



| Degree and Study Plan |                                       |
|-----------------------|---------------------------------------|
| College               | Engineering                           |
| Department            | Mechanical and Industrial Engineering |
| Cohorts               | 2019                                  |
| Degree                | Bachelor of Engineering (B. Eng.)     |
| Major                 | Mechanical Engineering (ME)           |



| Summary of Credits        |                                                |                     |
|---------------------------|------------------------------------------------|---------------------|
| Credit Category           | Courses                                        | Total credits hours |
| University Requirements   | (UR) General Foundation Program                |                     |
|                           | Arabic                                         | 2                   |
|                           | Contemporary Omani State and People            | 2                   |
|                           | Oman & Islamic Civilization or Islamic Culture | 2                   |
| University Electives      | (UE) See List A                                | 6                   |
| College Requirements      | (CR) See list B                                | 32                  |
| College Electives         | (CE) See list C                                | 3                   |
| Departmental Requirements | (DR) See list D                                | 25                  |
| Major Requirements        | (AR) See list E                                | 52                  |
| Major Electives           | (AE) See list F                                | 12                  |
| Total Credits             |                                                | 136                 |

#### Important Information:

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

1. **Scheme I** is for students who completed the Foundation Program in one regular semester (Fall).
2. **Scheme II** is for students who completed the Foundation Program in two regular semester (Fall and Spring).
3. **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.

For reference contact: Dr. Abdullah Al Shabibi Ext. 1352

HoD:

Date: 9/9/2020

Dean's Office:

Date:

Admission and Registration:

Date:

# Department of Mechanical and Industrial Engineering

## Mechanical Engineering Study Plan: **2019 Cohort (Scheme I)**

| Scheme I<br>FP1<br>Fall 2019 | Course Code | Course Title               | Cr. | Pre-req./Co-requisite* | Cat. | 0        |
|------------------------------|-------------|----------------------------|-----|------------------------|------|----------|
|                              |             | General Foundation Program | 0   |                        | UR   |          |
| <b>Total Credits</b>         |             |                            |     |                        |      | <b>0</b> |

| Scheme I<br>Semester 1<br>Spring 2020 | Course Code          | Course Title                                   | Cr. | Pre-req./Co-requisite*                                                      | Cat. | 14        |
|---------------------------------------|----------------------|------------------------------------------------|-----|-----------------------------------------------------------------------------|------|-----------|
|                                       | HIST1010 or ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2   |                                                                             | UR   |           |
|                                       | ENGR1501             | Introduction to Engineering                    | 1   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR   |           |
|                                       | ENGR1600             | Workshop I                                     | 1   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR   |           |
|                                       | CHEM1071             | General Chemistry for Engineering              | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR   |           |
|                                       | LANC2160             | English for Engineering I                      | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR   |           |
|                                       | MATH2107             | Calculus I                                     | 4   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR   |           |
| <b>Total Credits</b>                  |                      |                                                |     |                                                                             |      | <b>14</b> |

| Scheme I<br>Semester 2<br>Fall 2020 | Course Code | Course Title                        | Cr. | Pre-req./Co-requisite*                                                                 | Cat. | 16        |
|-------------------------------------|-------------|-------------------------------------|-----|----------------------------------------------------------------------------------------|------|-----------|
|                                     |             | University Elective                 | 2   |                                                                                        | UE   |           |
|                                     | ARAB1060**  | Arabic                              | 2   |                                                                                        | UR   |           |
|                                     | SOCY1005**  | Contemporary Omani State and People | 2   |                                                                                        | UR   |           |
|                                     | LANC2161    | English for Engineering II          | 3   | LANC2160                                                                               | CR   |           |
|                                     | MATH2108    | Calculus II                         | 3   | MATH2107                                                                               | CR   |           |
|                                     | PHYS2107    | Physics for Engineering I           | 4   | MATH2107*, FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR   |           |
| <b>Total Credits</b>                |             |                                     |     |                                                                                        |      | <b>16</b> |

| Scheme I<br>Semester 3<br>Spring 2021 | Course Code | Course Title                     | Cr. | Pre-req./Co-requisite*                                                      | Cat. | 17        |
|---------------------------------------|-------------|----------------------------------|-----|-----------------------------------------------------------------------------|------|-----------|
|                                       |             | College Elective                 | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102) | CE   |           |
|                                       | MEIE3281    | Probability & Statistics for     | 3   | MATH2107                                                                    | DR   |           |
|                                       | MEIE2181    | Workshop II                      | 1   | ENGR1600                                                                    | DR   |           |
|                                       | PHYS2108    | Physics for Engineering II       | 4   | PHYS2107                                                                    | CR   |           |
|                                       | MEIE3107    | Engineering Drawing and Graphics | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | DR   |           |
|                                       | MEIE2102    | Statics                          | 3   | PHYS2107                                                                    | AR   |           |
| <b>Total Credits</b>                  |             |                                  |     |                                                                             |      | <b>17</b> |

| Scheme I<br>Semester 4<br>Fall 2021 | Course Code | Course Title              | Cr. | Pre-req./Co-requisite* | Cat. | 15        |
|-------------------------------------|-------------|---------------------------|-----|------------------------|------|-----------|
|                                     | MEIE3181    | Electromechanical Systems | 3   | MATH2107, PHYS2108     | DR   |           |
|                                     | MEIE3102    | Solid Mechanics           | 3   | MEIE2102               | DR   |           |
|                                     | MEIE3109    | Product Design            | 3   | MEIE3107               | AR   |           |
|                                     | MEIE3121    | Dynamics                  | 3   | MEIE2102               | AR   |           |
|                                     | MEIE3141    | Thermodynamics I          | 3   | PHYS2108*              | AR   |           |
| <b>Total Credits</b>                |             |                           |     |                        |      | <b>15</b> |

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

| January | Course Code   | Course Title          | Cr. | Pre-req./Co-requisite* | Cat. |
|---------|---------------|-----------------------|-----|------------------------|------|
|         | ENGR3006      | Industrial Training I | 0   | ENGR1600, MEIE3107     | CR   |
|         | Total Credits |                       |     |                        | 0    |

| Scheme I<br>Semester 5<br>Spring 2022 | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|---------------|------------------------------------------------------|-----|------------------------|------|
|                                       | MATH3171      | Linear Algebra & Multivariate Calculus for Engineers | 3   | MATH2108, LANC2161     | CR   |
|                                       | MEIE3161      | Materials Science                                    | 3   | CHEM1071               | DR   |
|                                       | MEIE3122      | Machine Dynamics                                     | 3   | MEIE3121               | AR   |
|                                       | MEIE3142      | Thermodynamics II                                    | 3   | MEIE3141               | AR   |
|                                       | MEIE4125      | Instrumentation &                                    | 4   | MEIE3181, MEIE3281     | AR   |
|                                       | Total Credits |                                                      |     |                        | 16   |

| Scheme I<br>Semester 6<br>Fall 2022 | Course Code   | Course Title          | Cr. | Pre-req./Co-requisite*           | Cat. |
|-------------------------------------|---------------|-----------------------|-----|----------------------------------|------|
|                                     | MEIE4183      | Numerical Methods for | 3   | (COMP2002 or ENGR2217), MATH3171 | AR   |
|                                     | MEIE4102      | Machine Design I      | 3   | MEIE3102, MEIE3107               | AR   |
|                                     | MEIE4141      | Fluid Mechanics       | 3   | PHY2108                          | AR   |
|                                     | MEIE4161      | Engineering Materials | 3   | MEIE3161                         | AR   |
|                                     |               | University Elective   | 2   |                                  | UE   |
|                                     | Total Credits |                       |     |                                  | 14   |

| Scheme I<br>Semester 7<br>Spring 2023 | Course Code   | Course Title                         | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|---------------|--------------------------------------|-----|------------------------|------|
|                                       | MEIE4285      | Engineering Economics                | 3   | MATH2107               | DR   |
|                                       | MATH4174      | Differential Equations for Engineers | 3   | MATH2108, LANC2161     | CR   |
|                                       | MEIE4144      | Heat Transfer                        | 3   | MEIE4141, MEIE3141     | AR   |
|                                       | MEIE5149      | Capstone Design                      | 3   | MEIE3109, MEIE4102     | AR   |
|                                       | MEIE4191      | Seminar                              | 1   |                        | AR   |
|                                       | Total Credits |                                      |     |                        | 13   |

| Scheme I<br>Summer<br>2023 | Course Code   | Course Title           | Cr. | Pre-req./Co-requisite* | Cat. |
|----------------------------|---------------|------------------------|-----|------------------------|------|
|                            | ENGR4006      | Industrial Training II | 0   | ENGR3006               | CR   |
|                            | Total Credits |                        |     |                        | 0    |

| Scheme I<br>Semester 8<br>Fall 2023 | Course Code   | Course Title                  | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|---------------|-------------------------------|-----|------------------------|------|
|                                     | MEIE4122      | Engineering Systems & Control | 3   | MEIE3121, MATH4174     | AR   |
|                                     | MEIE4262      | Manufacturing Processes       | 3   | MEIE3161               | DR   |
|                                     | MEIE5288      | Innovation and                | 3   | MEIE4285               | DR   |
|                                     | MEIE5193      | Project I                     | 2   | MEIE4102, MEIE4144     | AR   |
|                                     | MEIE5xxx      | Major Elective 1              | 3   |                        | AE   |
|                                     | MEIE5xxx      | Major Elective 2              | 3   |                        | AE   |
|                                     | Total Credits |                               |     |                        | 17   |

| Scheme I<br>Semester 9<br>Spring 2024 | 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   |
|                                       | Total Credits |                           |     |                              | 14   |

# Department of Mechanical and Industrial Engineering

## Mechanical Engineering Study Plan: **2019 Cohort (Scheme II)**

| Scheme II<br>FP1<br>Fall 2019 | Course Code          | Course Title               | Cr. | Pre-req./Co-requisite* | Cat.     |
|-------------------------------|----------------------|----------------------------|-----|------------------------|----------|
|                               |                      | General Foundation Program | 0   |                        | UR       |
|                               | <b>Total Credits</b> |                            |     |                        | <b>0</b> |

| Scheme II<br>FP2<br>Spring 2020 | Course Code          | Course Title               | Cr. | Pre-req./Co-requisite* | Cat.     |
|---------------------------------|----------------------|----------------------------|-----|------------------------|----------|
|                                 |                      | General Foundation Program | 0   |                        | UR       |
|                                 | <b>Total Credits</b> |                            |     |                        | <b>0</b> |

| Scheme II<br>Semester 1<br>Fall 2020 | Course Code          | Course Title                                   | Cr. | Pre-req./Co-requisite*                                                      | Cat.      |
|--------------------------------------|----------------------|------------------------------------------------|-----|-----------------------------------------------------------------------------|-----------|
|                                      | HIST1010 or ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2   |                                                                             | UR        |
|                                      | ENGR1501             | Introduction to Engineering                    | 1   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR        |
|                                      | ENGR1600             | Workshop I                                     | 1   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR        |
|                                      | CHEM1071             | General Chemistry for Engineering              | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR        |
|                                      | LANC2160             | English for Engineering I                      | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                         | CR        |
|                                      | MATH2107             | Calculus I                                     | 4   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR        |
|                                      | <b>Total Credits</b> |                                                |     |                                                                             | <b>14</b> |

| Scheme II<br>Semester 2<br>Spring 2021 | 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        |
|                                        | MATH2108             | Calculus II                         | 3   | MATH2107                                                                               | CR        |
|                                        | PHYS2107             | Physics for Engineering I           | 4   | MATH2107*, FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) | CR        |
|                                        | <b>Total Credits</b> |                                     |     |                                                                                        | <b>16</b> |

| Scheme II<br>Summer<br>2021 | Course Code          | Course Title        | Cr. | Pre-req./Co-requisite* | Cat.     |
|-----------------------------|----------------------|---------------------|-----|------------------------|----------|
|                             |                      | University Elective | 2   |                        | UE       |
|                             |                      | College Elective    | 3   |                        | CE       |
|                             | <b>Total Credits</b> |                     |     |                        | <b>5</b> |

| Scheme II<br>Semester 3<br>Fall 2021 | Course Code          | Course Title                           | Cr. | Pre-req./Co-requisite*                              | Cat.      |
|--------------------------------------|----------------------|----------------------------------------|-----|-----------------------------------------------------|-----------|
|                                      | PHYS2108             | Physics for Engineering II             | 4   | PHYS2107                                            | CR        |
|                                      | MEIE3281             | Probability & Statistics for Engineers | 3   | MATH2107                                            | DR        |
|                                      | MEIE3107             | Engineering Drawing and Graphics       | 3   | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) | DR        |
|                                      | MEIE2181             | Workshop II                            | 1   | ENGR1600                                            | DR        |
|                                      | MEIE2102             | Statics                                | 3   | PHYS2107                                            | AR        |
|                                      | MEIE3141             | Thermodynamics I                       | 3   | PHYS2108*                                           | AR        |
|                                      | <b>Total Credits</b> |                                        |     |                                                     | <b>17</b> |

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

| January                                | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 0  |
|----------------------------------------|---------------|------------------------------------------------------|-----|----------------------------------|------|----|
|                                        | ENGR3006      | Industrial Training I                                | 0   | ENGR1600, MEIE3107               | CR   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Semester 4<br>Spring 2022 | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 18 |
|                                        | MATH3171      | Linear Algebra & Multivariate Calculus for Engineers | 3   | MATH2108, LANC2161               | CR   |    |
|                                        | MEIE3102      | Solid Mechanics                                      | 3   | MEIE2102                         | DR   |    |
|                                        | MEIE3109      | Product Design                                       | 3   | MEIE3107                         | AR   |    |
|                                        | MEIE3161      | Materials Science                                    | 3   | CHEM1071                         | DR   |    |
|                                        | MEIE3121      | Dynamics                                             | 3   | MEIE2102                         | AR   |    |
|                                        | MEIE3142      | Thermodynamics II                                    | 3   | MEIE3141                         | AR   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Semester 5<br>Fall 2022   | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 18 |
|                                        | MEIE3122      | Machine Dynamics                                     | 3   | MEIE3121                         | AR   |    |
|                                        | MEIE3181      | Electromechanical Systems                            | 3   | MATH2107, PHYS2108               | DR   |    |
|                                        | MEIE4183      | Numerical Methods for Engineers                      | 3   | (COMP2002 or ENGR2217), MATH3171 | AR   |    |
|                                        | MEIE4141      | Fluid Mechanics                                      | 3   | PHYS2108                         | AR   |    |
|                                        | MEIE4161      | Engineering Materials                                | 3   | MEIE3161                         | AR   |    |
|                                        | MEIE4102      | Machine Design I                                     | 3   | MEIE3102, MEIE3107               | AR   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Semester 6<br>Spring 2023 | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 17 |
|                                        | MATH4174      | Differential Equations for                           | 3   | MATH2108, LANC2161               | CR   |    |
|                                        | MEIE4144      | Heat Transfer                                        | 3   | MEIE4141, MEIE3141               | AR   |    |
|                                        | MEIE4285      | Engineering Economics                                | 3   | MATH2107                         | DR   |    |
|                                        | MEIE4125      | Instrumentation & Measurement                        | 4   | MEIE3181, MEIE3281               | AR   |    |
|                                        | MEIE4191      | Seminar                                              | 1   |                                  | AR   |    |
|                                        | MEIE5149      | Capstone Design                                      | 3   | MEIE3109, MEIE4102               | AR   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Summer<br>2023            | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 0  |
|                                        | ENGR4006      | Industrial Training II                               | 0   | ENGR3006                         | CR   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Semester 7<br>Fall 2023   | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 17 |
|                                        | MEIE4262      | Manufacturing Processes                              | 3   | MEIE3161                         | DR   |    |
|                                        | MEIE4122      | Engineering Systems & Control                        | 3   | MEIE3121, MATH4174               | AR   |    |
|                                        | MEIE5288      | Innovation and                                       | 3   | MEIE4285                         | DR   |    |
|                                        | MEIE5193      | Project I                                            | 2   | MEIE4102, MEIE4144               | AR   |    |
|                                        | MEIE5xxx      | Major Elective 1                                     | 3   |                                  | AE   |    |
|                                        | MEIE5xxx      | Major Elective 2                                     | 3   |                                  | AE   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |
| Scheme II<br>Semester 8<br>Spring 2024 | Course Code   | Course Title                                         | Cr. | Pre-req./Co-requisite*           | Cat. | 14 |
|                                        |               | 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   |    |
|                                        | Total Credits |                                                      |     |                                  |      |    |

# Department of Mechanical and Industrial Engineering

## Mechanical Engineering Study Plan: **2019 Cohort (COOP Scheme)**

- The cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** Students can enroll in this scheme starting from Semester **8** (Fall 2023) after the foundation program.
- **Scheme II** students can enroll in this scheme starting from Semester **7** (Fall 2023) 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<br>COOP Semester 1 | Course Code          | Course Title                                 | Cr. | Pre-req./Co-requisite* | Cat.     |
|--------------------------------|----------------------|----------------------------------------------|-----|------------------------|----------|
|                                | ENGR4006             | Industrial Training II                       | 0   | ENGR3006               | CR       |
|                                | MEIE5001             | Mechanical Program<br>Cooperative Training I | 0   | ENGR4006*              | AE       |
|                                | <b>Total Credits</b> |                                              |     |                        | <b>0</b> |

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

| COOP Scheme<br>COOP Semester 3 | Course Code          | Course Title                    | Cr. | Pre-req./Co-requisite* | Cat.      |
|--------------------------------|----------------------|---------------------------------|-----|------------------------|-----------|
|                                | MEIE4262             | Manufacturing Processes         | 3   | MEIE3161               | DR        |
|                                | MEIE4122             | Engineering Systems & Control   | 3   | MEIE3121, MATH4174     | AR        |
|                                | MEIE5288             | Innovation and Entrepreneurship | 3   | MEIE4285               | DR        |
|                                | MEIE5193             | Project I                       | 2   | MEIE4102, MEIE4144     | AR        |
|                                | MEIE5xxx             | Major Elective 1                | 3   |                        | AE        |
|                                | <b>Total Credits</b> |                                 |     |                        | <b>14</b> |

| COOP Scheme<br>COOP 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        |
|                                | <b>Total Credits</b> |                           |     |                              | <b>11</b> |

Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
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.<br>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 2019  
LIST A: UNIVERSITY ELECTIVES (UE)

Engineering students must register a humanity or social course (non-scientific & non-linguistic course) from any college as a University Elective. However, students are **NOT** allowed to register the following University Electives listed below:

| No. | Course Code | Course Title                            | College                                     |
|-----|-------------|-----------------------------------------|---------------------------------------------|
| 1   | ENGGL1523   | English Writing Skills                  | College of Arts                             |
| 2   | ENGR1524    | English Reading Skills                  | College of Arts                             |
| 3   | ENGL1525    | English Speaking and Listening Skills   | College of Arts                             |
| 4   | CHEM1100    | Everyday Chemistry                      | College of Science                          |
| 5   | COMP1210    | Web Site Development                    | College of Science                          |
| 6   | CROP2020    | Lab and Safety                          | College of Agriculture and Marine Science   |
| 7   | MNGT2500    | Entrepreneurship Creat. and Invo.       | College of Economics and Political Sciences |
| 8   | MNGT2501    | Entrepreneurship                        | College of Economics and Political Sciences |
| 9   | ECON1050    | Introduction to Economics               | College of Economics and Political Sciences |
| 10  | CHPE1000    | Renewable Energy                        | College of Engineering                      |
| 11  | ECCE1000    | Electricity Generation from Solar PV    | College of Engineering                      |
| 12  | MEIE1000    | Solar Calculations and Energy           | College of Engineering                      |
| 13  | MCTE1000    | Eduainment Robotic                      | College of Engineering                      |
| 14  | ECCE2000    | Introduction to Artificial Intelligence | College of Engineering                      |

Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
LIST B: COLLEGE REQUIREMENTS (CR)

| Code         | Title                                  | Credits   | Pre-requisite / Co-requisite *                                                         |
|--------------|----------------------------------------|-----------|----------------------------------------------------------------------------------------|
| LANC2160     | English for Engineering I              | 3         | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                                    |
| LANC2161     | English for Engineering II             | 3         | LANC2160                                                                               |
| ENGR1501     | Introduction to Engineering            | 1         | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                                    |
| ENGR1600     | Workshop I                             | 1         | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604)                                    |
| MATH2107     | Calculus I                             | 4         | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109)            |
| MATH2108     | Calculus II                            | 3         | MATH 2107                                                                              |
| MATH3171     | Linear Algebra & Multivariate Calculus | 3         | MATH2108, LANC2161                                                                     |
| MATH4174     | Differential Equations for Engineers   | 3         | MATH2108, LANC2161                                                                     |
| PHYS2107     | Physics for Engineering I              | 4         | MATH2107*, FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109) |
| PHYS2108     | Physics of Engineering II              | 4         | PHYS 2107                                                                              |
| CHEM1071     | General Chemistry for Engineering      | 3         | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPMT (0105 or 0109)            |
| ENGR3006     | Industrial Training I                  | 0         | ENGR1600, MEIE3107                                                                     |
| ENGR4006     | Industrial Training II                 | 0         | ENGR3006                                                                               |
| <b>Total</b> |                                        | <b>32</b> |                                                                                        |

Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
LIST C: COLLEGE ELECTIVES (CE)

**One course - 3 credit hours:**

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

| Code     | Title                                              | Credits | Pre-requisite / Co-requisite*                                               |
|----------|----------------------------------------------------|---------|-----------------------------------------------------------------------------|
| COMP2002 | Introduction to Computer Programming for Engineers | 3       | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102) |
| ENGR2217 | Programming for Engineers                          | 3       | FPEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) and FPCS (0101 or 0102) |



Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
LIST D: DEPARTMENT REQUIREMENTS (DR)

| Code         | Title                                  | Credits   | Pre-requisite / Co-requisite*                       |
|--------------|----------------------------------------|-----------|-----------------------------------------------------|
| MEIE2181     | Workshop II                            | 1         | ENGR1600                                            |
| MEIE3107     | Engineering Drawings and Graphics      | 3         | FEEL (0560 or 0600 or 0601 or 0602 or 0603 or 0604) |
| MEIE3161     | Materials Science                      | 3         | CHEM1071                                            |
| MEIE3102     | Solid Mechanics                        | 3         | MEIE2102                                            |
| MEIE4262     | Manufacturing Processes                | 3         | MEIE3161                                            |
| MEIE3281     | Probability & Statistics for Engineers | 3         | MATH2107                                            |
| MEIE4285     | Engineering Economics                  | 3         | MATH2107                                            |
| MEIE5288     | Innovation and Entrepreneurship        | 3         | MEIE4285                                            |
| MEIE3181     | Electromechanical Systems              | 3         | MATH2107, PHYS2108                                  |
| <b>Total</b> |                                        | <b>25</b> |                                                     |

Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
LIST E: MAJOR REQUIREMENTS (AR)

| Code         | Title                           | Credits   | Pre-requisite / Co-requisite*       |
|--------------|---------------------------------|-----------|-------------------------------------|
| MEIE2102     | Statics                         | 3         | PHYS2107                            |
| MEIE3121     | Dynamics                        | 3         | MEIE2102                            |
| MEIE3141     | Thermodynamics I                | 3         | PHYS2108*                           |
| MEIE3109     | Product Design                  | 3         | MEIE3107                            |
| MEIE3122     | Machine Dynamics                | 3         | MEIE3121                            |
| MEIE3142     | Thermodynamics II               | 3         | MEIE3141                            |
| MEIE4102     | Machine Design I                | 3         | MEIE3102, MEIE3107                  |
| MEIE4191     | Seminar                         | 1         |                                     |
| MEIE4141     | Fluid Mechanics                 | 3         | PHYS2108                            |
| MEIE4125     | Instrumentation & Measurements  | 4         | MEIE3181, MEIE3281                  |
| MEIE4183     | Numerical Methods for Engineers | 3         | (COMP2002 or ENGR2217),<br>MATH3171 |
| MEIE4122     | Engineering Systems & Control   | 3         | MEIE3121, MATH4174                  |
| MEIE4144     | Heat Transfer                   | 3         | MEIE4141, MEIE3141                  |
| MEIE5149     | Capstone Design                 | 3         | MEIE3109, MEIE4102                  |
| MEIE4161     | Engineering Materials           | 3         | MEIE4161                            |
| MEIE5145     | Design of Thermal Systems       | 3         | MEIE4144, MEIE3142, MEIE4183        |
| MEIE5193     | Project I                       | 2         | MEIE4102, MEIE4144                  |
| MEIE5194     | Project II                      | 3         | MEIE5193                            |
| <b>Total</b> |                                 | <b>52</b> |                                     |

Department of Mechanical and Industrial Engineering  
Degree Plan: Cohort 2019  
LIST F: MAJOR ELECTIVES (AE)

**12 credit hours§:**

- **Scheme I or II: Four courses**
- **COOP Scheme: Cooperative Training courses (MEIE5001 and MEIE5002) and two elective courses**

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

| Code     | Title                                                      | Credits | Pre-requisite / Co-requisite *   |
|----------|------------------------------------------------------------|---------|----------------------------------|
| MEIE5001 | Mechanical Program Cooperative Training I                  | 0       | ENGR4006*                        |
| MEIE5002 | Mechanical Program Cooperative Training II                 | 6       | MEIE5001                         |
| MEIE5013 | Refrigeration & Air Conditioning                           | 3       | MEIE4144, MEIE3142               |
| MEIE5128 | Theory & Practice of Rotor Dynamics                        | 3       | MEIE3122                         |
| MEIE5019 | Internal Combustion Engines & Control of Exhaust Emissions | 3       | MEIE3142                         |
| MEIE5101 | Engineering Vibration                                      | 3       | MEIE3121                         |
| MEIE5106 | Pressure Vessel & Piping System Design                     | 3       | MEIE4101 or MEIE4102             |
| MEIE5110 | Applied Finite Element Methods                             | 3       | MEIE3102                         |
| MEIE5121 | Modeling & 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             |
| MEIE5130 | Mechatronics Systems and Applications                      | 3       | MEIE4125, (MEIE4101 or MEIE4102) |
| MEIE5131 | Legged Locomotion of Robots and Animals                    | 3       | MEIE3122                         |
| MEIE5132 | Smart Materials and Structures                             | 3       | MEIE4125 or MCTE4145             |
| MEIE5141 | Solar Energy Systems                                       | 3       | MEIE4144                         |
| MEIE5142 | Solar Thermal Processes                                    | 3       | MEIE4144                         |
| MEIE5146 | Renewable Energy                                           | 3       | MEIE3142 or MEIE3159 or MCTE4230 |
| MEIE5147 | Energy Conservation and Management                         | 3       | MEIE3141 or MEIE3159             |
| MEIE5148 | Desalination                                               | 3       | MEIE4144                         |
| MEIE5151 | Fundamentals of Turbomachinery                             | 3       | MEIE3142, MEIE4141               |
| MEIE5152 | Fundamental of Thermal Energy Storage Systems              | 3       | MEIE3142                         |
| MEIE5162 | Corrosion Engineering                                      | 3       | MEIE4161                         |
| MEIE5165 | Introduction to Fracture Mechanics                         | 3       | MEIE3161, (MEIE3102 or MCTE3230) |
| MEIE5166 | Introduction to Nanotechnology Engineering                 | 3       | MEIE4161                         |
| MEIE5167 | Mechanics of Composite Materials                           | 3       | MEIE3161, (MEIE3102 or MCTE3230) |
| MEIE5182 | Fundamentals of Biomechanics                               | 3       | MEIE3102, MEIE3121               |
| MEIE5190 | Special Topics                                             | 3       |                                  |
| MEIE5264 | CAD/CAM                                                    | 3       | MEIE3102, MEIE3107               |

§ - One 4000 or 5000 level course can be taken from another engineering program with the approval of the academic advisor and the HoD.

- Students can register for elective courses starting from semester eight (8).

**Note:**

- Students are advised to regularly check the most updated degree plan on the department webpage. This degree plan is last updated on July 20<sup>th</sup>, 2020.

- Course description and exact prerequisite(s) can be checked on:

<http://sisinfo.squ.edu.om/cgi-bin/crs-en/allsub.cgi>