**Please inform the Registrar's Office if you choose an alternate option.** **STUDENTS ENTERING IN 2023** **06/13/23**
**Otherwise your Academic Advisement Report will be incorrect.** **MECHANICAL ENGINEERING MAJOR** **Subject to Change**

# ENERGY DESIGN & MECHANICAL DESIGN OPTIONS
# DIVISIONS 3&4
# CURRICULUM ROADMAP

**Total Units: 147**

**FALL 2023**

| | | | |
|---|---|---|---|
| Arts Elective (Area C1-Lower Div) | | | 3.0 |
| CHE | 110 | General Chemistry (Area B1) | 3.0 |
| CHE | 110L | General Chemistry Lab (Area B3) | 1.0 |
| EGL | 100 | English Composition (Area A2) **"G4"** | 3.0 |
| ENG | 110 | Introduction to Engineering and Technology❁ | 1.0 |
| ENG | 112 | Intro to Technical Communication❁ (Area A1☆) **G4"** | 1.0 |
| FF | 100 | Basic Marine Firefighting | 0.0 |
| ME | 220 | Computer Aided Design❁ | 2.0 |
| MTH | 210 | Calculus I (Area B4) **"G4"** | 4.0 |
| PE | 101 | Swim Competency Exam | 0.0 |
| PE | 102 | Beginning/Intermediate Swimming | (0.5) |
| | | **Total** | **18.0** |

**SPRING 2024**

| | | | |
|---|---|---|---|
| DL | 105 | Marine Survival | 1.0 |
| DL | 105L | Marine Survival Lab | 1.0 |
| DL | 105X | USCG Lifeboatman's Exam | 0.0 |
| EGL | 220 | Critical Thinking | 3.0 |
| Critical Thinking Elective (Area A3) **"G4"** | | | |
| EPO | 110 | Plant Operations I | 1.0 |
| EPO | 125 | Introduction to Marine Engineering | 3.0 |
| EPO | 125L | Introduction to Marine Engineering Lab | 1.0 |
| EPO | 213 | Welding Lab | 1.0 |
| MTH | 211 | Calculus II (Area B4) | 4.0 |
| NAU | 104 | Shipboard Security and Responsibility | 1.0 |
| PHY | 200 | Engineering Physics I (Area B1) | 3.0 |
| PHY | 200L | Engineering Physics I Lab (Area B3) | 1.0 |
| | | **Total** | **20.0** |

**SUMMER CRUISE 2024**

| | | |
|---|---|---|
| CRU | 150 | Sea Training I (Engine) 8.0 |
| EPO | 220 | Diesel Engineering I 2.0 |
| | | **Total 10.0** |

**FALL 2024**

| | | | |
|---|---|---|---|
| ENG | 210 | Engineering Computer Programming | 2.0 |
| EPO | 215 | Manufacturing Processes I | 1.0 |
| ME | 230 | Engineering Materials❁ | 3.0 |
| ME | 232 | Engineering Statics❁ | 3.0 |
| MTH | 212 | Calculus III (Area B4) | 4.0 |
| PHY | 205 | Engineering Physics II (Area B1) | 3.0 |
| PHY | 205L | Engineering Physics II Lab | 1.0 |
| | | **Total** | **17.0** |

**SPRING 2025**

| | | | |
|---|---|---|---|
| Humanities Elective (Area C2-Lower Div) | | | 3.0 |
| ENG | 250 | Electrical Circuits and Electronics❁ | 3.0 |
| ENG | 250L | Electrical Circuits and Electronics Lab❁ | 1.0 |
| ME | 240 | Engineering Thermodynamics❁ | 3.0 |
| ME | 330 | Engineering Dynamics❁ | 3.0 |
| MTH | 215 | Differential Equations (Area B4) | 3.0 |
| | | **Total** | **16.0** |

**SUMMER CO-OP 2025**

| | | |
|---|---|---|
| CEP | 250 | ME Co-Op I 3.0 |
| | | **Total 3.0** |

**FALL 2025**

| | | | |
|---|---|---|---|
| Arts **OR** Humanities Elective (Area C-Lower Div) | | | 3.0 |
| Life Science Elective (Area B2) | | | 3.0 |
| ME | 332 | Mechanics of Materials❁ | 3.0 |
| ME | 340 | Engineering Fluid Mechanics❁ | 3.0 |
| ME | 360 | Instrumentation and Measurement Systems❁ | 2.0 |
| ME | 360L | Instr. and Measurement Systems Lab❁ | 1.0 |
| | | **Total** | **15.0** |

**SPRING 2026**

| | | | |
|---|---|---|---|
| ME | 344 | Heat Transfer❁ | 3.0 |
| ME | 392 | Mechanical Design❁ | 3.0 |
| ME | 429 | Manufacturing Processes Lab❁ | 1.0 |
| ME | 436 | Mechatronic System Design❁ | 2.0 |
| ME | 436L | Mechatronic System Design Lab❁ | 1.0 |
| ME | 490 | Engineering Design Process❁ (Area A1☆) **"G4"** | 3.0 |
| Option Specific Course (1st of 3)❁ | | | 3.0 |
| | | **Total** | **16.0** |

**SUMMER CO-OP 2026**

| | | |
|---|---|---|
| CEP | 350 | ME Co-Op II 3.0 |
| | | **Total 3.0** |

**FALL 2026**

| | | | |
|---|---|---|---|
| American Institutions I Elective (Area D-Lower Div) **OR** (Area F) | | | 3.0 |
| Social Science Elective (Area D-Lower Div) | | | 3.0 |
| ME | 462 | Experimental Methods in ME❁ (Area A1☆) **"G4"** | 1.0 |
| ME | 462L | Experimental Methods in ME Lab❁ | 1.0 |
| ME | 492 | Project Design I❁ | 2.0 |
| ME | 492L | Project Design I Lab❁ | 1.0 |
| Option Specific Course (2nd of 3)❁ | | | 3.0 |
| | | **Total** | **14.0** |

**SPRING 2027**

| | | | |
|---|---|---|---|
| Arts/Humanities Upper Div Elective (Area C-Upper Div) | | | 3.0 |
| CSU Graduate Writing Assessment Requirement (GWAR) Elective♦ | | | (3.0) |
| ENG | 310 | Engineering Ethics (Area D-Upper Div) | 3.0 |
| GOV | 200 | American Government | 3.0 |
| American Institutions II Elective (Area D-Lower Div) | | | |
| ME | 494 | Project Design II❁ | 2.0 |
| ME | 494L | Project Design II Lab❁ | 1.0 |
| Option Specific Course (3rd of 3) ❁ | | | 3.0 |
| | | **Total** | **15.0** |

**"G4"** "Golden 4" Courses (Must receive a "C-" or higher)

☆ GE Area A1 Sequence of Three Courses

♦ The CSU Graduate Writing Assessment Requirement (GWAR) may be met by passing one of the following courses: EGL 300 Advanced Writing or EGL 302 Nonfiction Writing. (Must receive a "C-" or higher)

❁ Courses in Major (CGPA = 2.0 is required)

**OPTION SPECIFIC COURSES**

**Energy Design Option**
1st – ME 440 Advanced Fluids & Thermodynamics
2nd – ME 442 Heating, Ventilation, and A/C Design OR
ENG 300 Power Engineering
3rd – ME 444 Energy Systems Design

**Mechanical Design Option**
1st – ME 432 Machinery Design
2nd – ME 430 Mechanical Vibrations
3rd – ME 460 Automatic Feedback Control