## Master of Science in Mechanical Engineering (31 units)

### Required Core Courses (16 units)

- ME 501A Seminar in Engineering Analysis I (3)
- ME 575 Applied Heat and Mass Transfer (3) - Spring
- ME 584 Modeling and Simulation of Dynamic Systems (3) - Fall
- ME 590 Advanced Fluid Dynamics (3) - Fall
- AM 509 Methods of Applied Mechanics (3) - Spring
- Culminating Experience (1) (ME 697D or ME698D)

### Emphasis Areas (15 units)

#### Aerospace

- **Prerequisites:** ME 309, 370, 375, 390
- **Suggested Background:**
  - ME 470 Thermodynamics II (3)
  - AE 472 Aeropropulsion Systems (3)
  - AE 480 Fundamentals of Aerospace Engineering (3)

- **Graduate Electives:**
  - ME 501B Seminar in Engineering Analysis (3)
  - AE 572 Rocket Propulsion (3)
  - AE 586 Aircraft Design (3)
  - AE 589 Aerodynamics (3)
  - AE 672 Advanced Topics in Aero-Propulsion (3)
  - AE 680 Flight Vehicle Performance (3)
  - AE 689 Advanced Aerodynamics (3)

#### Mechanical Systems Design

- **Prerequisites:** ME 309, 330, 370, 375, 384, 390
- **Suggested Background:**
  - ME 401A Seminar in Engineering Analysis I (3)
  - ME 417 Dynamic Systems I (3)
  - ME 430 Machine Design Applications (3)
  - ME 460 Automotive Engineering (3)

- **Graduate Electives:**
  - ME 501B Seminar in Engineering Analysis (3)
  - ME 515 Mechanical Design with Composites (3)
  - ME 532 Mechanical Design with Polymers (3)
  - ME 630 Computer-Aided Machine Design (3)
  - ME 686A Advanced Modeling, Analysis and Optimization I (3)
  - ME 686B Advanced Modeling, Analysis and Optimization II (3)

#### System Dynamics & Controls

- **Prerequisites:** ME 309, 330, 370, 375, 384, 390
- **Suggested Background:**
  - ME 401A Seminar in Engineering Analysis I (3)
  - ME 417 Dynamic Systems I (3)
  - ME 430 Machine Design Applications (3)
  - ME 460 Automotive Engineering (3)

- **Graduate Electives:**
  - ME 501B Seminar in Engineering Analysis (3)
  - ME 515 Mechanical Design with Composites (3)
  - ME 532 Mechanical Design with Polymers (3)
  - ME 630 Computer-Aided Machine Design (3)
  - ME 686A Advanced Modeling, Analysis and Optimization I (3)
  - ME 686B Advanced Modeling, Analysis and Optimization II (3)

#### Thermofluid Systems

- **Prerequisites:** ME 309, 370, 375, 390
- **Suggested Background:**
  - AM 410 Vibration Analysis (3)
  - ME 415 Kinematics of Mechanisms (3)
  - ME 484 Control of Mechanical Systems (3)

- **Graduate Electives:**
  - ME 501B Seminar in Engineering Analysis (3)
  - ME 583 Thermal Fluids System Design (3)
  - ME 670 Advanced Topics in Thermodynamics (3)
  - ME 675A Conductive and Radiative Heat Transfer (3)
  - ME 675B Convective Heat and Mass Transfer (3)
  - ME 678 Transport Phenomena (3)
  - ME 683 Energy Processes (3)
  - ME 692 Computational Fluid Dynamics (3)

Students who are selecting the thesis or graduate project as their culminating experience must enroll in 6 units of ME 696 Directed Graduate Research (6)

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<th>Culminating Experience (1)</th>
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<tr>
<td>ME 697D Directed Comprehensive Studies/Exam (1) CR/NC</td>
<td>ME 698D Thesis or Graduate Project (1) CR/NC</td>
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**Total Units = 31**