



COURSE OUTLINE: BS TE
2/23/2024

EFFECTIVE TERM: Fall 2023

Course Identification

COURSE ID: BS TE
[Student Learning Outcomes](#)

COURSE TITLE (FULL): Topics in Engineering

COURSE TITLE (SHORT): Topics in Engineering

COURSE DIVISION: Continuing Education Division

COURSE DEPARTMENT: Adult Basic Education

COURSE SUBJECT: Basic Skills

DISCIPLINE:

TAXONOMY OF PROGRAMS (TOP) CODE: 493062 Secondary Education (Grades 9-12) and G.E.D.

CROSS LISTED COURSE:

Course Attributes

CREDIT STATUS: N – Noncredit

TRANSFER STATUS: C Not Transferable

COURSE BASIC SKILLS STATUS: Basic Skills Course

STUDENT ACCOUNTABILITY MODEL (SAM) CODE: E - Non-Occupational

COURSE CLASSIFICATION STATUS: K Other Noncredit Enhanced Funding

FUNDING AGENCY CATEGORY: Not Applicable

COURSE PROGRAM STATUS: 1 - Program Applicable

REPEATABILITY: Noncredit Repeatable

GRADING METHOD: Pass or No Pass

CREDIT BY EXAM: Not Allowed

WORK EXPERIENCE: Not part of co-op work experience education program

**Course Workload Values**

Faculty Contact Hours	Lecture	Laboratory	Activity	Total
Minimum Contact Hours	8			8
Maximum Contact Hours	16			16
Minimum Out of Class Hours				
Maximum Out of Class Hours				
Total Minimum Student Learning Hours				
Total Maximum Student Learning Hours				

Unit Value	Lecture	Laboratory	Activity	Total
Minimum Units				
Maximum Units				

To Be Arranged (TBA) Hours	Lecture	Laboratory	Activity	Total
Minimum To Be Arranged (TBA) Hours				
Maximum To Be Arranged (TBA) Hours				
Scheduled Hours				

METHODS OF INSTRUCTION

- ☒ Lecture
☐ Laboratory
☐ Lecture and Laboratory
☐ Open Entry/Exit
☐ Independent Studies
☐ Work Experience
☐ Other To Be Arranged (TBA)

Class Size: 0**Requisites**

None



Course Outline with Information

CATALOG DESCRIPTION

Introduction to engineering topics and the engineering mindset, including engineering design and fabrication fundamentals as they relate to the broad engineering design process. Course will integrate beginning engineering project-based learning.

SCHEDULE DESCRIPTION

Introduction to engineering topics and the engineering mindset, including engineering design and fabrication fundamentals.

MEASURABLE OBJECTIVES

1.
Identify the five-step engineering design process and integrate it with an engineering design project.
2.
Apply procedure for taking an engineering problem through a sketch to a computer model.
3.
Demonstrate introductory circuit building skills.
4.
Create a prototype mechanical and electrical interface that demonstrates integration of two main engineering fields of study.
5.
Use basic fabrication tools common in engineering practice.

LECTURE TOPICAL OUTLINE

- Introducing Engineering Design Process
- Path from engineering problem to design
- Introductory electrical principles and how circuits integrate with engineering products
- Introductory mechanical principles and how fabricated mechanical components integrate with electrical components
- Basic physical fabrication of engineering designs

LABORATORY TOPICAL OUTLINE



METHODS OF EVALUATION

Category 1. Substantial written assignments for this course include:

- Tracking of engineering project progress via lab notebook entries

Category 2. Computational or non-computational problems solving demonstrations

- Introductory Circuit and CAD model debugging and error resolution
- Ensuring fit between electrical components
- Designing effective pathways between engineering components

Category 3. Skills Demonstrations

- Presenting engineering solution to instructor and peers.
- Physical fabrication of an engineering design.

Category 4. Objective Examinations

- Delivery and presentation of a basic level functioning engineering project

SAMPLE ASSIGNMENTS

1. Using a provided kit, organize a pathway from the engineering problem to a physically producible solution on paper.
2. Using a computer, sketch out ideas that may lead to an engineering solution.
3. Assemble at least two devices used in the engineering discipline to accomplish a given task.