

INTEGRATED DESIGN ENGINEERING *Mechanical Emphasis- Fall 2023*

Example

1

COURSE NUMBER (Cr.)
Course Name
(PR: Pre-Requisites)
(CR: Co-Requisites)
(Fall or Spring Only Course)

APPM 1350 (4)
Calculus 1 For Engineers

PHYS 1110 (4)
General Physics 1
(CR: APPM 1350)

CSCI 1300 (4)
Computer Science 1:
Starting Computing
(CR: APPM 1235 or 1350)

**Humanities &
Social Science (3)**

2

GEEN 1017 (3)
Engineering Drawing
Spring Only

GEEN 1400 (3)
Engineering Projects

APPM 1360 (4)
Calculus 2 For Engineers
(PR: APPM 1350)

MCEN 1024 (3)
Chemistry of Energy &
Materials

**Writing
Requirement(3)**

3

GEEN 2851 (3)
Statics & Structures
(PR: APPM 1360, PHYS 1110)
Fall Only

GEEN 3852 (3)
Thermodynamics
(PR: PHYS 1110)
Fall Only

APPM 2350 (4)
Calculus 3 For Engineers
(PR: APPM 1360)

PHYS 1120 (4)
General Physics 2
(PR: PHYS 1110)
(CR: APPM 1360)

PHYS 1140 (1)
Experimental Physics
(CR: PHYS 1120)

**Humanities &
Social Science (3)**

4

GEEN 2400 (3)
Engineering Projects for
the Community
(PR: GEEN 1400)

GEEN 3024 (3)
Materials Science for
Engineers
(PR: PHYS 1110)
Spring Only

APPM 2360 (4)
Linear Algebra &
Differential Equations
(PR: APPM 1360)

MCEN 2043 (3)
Dynamics
(PR: GEEN 2851, APPM 1360)

**Humanities &
Social Science (3)**

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**Concentration
Course (3)**

GEEN 3010 (3)
Circuits for Engineers
(PR: PHYS 1140)
(CR: APPM 2360)
Fall Only

GEEN 3400 (3)
Invention & Innovation

MCEN 2063 (3)
Mechanics of Solids
(PR: GEEN 2851, APPM 1360)

**Science
Elective (2)**
See Page 2 for options

Free Elective (3)

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**Concentration
Course (3)**

GEEN 3853(4)
Data Analysis for Engineers
(PR: APPM 2360, Computing, PHYS
1140)
(CR: GEEN 3010, Writing)
Spring Only

MCEN 3025 (3)
Component Design
(PR: GEEN 1017, GEEN 3024,
MCEN 2063)

MCEN 3021 (3)
Fluid Mechanics
(PR: GEEN 2851, APPM 2350)

**Humanities &
Social Science (3)**
Upper Division

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**Concentration
Course (3)**

MCEN 4045(3)
ME Design Project 1
See page 2 for requisites
Fall Only

MCEN 4043(3)
System Dynamics
(PR: GEEN 3010, MCEN 2043)

**Free Elective or
Concentration
Course (3)**

Free Elective (3)

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**Concentration
Course (3)**

MCEN 4085(3)
ME Design Project 2
(PR: MCEN 4085)
Spring Only

Free Elective (3)

**Free Elective or
Concentration
Course (3)**

**Humanities &
Social Science (3)**
Upper Division

Integrated Design Engineering Curriculum

Mechanical Engineering Emphasis

Standard Course Substitutions

- **APPM 1350:** APPM 1345, MATH 1300
- **APPM 1360:** MATH 2300
- **APPM 2350:** MATH 2400
- **APPM 2360:** MATH 2130 and MATH 3430, MATH 2135 and MATH 3430
- **CSCI 1300:** ASEN 1320, CHEN 1310, ECEN 1310, CSCI 1320
- **GEEN 1017:** MCEN 1025
- **GEEN 1400:** ASEN 1400, ASEN 1403, ECEN 1400
- **GEEN 2851:** CVEN 2121, MCEN 2023, ASEN 2001
- **GEEN 3010:** MCEN 3017, ECEN 3010
- **GEEN 3024:** ASEN 1022, MCEN 2024
- **GEEN 3852:** AREN 2110, EVEN 3012, CHEN 3320, MCEN 3012
- **GEEN 3853:** MCEN 3047
- **MCEN 1024:** CHEN 1201, CHEN 1211 (CHEM 1113 approved for transfer students)
- **MCEN 2043:** CVEN 3111
- **MCEN 2063:** CVEN 3161
- **MCEN 3021:** CVEN 3313, CHEN 3200
- **MCEN 4043:** ECEN 3300 and ECEN 4138

MCEN 4045 Requisite Information

- Pre-Requisites:
 - APPM 1350, APPM 2360, APPM 2350, APPM 2360
 - CSCI 1300
 - GEEN 1400, GEEN 2400, GEEN 3400, GEEN 3010, GEEN 3024, GEEN 3852
 - PHYS 1110, PHYS 1120, PHYS 1140
 - MCEN 2043, MCEN 2063, MCEN 3021, MCEN 3025
- Pre or Co-Requisite:
 - GEEN 3853 or MCEN 4043 (one needs to be taken as a pre-req; the other can be a co-req)
- Co-Requisite:
 - GEEN 3853 or MCEN 4043 (one needs to be taken as a pre-req; the other can be a co-req)
 - Writing

Humanities & Social Science Electives/Writing Requirements

Visit the college's [Humanities, Social Sciences, and Writing Requirements](#) webpage for options.

Grade Requirements

The minimum passing grade for a prerequisite or co-requisite course within the Mechanical Engineering Emphasis is a **C-**. This requirement includes courses completed in another program or department (APPM, PHYS, etc.). The minimum grade for all Concentration courses is also a **C-**. The minimum grade for all Concentration courses is also a **C-**. The minimum passing grade for standalone classes is a **D-**. In addition, students need to have a cumulative and major GPA of at least 2.000 in order to graduate from the College of Engineering. **Pass/Fail** is only permitted for up to 6 Free Elective credits.

Science Elective Options:

- CHEM: 1114, 1211
- CHEN: 1203, 2810
- EBIO: 1210, 1220, 1230, 1240
- MCDB: 1150, 1161, 1171, 2150, 2161, 2171
- PHYS: 2130, 2170