

INTEGRATED DESIGN ENGINEERING *Architectural Emphasis – FALL 2023*

1

APPM 1350 (4)
Calculus 1 For Engineers

CHEN 1201 (4)

*Gen Chemistry for
Engineers 1
(PR: 1 yr. HS Chemistry or CHEM
1021, HS Algebra)

CSCI 1200 (3)

Intro to Computational
Thinking
Fall Only

**Humanities &
Social Science (3)**

2

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

PHYS 1110 (4)

General Physics 1
(CR: APPM 1350)

GEEN 1400 (3)
Engineering Projects

AREN 1027 (3)
Engineering Drawing

**Writing
Requirement(3)**

3

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

GEEN 2400 (3)

Engineering Projects for
the Community
(PR: GEEN 1400)

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

AREN 2050 (3)
Building Materials and
Systems
Fall Only

**Humanities &
Social Science (3)**

4

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

PHYS 1120 (4)

General Physics 2
(PR: PHYS 1110)

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

CVEN 3161(3)
Mechanics of Materials I
(PR: GEEN 2851,
CR: APPM 2360)

**Concentration
Course (3)**

**Humanities &
Social Science (3)**

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

GEEN 3400 (3)

Invention & Innovation
(PR: GEEN 1400)

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

AREN Focus 1 (3)
See Page 2 for option

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

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**Concentration
Course (3)**

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

**Science Elective
(1)**
See Page 2 for Options

AREN 3080 (3)
Arch. Design Studio 1
(PR: AREN 1027)
Spring Only

AREN Focus 2 (3)
See Page 2 for option

AREN Focus 3 (3)
See Page 2 for option

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**Concentration
Course (3)**

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

Free Elective (3)

AREN 4080 (2)
Arch. Design Studio 2
(PR: AREN 3080)
(CR: AREN 4318)
Fall Only

AREN 4318 (3)
AREN Design 1
See page 2 for requisites
Fall Only

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

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**Concentration
Course (3)**

GEEN 3853(4)
Data Analysis for Engineers
(PR: APPM 2360, Computing, PHYS
1140)
(CR: GEEN 3010, Writing) GEEN 3024,
Spring Only

Free Elective (3)

Free Elective (3)

AREN 4319 (2)
AREN Design 2
(PR: AREN 4318, AREN 4080,
GEEN 2400, GEEN 3400)
Spring Only

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

Integrated Design Engineering Curriculum

Architectural 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
- **AREN 1027:** None (CVEN 1027 or GEEN 1017 would need to be petitioned if completed)
- ***CHEN 1201:** CHEM 1113, CHEN 1211, MCEN 1024, ASEN 1022*
 - 30 total science credits are required. If alternate courses are taken, additional science credits are required to reach 30.
- **CSCI 1200:** ASEN 1320, CSCI 1320, CSCI 1300, CHEN 1310, ECEN 1310
- **CVEN 3161:** MCEN 2063
- **GEEN 1400:** ASEN 1400, ASEN 1403, ECEN 1400
- **GEEN 2851:** CVEN 2121, MCEN 2023, ASEN 2071/2001
- **GEEN 3010:** ECEN 3010
- **GEEN 3852:** AREN 2110, MCEN 3012, ASEN 2702/2002, ECEN 3012
- **GEEN 3853:** CVEN 3227, MCEN 3047

AREN Focus Area Courses (students take all three courses under one Focus Area)

CONSTRUCTION

- CVEN 3246: Introduction to Construction
- AREN 4506: Pre-construction Estimating and Scheduling (PR: CVEN 3246)
- AREN 4606: Construction Project Execution and Control (PR: CVEN 3246 and AREN 4506; spring only)

LIGHTING/ELECTRICAL SYSTEMS

- AREN 3540: Illumination I (PR: Computing and Calculus 3; spring only)
- AREN 4550: Illumination II (PR: AREN 3540; fall only)
- AREN 4570: Building Electrical Systems Design I (fall only)

MECHANICAL SYSTEMS

- AREN 2120: Fluid Mechanics and Heat Transfer (PR: Thermodynamics, CR: Calculus 3 and APPM 2360; spring only)
- AREN 3010: Energy Efficient Buildings (PR: AREN 2120; fall only)
- AREN 4110: HVAC System Design (spring only)

STRUCTURAL SYSTEMS

- CVEN 3525: Structural Analysis (PR: CVEN 3161)
- CVEN 4545: Steel Design (PR: CVEN 3525; spring only)
- CVEN 4555: Reinforced Concrete Design (PR: CVEN 3525; fall only)

AREN 4318 Minimum Pre/Co-Requisite Information:

- **Construction:** PR: CVEN 3246 and AREN 4506
- **Electrical/Lighting:** PR: AREN 3540 and AREN 4550; CR: AREN 4570
- **Mechanical:** PR: AREN 2120, AREN 3010, and AREN 4110
- **Structures:** PR: CVEN 3525 and CVEN 4555; CR: CVEN 4545

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 Architectural 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 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.