

# ET - ENGINEERING TECHNOLOGY

## ET116 Advanced Engineering Graphics

Credits 3

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W; and MTH065; each with a grade of "C" or better, or placement above stated course levels. Recommended prerequisite: Previous CAD experience. This course serves as an advanced graphics course using computer-aided drafting (CAD) skills. Included are advanced graphic communication, multiview and pictorial representation, graphical analysis and solutions, 3D modeling, and lite model simulations.

## ET120 Engineering Problem Solving

Credits 4

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W; and MTH020; each with a grade of "C" or better; or placement above stated course levels. Engineering problem solving is a framework for bringing problems of the "real world" into the classroom. Students solve these problems by proceeding through a problem-solving cycle, step by carefully documented step. In addition to this process students learn to use tools such as EXCEL, WORD, and other engineering software's to solve typical problems. Students in the course will be exposed to concepts of persistence, responsibility, and college success through the GRIT model.

## ET150 Plane Surveying

Credits 4

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W, each with a grade of "C" or better, or placement above stated course levels; and MTH095. This course introduces fundamental concepts of plane surveying. Mathematics is used in applying the correction of errors, calculation of angles and bearings and the adjustment of traverses. Field survey practice is included.

**Additional Course Fee:** \$25.00

## ET210 Sustainable Engineering

Credits 3

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W; and MTH020; each with a grade of "C" or better, or placement above stated course levels. This course is an introduction to sustainable engineering practices including present sustainable analysis, life cycle analysis and alternative material analysis. The course explores the benefits and possible pit falls to "going green" with a product and builds strategies to create an eco-advantage.

## ET215 Additive Modeling with Artificial Intelligence (AI)

Credits 4

**Registration Requirement:** ENGR248. Additive Modeling with Artificial Intelligence (AI) course covers the topics of advanced parts and assemblies, simulation and topology optimization. You will learn how to use Solidworks simulation along with topology optimization to create multiple versions of parts based on designer inputs. After the design for optimization is complete students will learn and practice multiple prints on additive manufacturing process.

## ET221 Statics

Credits 4

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W, each with a grade of "C" or better, or placement above stated course levels; and MTH095. This course covers the study of forces and the effect of forces acting upon rigid bodies at rest, including resolution of forces, equilibrium and resultants of force systems.

## ET222 Fluid Mechanics

Credits 3

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W, each with a grade of "C" or better, or placement above stated course levels; and MTH095. This course covers the basic principles of fluid mechanics: hydrostatic pressure, buoyancy, flow rates, Bernoulli's Equation, energy losses, viscosity, laminar and turbulent flow and open channel flow.

## ET227 Engineering Project Management

Credits 4

**Registration Requirement:** RD090 and WR090, or IECC201R and IECC201W, each with a grade of "C" or better, or placement above stated course levels; and MTH065. Project management practices used in manufacturing and construction are introduced. Topics include project delivery, contractual arrangements, project phases, cost-estimating, work-planning and scheduling, tracking and cost control, trend analysis and forecasting, group process and leadership and economic feasibility analysis. The basics of engineering economics are introduced and use of the critical-path method is included.

## ET231 Basic Strengths of Materials

Credits 4

**Registration Requirement:** ET221. A study of stresses and deformations resulting from forces acting on structural materials.

## ET249 Advanced Solidworks

Credits 3

**Registration Requirement:** ENGR248. Advanced SolidWorks course covers the topics of Advanced Parts and Assemblies. You will learn how to use multi-body solids, sweeping and lofting features, as well as the more advanced shaping and assembly modeling capabilities of SOLIDWORKS mechanical design automation software. Sheet metal applications and load analysis will also be covered.

**Additional Course Fee:** \$25.00

## ET250 Project Capstone

Credits 4

**Registration Requirement:** ET240; or instructor consent. A course designed as a capstone project-based course. The student will develop a real project schedule, progress reports, presentations and team meeting agendas. Projects are composed of engineering analysis, graphics and communication. The course is designed to allow students the opportunity to accomplish a project from concept to completion.

**Additional Course Fee:** \$25.00

## ET263 Structural Design

Credits 4

**Registration Requirement:** Corequisite: ET231. This course introduces the fundamentals of structural design for buildings. Students learn to design simple wood and steel systems to resist gravity and lateral forces in accordance with IBC code requirements.

**Additional Course Fee:** \$25.00

**ET266 Concrete and Soil Technology**

Credits 4

**Registration Requirement:** ET221

This course covers the properties and behavior of Portland cement concrete, soil, and aggregates as they relate to construction. Topics include the design of concrete mixes, techniques of placement, curing, testing and inspection. Additionally, common laboratory and field tests to determine index properties for classification and mechanical properties of soils and compacted fills for foundation engineering are covered.

**Additional Course Fee:** \$25.00

*Course fees are subject to change. Additional section fees (web, hybrid, etc.) may apply.*