COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Industrial Maintenance	Date submitted:	4/30/2018 (18-46)
Department:	Advanced Manufacturing Technology		
Curriculum:	Technology Studies		

Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

Course Code: (eg. ACC 101)	MFG*159
Course Type:	X

A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio

Elective Type:	G

AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science

Credit Hours:	3
Developmental: (yes/no)	No
Contact Hours: Lecture:	2
Clinical:	0
Lab:	2
Studio	0
Other:	0
TOTAL:	4
Class Maximum:	24
Semesters Offered:	Fall, Spring

Prerequisites:

Successful completion of the Electronics Technology Certificate or permission of the director of Manufacturing Technology.

Corequisites:

None

Other Requirements:

None

Ability Based Education (ABE) Statement

At Tunxis Community College students are assessed on the knowledge and skills they have learned. The faculty identified the General Education Abilities critical to students' success in their professional and personal lives. In every class, students are assessed on course abilities, sometimes program abilities, and, in most classes, at least one General Education Ability. Students will receive an evaluation of the degree to which they have demonstrated or not demonstrated that General Education Ability.

Catalog Course Description:	The Industrial Maintenance course is designed to give the student an overview of the electro-mechanical nature of industry. Even though electronic devices have made great inroads in industry, the mechanical nature of production remains nearly unchanged over the years. The expression the "wheels of industry" remains as true today as it did yesterday. Industrial Maintenance will provide the skills necessary to install and to maintain the electronic and mechanical parts and machines that provide the ability of manufacturers to produce our manufactured products e.g., automobiles, appliances, etc. Industrial Maintenance covers the following areas: safety, tools, fasteners, industrial print reading, belts and sheaves, chains and sprockets, gears and gear boxes, bearings, shafts, lubrication, seals and packing, pumps and compressors, fluid power, piping systems, and preventive maintenance.
Topical Outline: List course content in outline format.	[The outline should be in title case and use the numbering format below. You may not have subtopics, but if you do, here is the format.] 1. Safety 2. Tools 3. Fasteners 4. Industrial Print Reading 5. Mechanical Power Transmission 6. Bearings 7. Coupled Shaft Alignment 8. Lubrication 9. Seals and Packing 10. Pumps and Compressors 11. Fluid Power 12. Piping Systems 13. Preventive Maintenance – Developing and Implementing 14. Mechanical PM
Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.	Upon successful completion of this course, the student will be able to do the following: COURSE: Abilities should start with a measurable verb that students do. You do not need any punctuation at the end. Examples of some verbs you could use follow and more can be found at http://online.bcit.ca/guidelines/step2/Outclass.htm] (Note: The examples below are cognitive abilities. See the website for others.) 1. Demonstrate an understanding of maintaining a safe working environment. 2. Demonstrate an understanding of the common hand and power tools used in industry today. 3. Demonstrate an understanding of the common fasteners used in industry today. 4. Demonstrate an understanding of electrical, welding, and mechanical prints and schematics. 5. Demonstrate an understanding of the methods used to transmit mechanical energy from one point to another point in an industrial setting. 6. Demonstrate an understanding necessary to select, install, remove and troubleshoot bearings in the industrial setting. 7. Demonstrate an understanding of the methods used to align shafts. 8. Demonstrate an understanding of the need for lubrication, methods of lubrication, and the types of lubrication. 9. Demonstrate an understanding of the need for seals and packings, types of seals and packings, and demonstrate an understanding of installing and of troubleshooting seals and packings in an industrial setting. 10. Demonstrate an understanding of the pumps and compressors used in industry today and troubleshoot common problems encountered by industrial pumps and compressors.

	11. Demonstrate an understanding of the basics of a fluid power system, several of the components used in a fluid power system, and several applications of fluid power. 12. Demonstrate an understanding of the types of piping systems and understanding of the installation of piping systems. 13. Demonstrate an understanding of the necessity for and installation of a preventive maintenance program. 14. Implement a preventive maintenance program through visual inspections.
	PROGRAM: *Manufacturing Electro-Mechanical Maintenance Certificate and A.S. Degree* [Any Program Abilities should be cut and pasted here as they appear in the current catalog, including numbers. Please note that MSWord may have numbered these automatically, so when you cut and paste, make sure the numbers are correct – you will need to make them "hard" numbers rather than auto numbers.] 1. Demonstrate an understanding of Shop Safety. 2. Demonstrate an understanding industrial manufacturing machinery and equipment. 3. Demonstrate an understanding of industrial machine maintenance. 4. Demonstrate an ability to troubleshoot industrial machinery. 5. Demonstrate and ability to repair industrial machinery.
	GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)* [Select the General Education Abilities from the listing below.] No General Education outcomes.
Evaluation: List how the above outcomes will be assessed.	Assessment will be based on the following criteria: 1. Tests and quizzes
Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.	Required: Manufacturing/Mechanical lab and equipment. Desired:
Textbook(s)	Industrial Maintenance, Michael E. Brumbach, Jeffrey A. Clade, Thomson, Delmar Learning, latest edition