SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Precision Machining & Automation Technology Program
Revision Date: August 23, 2021
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	MACH1241
Course Title:	Machinery's Handbook
Prerequisite(s):	None
Catalog Description:	Introduction to technical area handbooks and problems of design. Use of Machinery's Handbook for measurement, circle, geometry, allowance and tolerance, keys and keyseats, gearing problems, cutting speeds, and threads and bearing problems.
Credit Hours:	2.0
Class Hours:	23
Lab Hours:	23
Total Contact Hours:	46

II. COURSE OBJECTIVES: *Course will:*

A. Demonstrate how to apply information from the Machinery's Handbook.
B. Identify how to solve common problems that they face daily on the job.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
- **1.** Apply Machinery's Handbook Tables and use a scientific calculator.
- **2.** Calculate machining speeds and feeds.
- **3.** Identify and select carbide inserts and toolholders.
- **4.** Determine thread types and threading methods.
- **5.** Select and specify fasteners for various applications.
- **6.** Dimension keys and keyseasts.
- **7.** Measure angles using sine bars.
- **8.** Measure and determine taper types and machining methods.
- **9.** Dimension components using allowances and tolerances.
- **10.** Calculate important gear tooth dimensions.
- **11.** Determine bearing types and applications.
- **12.** Develop an understanding of machine components belts, roller chains and sprockets.

B. General Education Learning Outcomes (GELOs)
- **1.** GELO 5: Analytical, Quantitative, and Scientific Reasoning
  Outcome 4: Manipulate formulas, data sets, graphs, tables, etc

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information)*

A. Units of Instruction
- **1.** Handbook tables and calculator functions
- **2.** Speeds and feeds for machining
- **3.** Indexable inserts and tool holders
- **4.** Thread types and threading methods
- **5.** Fasteners
- **6.** Key and keyseats

7. Sine bars and tapers
8. Allowances and tolerances
9. Machine drive elements
10. Bearings

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): *Machinery's Handbook Industrial Press*, ISBN: 978-0-8311-3091-6

B. Other Resources: Notebook, Calculator

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small and large group discussion
3. Video presentation
4. PowerPoint presentations
5. Demonstrations
6. Internet resources
7. Handouts
8. Observations
9. Assigned lab projects
10. Field trips

VII. METHODS OF EVALUATION (*course outline will provide more detailed information)*

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

1. Worksheets
2. Quizzes
3. Tests
4. Lab grades
5. Class participation

VIII. SPECIFIC COURSE REQUIREMENTS

A. Completion of all tests, projects, assignments, and notebook (if required).

B. Program shop safety rules will be followed. Please see the course outline for any additional safety rules established by the instructor.