

# Architect Engineering Tech (AET)

---

## Courses

### **AET A101** Fundamentals of Construction Documents **3 Credits**

Introduces the use, interpretation and production of construction documents. Introduces basic computer-aided drafting and design (CADD) skills used to produce and lay out civil, architectural, structural, mechanical and electrical drawings used in the construction industry. Develops skill in reading construction documents and retrieving information from them.

**Registration Restrictions:** Proof of eligibility for placement into WRTG A111. Appropriate SAT, ACT or UAA-approved math placement test scores may be used in lieu of MATH A105.

**Prerequisites:** MATH A105 with a minimum grade of C or concurrent enrollment.

### **AET A102** Methods and Materials of Building Construction **3 Credits**

Introduces basic knowledge of building materials, systems and assemblies. Includes site considerations, structural systems, construction document interpretation and methods used in the construction process.

**Registration Restrictions:** Proof of eligibility for placement into WRTG A111 and MATH A105

### **AET A108** Technical Graphics and Modeling for Engineers **3 Credits**

Introduces and develops skills for projection theory, sketching by hand, AutoCAD drafting, REVIT Systems, and Civil 3D modeling software.

### **AET A123** Codes and Standards **3 Credits**

Provides an introduction and overview of the fundamental provisions of the building codes used for plan review, life-safety evaluation of the buildings, and community development.

**Prerequisites:** AET A101 with a minimum grade of C and AET A102 with a minimum grade of C.

### **AET A181** Fundamentals of Building Information Modeling (BIM) **3 Credits**

Introduces the use of Building Information Modeling (BIM) software in the creation of 3D models and their associated construction documents. Includes the modeling of floor, wall and roof systems, as well as associated topographic features. Includes collaborative worksharing environments, information retrieval and collation, annotation, and presentation of BIM construction documents.

**Prerequisites:** AET A101 with a minimum grade of C and AET A102 with a minimum grade of C.

### **AET A213** Fundamentals of Civil Construction **4 Credits**

Outlines elements of civil construction projects, including soils and soil mechanics, foundations, roads, hydrology, and utilities using local, state and federal regulations. Introduces elements of construction surveying and develops skill in the modeling and mapping tools used on civil construction projects.

**Prerequisites:** AET A101 with a minimum grade of C and AET A102 with a minimum grade of C and MATH A105 with a minimum grade of C.

### **AET A242** Mechanical, Electrical and Plumbing Systems **4 Credits**

Introduces basic mechanical and electrical systems required in all buildings for the safety, health, comfort and convenience of occupants. Emphasizes design criteria; code requirements; interpretation of mechanical, electrical and plumbing construction documents; and building energy usage. Includes drawing conventions, symbols and terminology used in mechanical and electrical construction documents.

**Prerequisites:** AET A101 with a minimum grade of C and AET A102 with a minimum grade of C and MATH A105 with a minimum grade of C.

### **AET A285** Design Project 1 **5 Credits**

Introduces design principles focusing on conceptual design, massing, composition, organization, scale, proportion, rhythm, articulation and presentation. Develops skill in the visualization of design concepts, the use of modeling as a medium of investigation, and introduces techniques used in the presentation of design solutions.

**Prerequisites:** AET A101 with a minimum grade of C and AET A102 with a minimum grade of C and AET A181 with a minimum grade of C and ART A105 with a minimum grade of C and ART A160 with a minimum grade of C and (ART A261 with a minimum grade of C or ART A262 with a minimum grade of C).

### **AET A286** Design Project 2 **5 Credits**

Investigates the role of context in the design process. Contextual issues such as climate, geography, society, economics, history and materiality will be used to explore how design responds to constraints and opportunities presented by the context in which a project is placed.

**Prerequisites:** AET A285 with a minimum grade of C.

### **AET A295** Architectural and Engineering Technology Internship **1-3 Credits**

Places students in generalized and specialized architectural, engineering or building construction offices related to student educational program and occupational objectives. Direct supervision by architect, engineer, or contractor professional, program faculty, and Cooperative Education Director.

**Registration Restrictions:** Sophomore standing and faculty permission.

### **AET A332** Structural Technology **3 Credits**

Examines the physical principles that underlie the behavior of structures and materials. Investigates the structural properties and design of wood, steel and reinforced concrete structural members, including connections. Includes the use and interpretation of construction documents.

**Prerequisites:** CM A232 with a minimum grade of C.