SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Design & Drafting Technology Program
Revision Date: August 22, 2022

I. CATALOG DESCRIPTION

Course Number:	DDRT2230
Course Title:	Design Concepts
Prerequisite(s):	DDRT1110
Catalog Description:	A study of the Design process requires resolution of constraints arising from technical, aesthetic, human and business concerns where the designer use creativity, imagination and technical knowledge to satisfy these requirements and create products to satisfy human needs.
Credit Hours:	2
Class Hours:	30
Lab Hours:	0
Total Contact Hours:	30

II. COURSE OBJECTIVES: *Course will:*

A. Define Critical-thinking strategies.
B. Develop a model for engineering reasoning.
C. Define the holistic approach to engineering.
D. Apply design concepts to the design process.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
  1. Define Critical-thinking strategies
  2. Develop a model for engineering reasoning.
  3. Define the holistic approach to engineering.
  4. Apply design concepts to the design process.
B. General Education Learning Outcomes (GELOs)
  1. GELO #5: Analytical, Quantitative and Scientific Reasoning
  Outcome 1: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.

IV. CONTENT/TOPICAL OUTLINE

A. Lesson 1 - An Introduction to Whole System Thinking
B. Lesson 2 – Teams As a Tool in the Engineering Design Process
C. Lesson 3 – Creativity and Innovation in Design
D. Lesson 4 – Problem-Solving Processes For Design

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): Karsnitz, Obrien, Hutchinson, *Engineering Design An Introduction,* (Refer to CID and/or instructor for current edition)
B. Supplies: Note book

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
  1. Lectures
  2. Classroom discussions

3. Multimedia presentations

VII. METHODS OF EVALUATION

A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:

1. The course grade is determined accordingly:

a. 50%--- Text Assignments

b. 30%--- Quizzes and Test

c. 20%--- Technical Report/ papers

2. Evaluation will be based on the number of points earned from the total points possible

VIII. SPECIFIC COURSE REQUIREMENTS

A. Attendance: Students are required to attend all classes. Any student absent more than 12 class hours for a lab or 6 hours for lecture class will have their final course grade reduced one grade point. (Example: A reduced to a B)