

# Engineering Technology

## ENT 111

### Introduction to Engineering [RE] • 5.0 Credits

This course introduces students to the role of the engineer, engineering dimensions and standards, and the basic methodology of engineering problem-solving. \$35 science fee. **Prerequisite: A grade of 2.0 or better in MATH 70 or 72, or concurrent enrollment in MATH 70 or 72 or a higher math class, or a grade of 0.7 or better in a higher math class, or appropriate placement, or instructor permission.**

## ENT 114

### Introduction to Drafting [RE] • 4.0 Credits

Formerly ENT 114, ENT 116

Basic principles of drafting and introduction to CAD to include spatial visualization, line types, sketching, scale, orthographic projection, isometric drawings, sectional views, oblique lines and surfaces, auxiliary views and basic applications. \$35 science fee.

## ENT 118

### Spatial Visualization [RE] • 2.0 Credits

An overview of the techniques used to mentally manipulate 2-dimensional and 3-dimensional figures. Includes the basics of drafting such as line types, orthographic projection, isometric drawings, and basic applications. \$35 science fee.

## ENT 121

### Engineering Fundamentals W/ Lab [RE] • 4.0 Credits

Fundamental concepts relevant to many engineering disciplines, including: energy, vectors, force systems, free body diagrams, strength of materials, associated problem-solving, and basic design procedures. \$35 science fee. **Prerequisite: Completion of ENT 111 with a 2.0 or better.**

## ENT 122

### Materials [RE] • 3.0 Credits

An introduction to the materials which are used in the fabrication of construction projects including: foundations, wood, heavy timber frame construction, wood light frame construction, exterior finishes, interior finishes, masonry, roofing, and glass. \$35 science fee.

## ENT 124

### Intermediate Drafting [RE] • 4.0 Credits

Formerly ENT 124, ENT 125

Intermediate principles of drafting and CAD to include spatial visualization, line types, sketching, scale, orthographic projection, isometric drawings, sectional views, oblique lines and surfaces, auxiliary views and intermediate applications. \$35 science fee. **Prerequisite: A grade of 2.0 or better in ENT 114, or a grade of 2.0 or better in both ENT 118 and ENT 267, or instructor permission.**

## ENT 128

### Architecture & Engineering Blueprint Reading [RE] • 2.0 Credits

An overview of the techniques used in reading construction drawings for architecture and engineering projects. \$35 science fee.

## ENT 134

### Surveying W/ Lab [RE] • 6.0 Credits

A course in plane surveying which includes: horizontal, vertical, and angular measurements, traversing, mapping, construction survey, land survey, and calculations. \$35 science fee. **Prerequisite: Completion of MATH 113 or MATH& 142, both with a 2.0 or better, or appropriate placement, or instructor permission.**

## ENT 135

### Statics [RE] • 5.0 Credits

Vectors, types of forces, vector addition, moments, conditions for equilibrium, free-body diagrams and conventions, coplanar force systems, and load analysis of basic trusses and frames. \$35 science fee. **Prerequisite: Completion of MATH 113 or MATH& 142 with a 2.0 or better, or appropriate placement, and completion of ENT 121 with a 2.0 or better, or instructor permission.**

## ENT 136

### Advanced Drafting [RE] • 4.0 Credits

Advanced principles of drafting and CAD to include 3D projects, plan and profile drawings, advanced views, advanced sections, and dimensioning. \$35 science fee. **Prerequisite: Completion of ENT 124 with a grade of 2.0 or better, or instructor permission.**

## ENT 199

### Special Studies [RE] • 3.0 Credits

An experimental class to be used to explore new approaches and applications to engineering technology. \$35 science fee. **Prerequisite: Students must be enrolled in the ENT program and have instructor permission prior to enrollment.**

## ENT 214

### Strength of Materials [RE] • 5.0 Credits

A study of stress and deformation of materials. Topics include: axial and torsional loading, stress-strain relationships, shearing stresses, temperature stresses, and engineering applications. \$35 science fee. **Prerequisite: Completion of ENT 135 with a 2.0 or better, or instructor permission.**

## ENT 216

### Mechanical Drafting & Design [RE] • 5.0 Credits

Fundamentals of design, assembly drawings, dimensioning systems, and a mechanical design/drafting project. The primary emphasis of this course is the application of CAD to mechanical and 3-D drawings using AutoCAD. \$35 science fee. **Prerequisite: Completion of ENT 136 with a 2.0 or better, or instructor permission.**

## ENT 219

### Construction Estimating [RE] • 1.0 Credit

An overview of the techniques used in estimating material quantities in construction projects. \$35 science fee. **Prerequisite: Completion of ENT 111, ENT 122, and ENT 128, all with a 2.0 or better, or instructor permission.**

## ENT 224

### Structures [RE] • 5.0 Credits

Load analysis and design of basic structural members using timber and steel. \$35 science fee. **Prerequisite: Completion of ENT 214 with a 2.0 or better, or instructor permission.**

## ENT 226

### Architectural/Structural Drafting • 5.0 Credits

A drafting and design course covering construction techniques, architectural drawings, organization of drawing sets, and design projects. \$35 science fee. **Prerequisite: Completion of ENT 136 with a 2.0 or better, or instructor permission.**

## ENT 229

### Construction Specifications [RE] • 2.0 Credits

A study of construction specifications using the CSI format. \$35 science fee. **Prerequisite: A grade of 2.0 or higher in ENT 219, and a grade of**

# Engineering Technology

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**2.0 or higher or concurrent enrollment in ENGL&101, or instructor permission.**

## **ENT 236**

### **Design [RE] • 5.0 Credits**

Various individual and team projects with specific criteria and constraints assigned. The completed projects are formally presented using both oral and written reporting techniques. \$35 science fee. **Prerequisite: Completion of ENT 224 and ENT 226, both with a 2.0 or higher.**

## **ENT 238**

### **Electricity [RE] • 5.0 Credits**

An introductory course in electricity which includes: basic electrical theory and mathematical relationships, series and parallel circuits, DC and AC circuit components, power generation and distribution. \$35 science fee.

**Prerequisite: Completion of MATH& 141 with a 2.0 or higher, and completion of either PHYS& 115 or PHYS& 222 both with a 2.0 or higher, or instructor permission.**

## **ENT 267**

### **Autocad I W/Lab [RE] • 3.0 Credits**

This course utilizes AutoCAD for computer-aided drafting (CAD). The course shows how to use AutoCAD to set up drawings, additional draw and edit commands, dimensioning, and text. Students utilize drafting and editing techniques to efficiently produce their drawings. \$35 science fee.

**Prerequisite: Concurrent enrollment in ENT 118, or completion of ENT 118 with a 2.0 or higher, or instructor permission.**

## **ENT 299**

### **Special Studies [RE] • 5.0 Credits**

An experimental class to be used to explore new approaches and applications to engineering technology. \$35 science fee. **Prerequisite: Students must be enrolled in the ENT program and have instructor permission.**