326, 4329, 4336, STAT 3320. By completing 3 of these electives you may be eligible for a Mathematics minor, interested students should consult the Department of Mathematics.
4. Approved courses are: PHYS 2325, PHYS 3351, PHYS 4348, or any course listed in NOTE 3 (not already taken). **from MATH 3323, 3335, 4326, 4329, 4336, STAT 3320.**
5. Must take three classes from any single aerospace concentration
6. Must be a class from a different concentration area
7. The student must be in the last semester with GPA of 2.0+

Undergraduate Program Director: Dr. Methaq Abed, msabed@utep.edu

Program advisor: Iliana Solis, itrevino2@utep.edu Lower-division Level advisor: Evelyn Torres, etorres28@utep.edu

Lower-division Level advisor: Turner, Ian M, imturner@utep.edu

Revised by Dr. Methaq Abed on May 13, 2022