

Tentative Schedule of ME Technical Electives and Graduate Courses
(Course Offerings Subject to Instructor Availability and Student Demand)

| Course | Title | Fall 2023 | Spring 2024 | Fall 2024 | Spring 2025 | Fall 2025 | Spring 2026 | Fall 2026 | Spring 2027 | Fall 2027 | Spring 2028 | Fall 2028 | Spring 2029 |
|------------|---|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| ME 332 | Engineering Materials II | X | | | | X | | | | X | | | |
| ME 353 | Thermodynamics II | | | | | | | | | | | | |
| ME 435/635 | Plastics and Injection Molding Manuf. | | | | | | | | | | | | |
| ME 436/636 | Biopolymers and Biocomposites | | | X | | | | X | | | | X | |
| ME 437/637 | Engineering Ceramics | | | | X | | | | X | | | | X |
| ME 466/666 | Basic Principles of Unmanned Vehicles | | | | | | | | | | | | |
| ME 468/668 | Introduction to Biomechanics | X | | X | | X | | X | | X | | X | |
| ME 469/669 | Energy Storage Technology | | X | | X | | X | | | | | | X |
| ME 470/670 | Renewable Energy Technology | X | | X | | X | | X | | X | | X | |
| ME 471/671 | Experimental Stress Analysis | | | | | | | | | | | | |
| ME 472/672 | Fatigue & Fracture of Metals | | | | X | | | | X | | | | X |
| ME 473/673 | Engineering with Polymeric Materials | X | | X | | X | | X | | X | | X | |
| ME 474/674 | Mechanics of Composite Materials | | X | | X | | X | | X | | X | | X |
| ME 475/675 | Automatic Controls | | X | | X | | X | | X | | X | | X |
| ME 476/676 | Mechatronics | X | | X | | X | | X | | X | | X | |
| ME 477/677 | ME Finite Element Analysis | X | X | X | X | X | X | X | X | X | X | X | X |
| ME 478/678 | Advanced Flow Diagnostics | X | | X | | X | | X | | | | X | |
| ME 479/679 | Fluid Power Systems Design | ABEN | | ABEN | | ABEN | | ABEN | | ABEN | | ABEN | |
| ME 480/680 | Biofluid Mechanics | | | | X | | | | X | | | | X |
| ME 481/681 | Fundamentals of Energy Conversion | | X | | | | | X | | | X | | |
| ME 482/682 | Fuel Cell Science and Engineering | X | | X | | | | | | | | | |
| ME 483/683 | Intro. to Computational Fluid Dynamics | | X | | X | | X | | X | | X | | X |
| ME 484/684 | Gas Turbines | | | | | | | | | | | | |
| ME 485/685 | Heating, Ventilation and Air Conditioning | | X | | X | | X | | X | | X | | X |
| ME 486/686 | Nanotechnology & Nanomaterials | | CCEE | | CCEE | | CCEE | | CCEE | | CCEE | | CCEE |
| ME 487/687 | Internal Combustion Engines | ? | | X | | X | | X | | X | | X | |
| ME 488/688 | Introduction to Aerodynamics | X | | X | | X | | X | | X | | X | |
| ME 489/689 | Vehicle Dynamics | | X | | X | | X | | X | | X | | X |

Approved Tech Electives from other Depts.

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| ABEN 456 | Biobased Energy |
| CPM 473 | Polymer Synthesis |
| CPM 474 | Applied Polymer Science |
| CPM 475 | Coatings' Materials Science |
| CPM 486 | Corrosion & Materials |
| CSCI 485 | Autonomous Command for Robots |
| ECE 461 | Control Systems |
| ECE 463 | Modern Controls |
| ECE 485 | Biomedical Engineering |
| ECE 487 | Cardiovascular Engineering |
| ECE 488 | Cardiovascular Engineering II |
| ENGR 321 | Introduction to Robotics |
| ENGR 379 | Study Abroad |
| ENGR 410 | Entrepreneurship for Engrs & Scientists |
| IME 380 | CAD/CAM for Manufacturing |
| IME 430 | Process Engineering |
| IME 431 | Production Engineering |
| IME 432 | Composite Materials Manufacturing |
| IME 433 | Additive Manufacturing |
| IME 440 | Engineering Economics |
| IME 450 | Systems Engineering and Mgmt. |
| IME 460 | Evaluation of Engineering Data |
| IME 465 | Intro to Machine Learning |
| IME 485 | Industrial & Mfg. Facility Design |
| PHYS 350 | Modern Physics |
| PHYS 355 | Classical Mechanics |
| PHYS 361 | Electromagnetic Theory |
| PHYS 485 | Quantam Mechanics I |

Graduate Level Courses (ME 7XX)

| Course | Title | Fall 2023 | Spring 2024 | Fall 2024 | Spring 2025 | Fall 2025 | Spring 2026 | Fall 2026 | Spring 2027 | Fall 2027 | Spring 2028 | Fall 2028 | Spring 2029 |
|--------|--|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| ME 711 | Advanced Engineering Analysis | X | | X | | X | | X | | X | | X | |
| ME 712 | Advanced Finite Element Analysis | X | | | | X | | | X | | | | |
| ME 717 | Advanced Controls for Mech. Systems | | X | | | | X | | | | X | | |
| ME 720 | Continuum Mechanics | | | | X | | | | X | | | | X |
| ME 721 | Advanced Dynamics | X | | | | X | | | | X | | | |
| ME 722 | Advanced Mechanics of Materials | | | X | | | | X | | | | X | |
| ME 725 | Adv Mech & Failure of Composites | | X | | | | X | | | | X | | |
| ME 726 | Fracture Mechanics | | X | | | | X | | | | X | | |
| ME 728 | Stress Waves in Solids | | | | | | | | | | | | |
| ME 729 | Advanced Vibrations | | | X | | | | X | | | | X | |
| ME 731 | Mechanical Behavior of Materials | | | X | | | | X | | | | X | |
| ME 733 | Polymer Nanocomposites | X | | | | X | | | | X | | | |
| ME 734 | Smart Materials & Structures | | | | X | | | | X | | | | X |
| ME 736 | Advanced Surface Analysis | | X | | | | X | | | | X | | |
| ME 743 | Biomechanics of Impact | | | | | | | | | | | | |
| ME 751 | Advanced Thermodynamics | X | | | | X | | | | X | | | |
| ME 753 | Gas Dynamics | | | X | | | | X | | | | X | |
| ME 754 | Viscous Fluid Flow | | X | | | | X | | | | X | | |
| ME 755 | Fluid Mechanics for Bio/Nanotechnologies | | X | | | | X | | | | X | | |
| ME 761 | Advanced Heat Transfer | | | | X | | | | X | | | | X |
| ME 762 | Applied Multimode Heat Transfer | | | | | | X | | | | X | | |

Courses Cross-Listed with other Departments

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| ME 435/635 | Plastics & Polymer Processing in Manuf. |
| ME 479/679 | Fluid Power Systems Design (ABEN) |
| ME 486/686 | Nanotech. & Nanomaterials (CE) |
| ME 720 | Continuum Mechanics (CE) |

Only THREE Technical Elective courses may be taken from outside the Mechanical Eng. Dept. Cross-listed courses must be taken with an ME prefix in order to count as in-department. If there is not an ME prefix available and the course is being offered by another department, contact the ME office for assistance.

Legend:

X = Planned offering
C = Offered but canceled
? = Tentative offering