

Architectural Engineering (AEEN)

AEEN 1310 Computer Graphics 3 SCH (2-3)

Introduction to procedures in computer-aided drafting and computer applications.

AEEN 2325 Architectural Develop Intro 3 SCH (3-0)

Introduction to topics which influence the development of architectural designs including; building codes, building elements, major building systems and their selection, and materials and methods of construction. Prerequisite: AEEN 1310 or ITEN 1311.

AEEN 3116 Architectural Design 1 SCH (1-0)

Development of architectural designs requiring the evaluation of alternative systems for selection and integration in multi-system building design. Modern constraints and standards are addressed through physical and virtual three-dimensional studies. Prerequisite: AEEN 2325. Concurrent enrollment in AEEN 3216.

AEEN 3130 Instrumentation Laboratory 1 SCH (0-3)

Principles of instrumentation and experimental skills. Accuracy of measurements, calibration, error analysis, uncertainty analysis, and data correlation. Sound, pressure, lighting, thermal and air pollution measurements. Prerequisite: AEEN 3335. Fee: \$5.00

AEEN 3216 Architectural Design Lab 2 SCH (0-6)

Development of architectural designs requiring the evaluation of alternative systems for selection and integration in multi-system building design. Modern constraints and standards are address through physical and virtual three-dimensional studies. Six laboratory hours a week. Prerequisite: AEEN 2325. Concurrent enrollment in AEEN 3116.

AEEN 3303 Structural Analysis 3 SCH (3-0)

Statically determinate structures. Moving loads. Analysis of statically indeterminate structures by consistent deformation, slope-deflection and moment-distribution. Prerequisite: CEEN 3311. (Credit may not be obtained in both AEEN 3303 and CEEN 3303.)

AEEN 3304 Reinforced Concrete Design 3 SCH (3-0)

Mechanics, behavior and design of reinforced concrete members subject to axial loads, bending, torsion and shear. Prerequisites: AEEN 3303 and C or higher in CEEN 3311. (Credit may not be obtained in both AEEN 3304 and CEEN 3304.)

AEEN 3310 Building Information Modeling 3 SCH (2-3)

Building Information Modeling with Autodesk Revit. Includes building modeling, structural modeling, work sharing and collaboration, views, scheduling, annotating, and documentation. Prerequisite: AEEN 1310 or ITEN 1311.

AEEN 3318 Sustainability Principles 3 SCH (3-0)

AEEN 3318 will develop best practices, focusing on sustainable materials and methods. Students will refine their understanding of programming, site planning, schematic and development. Project designs will be presented through physical models, graphic and verbal presentation. Prerequisite: Junior standing or approval of instructor.

AEEN 3325 Design Codes and Ordinances 3 SCH (3-0)

Design codes and municipal ordinances and their integration in design. Including zoning occupancy, construction classification, building constraints, fire resistant construction, egress, accessibility and plumbing. Prerequisite: junior standing in engineering.

AEEN 3332 Building Electrical Systems I 3 SCH (2-1)

An introduction to electrical systems for buildings and their applications, including electrical circuits, electrical system components, and load calculation. Prerequisite: PHYS 2326/2126. Fee: \$20.00

AEEN 3334 Building Electrical Systems II 3 SCH (2-1)

An introduction to building electrical systems design and control, including electrical system design, control, variable frequency drive (VFD), and programmable logic control (PLC). Prerequisite: AEEN 3332

AEEN 3335 Building Environmental Systems 3 SCH (3-0)

Fundamentals of heating, ventilation and air conditioning systems; moist air properties; analysis of different psychrometric processes; thermal comfort and air quality; infiltration and ventilation; psychrometric tools; and basic heat transfer. Prerequisites: AEEN 3346 and credit or enrollment in CEEN 3390.

AEEN 3346 Thermal Analysis 3 SCH (3-0)

Properties of gases, vapors, and liquids; the first and second laws of thermodynamics; power and refrigeration cycles. Prerequisites: MATH 2414, PHYS 2325 and PHYS 2125.

AEEN 3350 Facility Management 3 SCH (3-0)

Introduction to concepts of facility management, including links between assets and users; owner's perspective; and life cycle costs. Prerequisite: approval of the instructor.

AEEN 4279 Senior Design Project I 2 SCH (1-3)

Applications of engineering concepts covered in the upper division courses to architectural engineering problems including design of building structural and services systems, with emphasis on teamwork. Introduction to practical aspects of construction and professional ethics. Prerequisite: Credit in AEEN 3116 and AEEN 3216..

AEEN 4289 Senior Design Project II (WI) 2 SCH (1-3)

Application of engineering concepts covered in the upper division courses to architectural engineering problems including design of building structural and services systems, with an emphasis on teamwork. Introduction to practical aspects of construction and professional ethics. Prerequisites: Credit in AEEN 3304 or AEEN 4316, and credit in AEEN 4279 and AEEN 4320.

AEEN 4316 Structural Steel Design 3 SCH (3-0)

AISC specifications for the design of axially loaded members, beams, columns and connections. Introduction to plastic design. Prerequisite: AEEN 3303. (Credit may not be obtained in both AEEN 4316 and CEEN 4316.)

AEEN 4320 Building Services Engineering 3 SCH (3-0)

Analysis and design of different types of secondary systems; flow, pumps and piping system; fans, ductwork and building air distribution; and HVAC equipment. Prerequisites: CEEN 3390, AEEN 3335 and C or higher in AEEN 3346.

AEEN 4326 Construction Engineering 3 SCH (3-0)

Construction methods and management of earthwork with heavy equipment and others. Construction estimating, planning and control. Network theory and critical path methods. Prerequisite: credit or registration in CEEN 3317. Credit may not be obtained in both AEEN 4326 and CEEN 4326.

AEEN 4336 Selected Topics 1-3 SCH (1-3)

One or more topics of architectural engineering. May be repeated when topic changes. Prerequisite: junior standing.

AEEN 4340 Eng Proj Est, Plan & Control 3 SCH (3-0)

Develop cost estimates and schedules for construction projects. Analysis of cost components including labor, materials and equipment. Estimating techniques applied to project development. Integration of time and cost to track work progress. Use of modern computer tools for cost estimation and scheduling. Prerequisite: Senior standing in engineering. (Credit may not be obtained in both AEEN 4340 and CEEN 4340).

AEEN 4346 Building Systems Integration 3 SCH (3-0)

Basic concepts in building energy systems. Electrical, heating, ventilation and air conditioning (HVAC) systems; design skills development and implementation in computer programs. Prerequisites or registration in: AEEN 3334 and AEEN 4320.