

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

I. CATALOG DESCRIPTION

Course Number: DDRT2210
Course Title: Engineering Processes
Prerequisite(s): DDRT2200 and DDRT1330 or DDRT1220
Catalog Description: Application of engineering responsibility to the manufacturing, quality assurance and marketing of consumer products. Building 3-D functional piece parts using a 3-D rapid prototyping plotter.

Credit Hours: 2
Class Hours: 15
Lab Hours: 45
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Discuss the engineering/manufacturing process and identify appropriate manufacturing materials

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Select proper material and manufacturing process for product requirements
 - 2. Create detail and assembly drawings for consumer products
 - 3. Diagram and apply sound engineering and manufacturing processes
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

- A. Introduction
- B. Drawer Quality Assurance
 - 1. review, drawing, fabrication, and installation considerations
- C. Functional Drafting
 - 1. shortcuts, manual drafting, freehand sketching
- D. Detail Drawings
 - 1. requirements, qualifications, manufacturing methods
- E. Drawing Revisions
 - 1. ECO, cost of changes
- F. Design Assembly Drawings
- G. Installation Assembly Drawings
- H. Exploded Assembly Drawings
- I. Detail Assembly Drawings
- J. Subassembly Drawings

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 - 1. Madsen and Madsen, *Engineering Drawing and Design*, (Refer to CID and/or instructor for current edition)

2. Lieblich, *Drawing Requirements Manual*, (Refer to CID and/or instructor for current edition)

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. Lectures
 2. Classroom demonstrations
 3. Classroom discussions
 4. Hands-on lab projects
 5. Lab demonstrations
 6. Lab assistance
 7. Instructional handouts
 8. Video presentations
 9. Power Point presentations
 10. Speaker(s)
 11. Field Trip(s)

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 1. New Drawing Assignments (40% of final grade)
 2. Drawing Change Assignments (40%)
 3. Grading Criteria:
 - a. Complete projects on time
 - b. Points are deducted if a project is late
 - c. Completeness
 - d. Neatness
 - e. Accuracy
 - f. Lineweights
 - g. Lettering standards adhered to
 - h. Drafting standards followed
 - i. According to instructions provided
 - j. Quality of work done in accordance with industry standards
 4. Drawing List (but not limited to)
 - a. Functional Drafting
 - b. Freehand Sketching
 - c. Photo Drawings
 - d. Detail Drawings
 - e. Drawing Revisions
 - f. Design Assembly Drawings
 - g. Installation Assembly Drawings
 - h. Drawings for Catalogs
 - i. Exploded Assembly Drawings
 - j. Detail Assembly Drawings
 - k. Subassembly Drawings
 5. Unit Quizzes & Final Exam (20%)
 - a. All tests and quizzes missed need to be made up before the *next* class period
 - b. It is the student's responsibility to make arrangements with the instructor and reschedule a test.

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

VIII. SPECIFIC COURSE REQUIREMENTS

- A. Student must meet all of the following to receive a passing grade:
 1. Achieve a passing grade of “D” (60%) or higher, based on SCC grading scale.
 2. Submit own work. Students turning in homework, reports, field notes, or calculations by someone other than themselves will receive 0% and be referred to the Division Dean and Dean of Students for further disciplinary action. Consequences can include failing the course.
 3. Demonstrate attitude, skills, and character commensurate with industry standards.
 4. All program policies of the Computer Aided Design Drafting program will be strictly enforced.
 5. Intentional damage to college property will not be tolerated and may result in punitive action, such as being removed from the program.
 6. All cell phones will be turned off during class/lab time. If this becomes a problem, the instructor may consider the delinquent student absent.
- B. 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)