

Mechanical Engineering Major, Aerospace Engineering Emphasis Plan

The specific course requirements for the MAE preprofessional program and the MAE professional programs are quite extensive and may occasionally change. For these reasons, the complete requirements are not listed here. For more information, contact the department or send an Internet e-mail request to joan.smith@usu.edu.

Required Coursework (126 credits)

Pre-professional Program

Freshman Year (32 credits)

Fall Semester (15 credits)

MATH 1210 (QL) ¹ Calculus I	4
CHEM 1210 ¹ Principles of Chemistry I	4
CHEM 1215 ¹ Chemical Principles Laboratory I	1
University Studies Breadth courses	6

Spring Semester (17 credits)

MATH 1220 (QL) ¹ Calculus II	4
PHYS 2200 ¹ Elements of Mechanics	2
MAE 1200 ¹ Engineering Graphics	2
MAE 2650 ¹ Manufacturing Processes	3
University Studies Breadth courses	6

Sophomore Year (31 credits)

Fall Semester (16 credits)

MATH 2210 (QI) ¹ Multivariable Calculus	3
ENGR 2010 ¹ Engineering Mechanics Statics	2
ETE 2210 ¹ Electrical Engineering for Nonmajors	4
ENGL 2010 (CL2) ¹ Intermediate Writing: Research Writing in a Persuasive Mode	3
PHYS 2220 (BPS/QI) ¹ General Physics—Science and Engineering II	4

Spring Semester (15 credits)

MATH 2250 (QI) ¹ Linear Algebra and Differential Equations	4
MAE 2300 ¹ Thermodynamics I	3
ENGR 2030 ¹ Engineering Mechanics Dynamics	3
ENGR 2140 ¹ Strength of Materials	2
MAE 2160 ¹ Material Science	3

Professional Program

In addition to completing the pre-professional program, students who choose to graduate with the Aerospace Engineering emphasis must complete the following courses as their elective selection.

Junior Year (31 credits)

Fall Semester (16 credits)

MAE 2200 Engineering Numerical Methods I	3
MAE 3040 Mechanics of Solids	3
MAE 3320 Advanced Dynamics	3
MAE 3400 Thermodynamics II	3
MAE 3420 Fluid Mechanics	3
MAE 3600 Engineering Professionalism and Ethics	1

Spring Semester (15 credits)

MAE 2450 Engineering Numerical Methods II	3
MAE 3340 Instrumentation and Measurements	3
MAE 3440 (QI) Heat and Mass Transfer	3
MAE 4300 Machine Design	3
STAT 3000 (QI) Statistics for Scientists	3

Senior Year (31-32 credits)

Fall Semester (17 credits)

MAE 4400 (CI) Fluids/Thermal Laboratory	2
MAE 4800 (CI) Capstone Design I	3
MAE 5300 Vibrations	3
Aerospace Technical course ³	3
Aerospace Technical course ³	3
University Studies Breadth course	3

Spring Semester (14-15 credits)

MAE 4810 Capstone Design II	3
Aerospace Technical courses ³	6
University Studies Depth Humanities and Creative Arts (DHA) and Depth Social Sciences (DSS) courses	5-6

¹These courses are required for admission to the Professional Engineering Program (PEP).

Caution: Even though MAE 2200 and 2450 are lower-division courses and are sometimes taken by sophomores, they are not required for admission to the Professional Program. Hence, they are subject to the Professional Program "one repeat allowed" rule.

²During their senior year, Aerospace Engineering Emphasis students must take a minimum of 9 credits (3 classes) from Group 1 and a total of 12 credits (4 classes) from Group 1 or Group 1 and Group 2 combined. **Group 1:** ECE 5230, MAE 5420, 5500, 5510, 5520, 5540, 5560; **Group 2:** MAE 5020, 5060, 5310, 5440. This provides greater flexibility for students who want a more specific focus.