# 2016 – 17 DEGREE REQ. WORKSHEET
## CMU/CU-Boulder Mechanical Engineering Partnership Program
## www.coloradomesa.edu/engineering

COLORADO MESA UNIVERSITY

University of Colorado Boulder

**Name: _____ CMU ID #:_____**

**IMPORTANT NOTE: This sheet is only a worksheet to track your progress in the CMU/CU-Boulder Mechanical Engineering Partnership Program. An official review of your coursework will be performed by CU administration to ensure completion of all graduation requirements.**

- **In order to take any Math, Science or Engineering courses, each listed prerequisite (or an equivalent course) must be completed with a grade of "C" or better.**
- **All engineering students must take ENGL 111 and 112 unless they meet or exceed one of the following criteria: ACT ENGL 24 or SAT Verbal 550 or AP English (Lit & Comp or Lang & Comp) 4 or IB English 4.**

**Minimum credits to graduate: 128 hrs**

**CMU/CU-BOULDER MECHANICAL ENGINEERING REQUIRED COURSES:**

| Course No | Title | Sem.hrs | Grade | Term/Trns |
|---|---|---|---|---|
| **Mathematics and Computer Science:** 19 semester hours | | | | |
| MATH 135 | Engineering Calculus I | 4 | _____ | _____ |
| MATH 136 | Engineering Calculus II | 4 | _____ | _____ |
| MATH 253 | Calculus III | 4 | _____ | _____ |
| MATH 236 | Differential Equations & Linear Algebra | 4 | _____ | _____ |
| CSCI 130 | Intro to Engr Computing | 3 | _____ | _____ |
| **Physical Science:** 18 semester hours | | | | |
| PHYS 131 | Fundamental Mechanics | 4 | _____ | _____ |
| PHYS 131L | Fundamental Mechanics Laboratory | 1 | _____ | _____ |
| PHYS 132 | Electromagnetism & Optics | 4 | _____ | _____ |
| PHYS 132L | Electromagnetism & Optics Laboratory | 1 | _____ | _____ |
| CHEM 131 | General Chemistry | 4 | _____ | _____ |
| or CHEM 151 | Engineering Chemistry | | | |
| CHEM 131L | General Chemistry Lab | 1 | _____ | _____ |
| or CHEM 151 | Engineering Chemistry Lab | | | |
| Science Elective: 3 semester hours. Must be selected from: PHYS 230, PHYS 231, BIOL 209 or CHEM 311 | | | | |
| _____ | ____ _____ | 3 | _____ | _____ |
| **English:** 3 semester hours | | | | |
| ENGL 425 | Scientific Writing | 3 | _____ | _____ |
| **Machining:** 1 semester hour | | | | |
| MAMT 102 | Machining Fundamentals | 1 | _____ | _____ |
| **Basic Engineering:** 19 semester hours | | | | |
| ENGR 101 | Introduction to Engineering | 1 | _____ | _____ |
| ENGR 125 | CAD and Fabrication | 3 | _____ | _____ |
| ENGR 140 | 1st-Year Engr Projects | 3 | _____ | _____ |
| ENGR 224 | Materials Science | 2 | _____ | _____ |
| ENGR 224L | Materials Science Lab | 1 | _____ | _____ |
| ENGR 261 | Statics and Structures | 3 | _____ | _____ |
| ENGR 263 | Mechanics of Solids | 3 | _____ | _____ |
| ENGR 343 | Dynamics | 3 | _____ | _____ |

| Course No | Title | Sem.hrs | Grade | Term/Trns |
|---|---|---|---|---|
| **CU-Boulder Mechanical Engineering Courses:** 39 semester hours | | | | |
| MCEN 2000 | Professionalism Seminar | 1 | _____ | _____ |
| MCEN 3012 | Thermodynamics | 3 | _____ | _____ |
| MCEN 3017 | Circuits & Electronics | 3 | _____ | _____ |
| MCEN 3021 | Fluid Mechanics | 3 | _____ | _____ |
| MCEN 3022 | Heat Transfer | 3 | _____ | _____ |
| MCEN 3025 | Component Design | 3 | _____ | _____ |
| MCEN 3030 | Computational Methods | 3 | _____ | _____ |
| MCEN 3032 | Thermodynamics 2 | 3 | _____ | _____ |
| MCEN 3047 | Data & Measurements | 4 | _____ | _____ |
| MCEN 4026 | Manufacturing Processes & Systems | 3 | _____ | _____ |
| MCEN 4043 | System Dynamics | 3 | _____ | _____ |
| MCEN 4045 | ME Design Project 1 | 3 | _____ | _____ |
| MCEN 4085 | ME Design Project 2 | 3 | _____ | _____ |
| MCEN 4086 | Writing for Design Project | 1 | _____ | _____ |

**ELECTIVE COURSES:**

**Free Electives:** 2 credits

_____ ____ _____ ____ _____ _____

**Humanities and Social Science:** 15 semester hours (6 hours must be upper division). Check website for complete list of courses. Link given at end of worksheet.

9 semester hours Lower Division Humanities & Social Science

SOCI 120 Technology & Society 3 _____ _____

_____ ____ _____ ____ _____ _____

_____ ____ _____ ____ _____ _____

6 semester hours Upper Division Humanities & Social Science

_____ ____ _____ ____ _____ _____

_____ ____ _____ ____ _____ _____

**Technical Electives:** 12 semester hours (6 hours MCEN and 6 hours upper division math, science or engineering courses).

MCEN ____ _____ ____ _____ _____

MCEN ____ _____ ____ _____ _____

_____ ____ _____ ____ _____ _____

_____ ____ _____ ____ _____ _____

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**This is a recommended sequence of course-work. Certain courses may have prerequisites or are only offered during the fall or spring semesters. It is the responsibility of the student to meet regularly with their assigned advisor.**

## Freshman Year

| *FALL SEMESTER* | | *Credit Hr* | *SPRING SEMESTER* | | *Credit Hr* |
|---|---|---|---|---|---|
| MATH 135 | Engineering Calculus I | 4 | MATH 136 | Engineering Calculus II | 4 |
| CHEM 131 | General Chemistry | 4 | PHYS 131 | Fundamental Mechanics | 4 |
| or CHEM 151 | Engineering Chemistry | | PHYS 131L | Fundamental Mechanics Lab | 1 |
| CHEM 131L | General Chemistry Lab | 1 | ENGR 140 | 1st Year Engineering Projects | 3 |
| or CHEM 151L | Engineering Chemistry Lab | | CSCI 130 | Introduction to Engineering Computing | 3 |
| ENGR 101 | Introduction to Engineering | 1 | | | |
| ENGR 125 | CAD & Fabrication | 3 | | TOTAL | 15 |
| MAMT 102 | Machining Fundamentals | 1 | | | |
| | TOTAL | 14 | | | |

## Sophomore Year

| *FALL SEMESTER* | | *Credit Hr* | *SPRING SEMESTER* | | *Credit Hr* |
|---|---|---|---|---|---|
| MATH 253 | Calculus III | 4 | MATH 236 | Differential Equations & Linear Algebra | 4 |
| PHYS 132 | Electromagnetism & Optics | 4 | ENGR 343 | Dynamics | 3 |
| PHYS 132L | Electromagnetism & Optics Lab | 1 | ENGR 263 | Mechanics of Solids | 3 |
| ENGR 224 | Materials Science | 2 | | Science Elective* | 3 |
| ENGR 224L | Materials Science Lab | 1 | | Hum/Soc Sci Elect (Lower Div) | 3 |
| ENGR 261 | Statics & Structures | 3 | | TOTAL | 16 |
| SOCI 120 | Technology & Society | 3 | | | |
| | TOTAL | 18 | | | |

## Junior Year

| *FALL SEMESTER* | | *Credit Hr* | *SPRING SEMESTER* | | *Credit Hr* |
|---|---|---|---|---|---|
| MCEN 2000 | Professionalism Seminar | 1 | MCEN 3022 | Heat Transfer | 3 |
| MCEN 3012 | Engineering Thermodynamics | 3 | MCEN 3025 | Component Design | 3 |
| MCEN 3017 | Circuits & Electronics | 3 | MCEN 3047 | Data & Measurements | 4 |
| MCEN 3021 | Fluid Mechanics | 3 | MCEN 3032 | Thermodynamics 2 | 3 |
| MCEN 3030 | Computational Methods | 3 | ENGL 425 | Scientific Writing | 3 |
| | Hum/Soc Sci Elect (Lower Div) | 3 | | | |
| | TOTAL | 16 | | TOTAL | 16 |

## Senior Year

| *FALL SEMESTER* | | *Credit Hr* | *SPRING SEMESTER* | | *Credit Hr* |
|---|---|---|---|---|---|
| MCEN 4026 | Manufacturing Processes & Sys | 3 | MCEN 4085 | ME Design Project 2 | 3 |
| MCEN 4043 | System Dynamics | 3 | MCEN 4086 | Writing for Design Projects | 1 |
| MCEN 4045 | ME Design Project 1 | 3 | | MCEN Tech Elective | 3 |
| | MCEN Tech Elective | 3 | | General Technical Elective | 3 |
| | General Technical Elective | 3 | | Hum/Soc Sci Elect (Upper Div) | 3 |
| | Hum/Soc Sci Elect (Upper Div) | 3 | | Free Electives | 2 |
| | TOTAL | 18 | | TOTAL | 15 |

Black – CMU courses, red – CU courses

Total Credit Hours = 128

* Courses that fulfill the 3-credits of Science Elective are: PHYS 230, PHYS 231, BIOL 209 or CHEM 311

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**Acceptable Course Substitutions**

CHEM 151 (4) for CHEM 131 (4)
CHEM 151L (1) for CHEM 131L (1)
MAMT 115 (3) for MAMT 102 (1)
MATH 151 (5) for MATH 135 (4)
MATH 152 (5) for MATH 136 (4)

**Humanities & Social Science Electives**

See: http://www.coloradomesa.edu/engineering/documents/HSSAcceptableClasses-August2015Update.pdf

**General Technical Electives**

300 and 400 level courses in the following subjects are considered to be General Technical Electives: CHEM, ENGR, MCEN, MATH, PHYS

**MCEN Technical Electives**

4000 level MCEN courses not otherwise required for the major are considered to be MCEN Technical Electives.

**Grade Requirements**

Beginning with the incoming class of Fall 2016, the minimum passing grade for prerequisite and co-requisite classes in the BSME curriculum is a C. This includes courses completed outside the department (MATH, PHYS, etc.). The minimum passing grade for standalone classes is a D-. In addition, students need to have a cumulative and major GPA of at least 2.25 in order to graduate from the CU Boulder College of Engineering.

**Free Electives**

Any college level credits not used to satisfy BSME degree requirements.