## Degree and Study Plan

| | |
|---|---|
| **College** | Engineering |
| **Department** | Mechanical and Industrial Engineering |
| **Cohorts** | 2024 |
| **Degree** | Bachelor of Engineering (B. Eng.) |
| **Major** | Mechanical Engineering (ME) |

## Summary of Credits

| Credit Category | | Courses | Total credits |
|---|---|---|---|
| University Requirements | UR | General Foundation Program<br>Arabic (2 credits)<br>Contemporary Omani State and People (2 credits)<br>Oman and Islamic Civilization or Islamic Culture (2 credits) | **06** |
| University Electives | UE | See list A | **06** |
| College Requirements | CR | See list B | **32** |
| College Electives | CE | See list C | **03** |
| Department Requirements | DR | See list D | **11** |
| Major Requirements | AR | See list E | **63** |
| Major Electives | AE | See list F | **15** |
| **Total Credits** | | | **136** |

| | | |
|---|---|---|
| For reference contact: | Dr. Nasr Al-Hinai | Ext. 1352 |
| HoD: | | Date: 23-4-2024 |
| Dean's Office: | | Date: 02/06/2024 |
| Admission and Registration: | | Date: |

## Important Information

**Student is to follow one of the three schemes of the Degree Plan:**

**Scheme I** is for students who completed the Foundation Program in one regular semester (Fall).
**Scheme II** is for students who completed the Foundation Program in two regular semesters (Fall and Spring).
**Cooperative Training (COOP) Scheme** is optional. It is designed for students who are following Scheme I or II and willing to take a one-year COOP program in semesters 9 and 10.

Students are advised to regularly check the most updated degree plan on the Department's webpage.
This degree plan is last updated on May 21st, 2024.

Course description can be checked on:
https://www.squ.edu.om/engineering/Academic/Undergraduate-Programs/Mechanical-Engineering

# Department of Mechanical and Industrial Engineering
# Mechanical Engineering Study Plan
## Cohort 2024 (Scheme I)

| | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| Scheme I FP1 Fall 2024 | | General Foundation Program | 0 | | UR |
| | | **Total Credits** | **0** | | |

| | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| Scheme I Semester 1 Spring 2025 | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | | **Total Credits** | **14** | | |

| | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| Scheme I Semester 2 | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Eng. | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | | **Total Credits** | **16** | | |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix A.

| | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| Scheme I Semester 3 Spring | | College Elective | 3 | | CE |
| | MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 | DR |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | MEIE3100 | Engineering Mechanics | 3 | PHYS2107, MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | | **Total Credits** | **15** | | |

| | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| Scheme I Semester 4 Fall 2026 | MEIE3102 | Solid Mechanics | 3 | MEIE3100 | AR |
| | MEIE3109 | Product Design | 3 | MEIE3103 | AR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* | AR |
| | MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 | AR |
| | MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 | AR |
| | | **Total Credits** | **15** | | |

| Scheme I Semester 5 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| | MEIE3122 | Machine Dynamics | 3 | MEIE3100 | AR |
| | MEIE3142 | Thermodynamics II | 3 | MEIE3141 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 | AR |
| | MEIE4126 | Instrumentation and Measurement | 3 | MEIE3181, MEIE3281 | AR |
| | | **Total Credits** | **15** | | |

| Scheme I Semester 6 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | MEIE4104 | Design of Machine Elements | 3 | MEIE3102, MEIE3103 | AR |
| | MEIE4141 | Fluid Mechanics | 3 | PHY2108 | AR |
| | MEIE4162 | Manufacturing Processes | 3 | MEIE3162 | AR |
| | | University Elective | 2 | | UE |
| | | **Total Credits** | **14** | | |

| Scheme I Semester 7 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 | AR |
| | MEIE4144 | Heat Transfer | 3 | MEIE4141, MEIE3141 | AR |
| | MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281, (ENGR2217 or COMP2002) | AR |
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 | AR |
| | | **Total Credits** | **14** | | |

| Scheme I Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | | **Total Credits** | **0** | | |

| Scheme I Semester 8 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193# | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | | **Total Credits** | **16** | | |

# MEIE5193 is offered in Fall semesters ONLY.

| Scheme I Semester 9 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| | | **Total Credits** | **17** | | |

# Department of Mechanical and Industrial Engineering
# Mechanical Engineering Study Plan
## Cohort 2024 (Scheme II)

| Scheme II FP1 Fall 2024 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | General Foundation Program | 0 | | UR |
| | | **Total Credits** | **0** | | |

| Scheme II FP2 Spring 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | General Foundation Program | 0 | | UR |
| | | **Total Credits** | **0** | | |

| Scheme II Semester 1 Fall 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | | **Total Credits** | **14** | | |

| Scheme II Semester 2 Spring 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Eng. | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | | **Total Credits** | **16** | | |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix **A.**

| Scheme II Summer 2026*** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | University Elective | 2 | | UE |
| | | College Elective | 3 | | CE |
| | | **Total Credits** | **5** | | |

*** Offering the summer semester is subject to the availability of the courses.

| Scheme II Semester 3 Fall 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | MEIE3100 | Engineering Mechanics | 3 | PHYS2107, MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* | AR |
| | MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 | DR |
| | | **Total Credits** | **15** | | |

| Scheme II Semester 4 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| | MEIE3102 | Solid Mechanics | 3 | MEIE3100 | AR |
| | MEIE3109 | Product Design | 3 | MEIE3103 | AR |
| | MEIE3142 | Thermodynamics II | 3 | MEIE3141 | AR |
| | MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 | AR |
| | MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 | AR |
| | | **Total Credits** | **18** | | |

| Scheme II Semester 5 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | MEIE3122 | Machine Dynamics | 3 | MEIE3100 | AR |
| | MEIE4104 | Design of Machine Elements | 3 | MEIE3102, MEIE3103 | AR |
| | MEIE4141 | Fluid Mechanics | 3 | PHYS2108 | AR |
| | MEIE4162 | Manufacturing Processes | 3 | MEIE3162 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 | AR |
| | | **Total Credits** | **18** | | |

| Scheme II Semester 6 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 | AR |
| | MEIE4126 | Instrumentation and Measurements | 3 | MEIE3181, MEIE3281 | AR |
| | MEIE4144 | Heat Transfer | 3 | MEIE4141, MEIE3141 | AR |
| | MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281, (ENGR2217 or COMP2002) | AR |
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 | AR |
| | | **Total Credits** | **17** | | |

| Scheme II Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | | **Total Credits** | **0** | | |

| Scheme II Semester 7 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193[#] | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | | **Total Credits** | **16** | | |

[#] MEIE5193 is offered in Fall semesters ONLY.

| Scheme II Semester 8 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| | | **Total Credits** | **17** | | |

# Department of Mechanical and Industrial Engineering
# Mechanical Engineering Study Plan

## Cohort 2024 (COOP Scheme)

- The cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** Students can enroll in this scheme starting from Semester **8** (Fall 2028) after the foundation program.
- **Scheme II** students can enroll in this scheme starting from Semester **7** (Fall 2028) after the foundation program.
- For enrollment terms, conditions, and registration procedure, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices.

| COOP Scheme **Semester 1** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | MEIE5001 | Mechanical Program Cooperative Training I | 0 | ENGR4007* | AE |
| | | **Total Credits** | **0** | | |

| COOP Scheme **Semester 2** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE5002 | Mechanical Program Cooperative Training II | 6 | MEIE5001 | AE |
| | | **Total Credits** | **6** | | |

| COOP Scheme **Semester 3** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193‡ | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | | **Total Credits** | **13** | | |

‡ MEIE5193 is offered in Fall semesters ONLY.

| COOP Scheme **Semester 4** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---|---|---|---|---|---|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | | **Total Credits** | **14** | | |

**Degree Plan**
**Cohort 2024**
**Appendix A**

## University Requirements for Non-Arabic or Non-Oman Students

| No. | Cohorts 2018 and before | Credits | Cohorts 2018 and after | Credits | Notes |
|---|---|---|---|---|---|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non-Omanis |
| 4 | | ARAB1019 | | 3 | For non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST A**

## Uiversity Electives (UE) 6 Credits

Engineering students must register for a humanity or social course (non-scientific and non-linguistic course) from any college as a University Elective. The list of University Elective Courses allowed for Engineering students can be found via the following link:

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST B**
**College Requirements (CR) 32 Credits**

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite * |
|---|---|---|---|
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC2160 |
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science and Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra and Multivariate Calculus | 3 | MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics of Engineering II | 4 | PHYS2107 |
| CHEM1071 | General Chemistry for Engineering | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| | **Total** | **32** | |

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST C**
**College Electives (CE) 3 Credits**

The course will be offered from the following courses subject to availability

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|---|---|---|---|
| COMP2002 | Introduction to Computer Programming for Engineers | 3 | |
| ENGR2217 | Programming for Engineers | 3 | |

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST D**
**Department Requirements (DR) 11 Credits**

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|---|---|---|---|
| MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 |
| MEIE4285 | Engineering Economics | 3 | MATH2107 |
| MEIE3103 | Engineering Tools and Graphics | 2 | |
| MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 |
| | **Total** | 11 | |

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST E**
**Major Requirements (AR) 63 Credits**

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|---|---|---|---|
| MEIE3100 | Engineering Mechanics | 3 | PHYS2107 |
| MEIE3102 | Solid Mechanics | 3 | MEIE3100 |
| MEIE3109 | Product Design | 3 | MEIE3103 |
| MEIE3122 | Machine Dynamics | 3 | MEIE3100 |
| MEIE3141 | Thermodynamics I | 3 | PHYS2108* |
| MEIE3142 | Thermodynamics II | 3 | MEIE3141 |
| MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 |
| MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 |
| MEIE4104 | Design of Machine Elements | 3 | MEIE3100, MEIE3103 |
| MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 |
| MEIE4123 | Control Systems Design | 2 | MEIE4122 |
| MEIE4126 | Instrumentation and Measurements | 3 | MEIE3181, MEIE3281 |
| MEIE4141 | Fluid Mechanics | 3 | PHYS2108 |
| MEIE4144 | Heat Transfer | 3 | MEIE3141, MEIE4141 |
| MEIE4162 | Manufacturing Processes | 3 | MEIE3162 |
| MEIE4163 | Modern Materials and Manufacturing | 3 | MEIE4162 |
| MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 |
| MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281 and (ENGR2217 or COOMP2002) |
| MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 |
| MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 |
| MEIE5193 | Project I | 2 | MEIE4104, MEIE4144 |
| MEIE5194 | Project II | 3 | MEIE5193 |
| | **Total** | 63 | |

Department of Mechanical and Industrial Engineering
Degree Plan
**Cohort 2024**
**LIST F**
**Major Electives (AE) 15 Credits**

## NOTES

- One 4000 or 5000 level course can be taken from another engineering program with the approval of the academic advisor and HoD.
- Students of Scheme I or II should register for FIVE elective courses.

Students of the COOP Scheme should register: Cooperative Training courses (MEIE5001 and MEIE5002) and THREE elective courses.

- The elective courses will be offered from the following and additional courses might be offered subject to availability.

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite * |
|---|---|---|---|
| MEIE5001 | Mechanical Program Cooperative Training I | 0 | ENGR4007* |
| MEIE5002 | Mechanical Program Cooperative Training II | 6 | MEIE5001 |
| MEIE5013 | Refrigeration and Air Conditioning | 3 | MEIE4144, MEIE3142 |
| MEIE5128 | Theory and Practice of Rotor Dynamics | 3 | MEIE3122 |
| MEIE5019 | Internal Combustion Engines and Control | 3 | MEIE3142 |
| MEIE5101 | Engineering Vibration | 3 | MEIE3100 |
| MEIE5106 | Pressure Vessel and Piping System Design | 3 | MEIE4104 |
| MEIE5110 | Applied Finite Element Methods | 3 | MEIE3102 |
| MEIE5121 | Modeling and Simulation of Engineering Systems | 3 | MATH4174 |
| MEIE5122 | Applied Multibody Dynamics | 3 | MEIE3122 |
| MEIE5124 | Condition Monitoring and Diagnosis | 3 | MEIE3122 |
| MEIE5127 | Analysis and Design of Control Systems | 3 | MEIE4122 or MCTE4450 |
| MEIE5129 | System Models and Identification | 3 | MEIE3281 |
| MEIE5130 | Mechatronics Systems and Applications | 3 | MEIE4126, MEIE4104 |
| MEIE5131 | Legged Locomotion of Robots and Animals | 3 | MEIE3122 |
| MEIE5132 | Smart Materials and Structures | 3 | MEIE4126 or MCTE4145 |
| MEIE5141 | Solar Energy Systems | 3 | MEIE4144 |
| MEIE5142 | Solar Thermal Processes | 3 | MEIE4144 |
| MEIE5146 | Renewable Energy | 3 | MEIE3142 or MCTE4230 |
| MEIE5147 | Energy Conservation and Management | 3 | MEIE3141 |
| MEIE5148 | Desalination | 3 | MEIE4144 |
| MEIE5151 | Fundamentals of Turbomachinery | 3 | MEIE3142, MEIE4141 |
| MEIE5152 | Fundamental of Thermal Energy Storage Sys. | 3 | MEIE3142 |
| MEIE5162 | Corrosion Engineering | 3 | MEIE4162 |
| MEIE5165 | Introduction to Fracture Mechanics | 3 | MEIE3162, (MEIE3102 or MCTE3230) |
| MEIE5166 | Introduction to Nanotechnology Engineering | 3 | MEIE4162 |
| MEIE5167 | Mechanics of Composite Materials | 3 | MEIE3162, (MEIE3102 or MCTE3230) |
| MEIE5168 | Introduction to Polymers | 3 | MEIE3161 or MEIE3162 or MEIE4263 |
| MEIE5169 | Fundamentals of Sustainable Engineering | 3 | MEIE4161, MEIE4162, MEIE4262, MEIE4163 |
| MEIE5182 | Fundamentals of Biomechanics | 3 | MEIE3102, MEIE3100 |
| MEIE5183 | Emerging Technologies in ME | 3 | MEIE4188 or MEIE4288 |
| MEIE5184 | Bioinspired Design for Engineers | 3 | |
| MEIE5190 | Special Topics | 3 | |
| MEIE5264 | CAD/CAM | 3 | MEIE3102, MEIE3103 |
| MEIE5233 | Maintenance and Reliability Engineering | 3 | MEIE3281 |
| MEIE5287 | Project Management | 3 | MEIE4161 |