General Requirements for Graduation Without Thesis – 27 units total with 3.0 GPA overall:
(All classes must be passed with a grade of C or higher)

– 4 units AME 525 Engineering Analysis
– 11 units 500 level courses in AME department
  • Cross listed classes (Ex: SAE 549, CE 507, MASC 551) count as AME department courses
– 12 units Approved 400 or 500 level elective courses
  • Elective courses may be from AME, Math, Physics, or other Engineering Departments
    (ASTE, BME, CE, CHE, CS, EE, ENE, ENGR, INF, ISE, ITP, MASC, PTE, SAE)
– No more than 3 classes (9 units) at 400 level
– Only 3 units of AME 590 Directed Research can be taken as elective credit

Notes: Term course typically offered is (F)=Fall (Sp)= Spring (Su)=Summer + Not Regularly Offered
Ex: AME 436 Energy and Propulsion (Sp) is typically offered in the Spring.

Recommended Courses by Specialization: Note Specializations do not appear on transcripts or diplomas

Aerospace Control Track

Aerospace Control Core Courses:
AME 541 Linear Control Systems II * (F)

Recommended Electives:
AME 451 Linear Controls Systems I (F)(Sp)  AME 544 Computer Control of Mechanical Systems (Sp)  AME 545 Modeling and Control of Distributed Dynamic Systems +
AME 552 Nonlinear Control Systems ^ (Sp)  ASTE 585 Spacecraft Attitude Control (Su) +

* AME 451 is pre-req for AME 541. ^ AME 541 is a pre-req for AME 552.
+ AME 541 is only recommended elective if equivalent not taken during undergrad.

Aerospace Design Track

Aerospace Design Core Courses:
AME 527 Elements of Vehicle and Energy Systems Design (Sp)

Recommended Electives:
AME 408 Computer-Aided Design of Mechanical Systems (F)(Sp)  AME 502 Modern Topics in Aerospace Design (F)  AME 528 Elements of Composite Structure Design +
ASTE 520 Spacecraft System Design (F)

Aerospace Structures Track

Aerospace Structures Core Courses:
AME 529 Aircraft Structures Analysis (Sp)

Recommended Electives:
AME 506 Continuum Mechanics and Thermodynamics (F)
AME 560 Fatigue and Fracture (Sp)
CE 541a Dynamics of Structures (F)

AME 509 Applied Elasticity * (Sp)+  AME 524 Advanced Engineering Dynamics (Sp)  AME 539 Multi-body Dynamics (Sp) +
AME 509 Engineering Vibrations II ^ (F)  CE 507 Mechanics of Solids I (F)  CE 529a Finite Element Analysis (F)(Su)
AME 559 Creep +
AME 585 Aerospace Structures II (Sp)

* AME 403 is pre-req for AME 509. ^ AME 420 is pre-req for AME 521
### Computational Fluid Dynamics Track

#### Computational Fluid Dynamics Core Courses:

- AME 511 Compressible Gas Dynamics (Sp)
- AME 530a Dynamics of Incompressible Fluids (F)
- AME 535a Introduction to Computational Fluid Mechanics * (F)

#### Recommended Electives:

- AME 457 Engineering Fluid Dynamics (F)
- AME 530b Dynamics of Incompressible Fluids (Sp) *
- AME 620 Aero and Hydrodynamic Wave Theory *
- AME 651 Statistical Theories of Turbulence *
- AME 513a Fundamentals and Applications of Combustion I (F)
- AME 579 Numerical modelling of single and multiphase reactive flows *

* AME 526 is recommended prep for AME 535a.

### Aerodynamics/Fluid Dynamics Track

#### Aerodynamics/Fluid Dynamics Core Courses:

- AME 511 Compressible Gas Dynamics (Sp)
- AME 530a Dynamics of Incompressible Fluids (F)

#### Recommended Electives:

- AME 457 Engineering Fluid Dynamics (F)
- AME 516 Convection Processes (Sp) *
- AME 530b Dynamics of Incompressible Fluids (Sp) *

* AME 526 is recommended prep for AME 535a.

### Propulsion Track

#### Propulsion Core Courses:

- AME 511 Compressible Gas Dynamics (Sp)
- AME 436 Energy and Propulsion (Sp)
- ASTE 572 Advanced Spacecraft Propulsion

#### Recommended Electives:

- AME 530a Dynamics of Incompressible Fluids (F)
- AME 457 Fluid Dynamics (F)
- AME 512 Advanced Thermodynamics *

* AME 526 is recommended prep for AME 535a.

### Program of Study Worksheet

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<tr>
<th>Course</th>
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<tr>
<td>AME 525</td>
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*To be approved to pursue the MSAE with Thesis, you must first discuss with an AME Academic Advisor during your first semester in program. An AME faculty thesis advisor must be secured by student and special planning of coursework and units must be discussed with AME Academic Advisor.*