Aerospace Engineering Specialization – MS:

**Total:** 12 units required
Non-thesis option: 10 or 11 TGS course units + 2 or 1 ME 499 projects units
Thesis option: 9 TGS course units + 3 thesis ME590 units
Minimum of five 400-level courses
Minimum of five ME courses not including ME499 or ME590
Double counting of courses used for BS is not permitted.

**CORE:** (3) For students who have not had equivalent courses at the undergrad level:
- ME 364 Intro to Aerospace Engineering*
- ME 362 Stress Analysis*
- ME 373 Engineering Fluid Dynamics*
*students who have taken equivalent courses at the undergraduate level should petition out of these courses and take replacement courses from the elective buckets)

**ELECTIVES:** (minimum 6)

**PROJECTS:** 1-2 units of ME 499 as separate projects (non-thesis) OR 3 units of ME 590 as a single project (thesis)
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**ELECTIVES:** (minimum 6)

**Materials:** (minimum 1, maximum 2)
- ME 414 Mechanics of Composite Materials I
- ME 495 Theory of Heterogeneous Materials
- MSE 435 High Temperature Materials

**Dynamics & Control:** (minimum 1, maximum 2)
- EE 360 Intro to Feedback Systems
- EE 374 Intro to Digital Control
- ME 390 Introduction to Dynamic Systems
- ME 433 Mechatronics
- ME 495 Mechatronics with Quadrotor Project

**Mechanics:** (minimum 1, maximum 2)
- ME 363 Mechanical Vibrations
- ME 377 Heat Transfer
- ME 413 Experimental Solid Mechanics
- ME 495/CEE 417 Mechanics of Continua I
- ME 495/CEE 415 Theory of Elasticity
- ME 425 Advanced Fluid Mechanics
- ME 495 Aerodynamics & Propulsion

**Computational methods:** (maximum 2)
- ME 327 Finite Element Methods in Mechanics
- ME 378 Applied Computational Fluid Dynamics & Heat Transfer
- ME 423 Intro to Computational Fluid Mechanics
- ME 424 Advanced CFD
- ME 470 High Performance Computing for Multiphysics Applications

**Design & Manufacturing:** (maximum 2)
- ME 341/441 Computational Methods for Engineering Design/ Engineering Optimization
- ME 415 Mechanics of Manufacturing Processes
- ME 395 Industry 4.0 Manufacturing

**General:** (maximum 2)
- 300/400 level courses from McCormick, Physics, Chemistry, Astronomy, or Biology