

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

Transfer Course  A.A. Degree Applicable Course  
(check all that apply)

**COURSE NUMBER AND TITLE:** CFT 185 Machine Tool Set Up and Maintenance

**UNIT VALUE:** 2/3/4/

**MINIMUM NUMBER OF SEMESTER HOURS:** 16/32 Lecture  
48/96 Laboratory

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS:**

**PREREQUISITE:** CFT 100

**COREQUISITE:** None.

**RECOMMENDED PREPARATION:** None.

**SCOPE OF COURSE:**

Set up, repair, rebuild and maintain tools and machines used in the wood-related industries. Machine tool operations studied and applied. Consumer information developed to acquaint student with machines and tools within the field. Planned maintenance schedules developed and applied.

**SPECIFIC COURSE OBJECTIVES:**

Students will:

1. Identify the basic principles of machine tool operation and structure.
2. Compare and contrast various machine tools and their respective maintenance, repair and rebuilding procedures.
3. Identify and analyze problems in the repair and rebuilding of machine tools.

4. Compare and contrast cost analysis of replacement versus repair.
5. Identify basic principles of electric motor operation.
6. Identify basic consumer information necessary to purchase machine tools.
7. Apply basic principles to replace knives, cutters, bearings, bushings, discs, belts, gears, switches and basic electrical components.
8. Apply principles of shop safety.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

**I. Cutting Principles**

- A. Clearance
- B. Rake
- C. Hook

**II. Machine Tool Principles**

- A. Cutting Speed
- B. Feed Rates
- C. Variable Speed
- D. Pulleys

**III. Machine Tool Components**

- A. Gears
- B. Bearings
- C. Bushings
- D. Sleeves

**IV. Electric Tool Components**

**V. Installation**

- A. Belts
- B. Discs
- C. Cutters
- D. Heads
- E. Knives

VI. Electrical Motors/Controls

- A. Relays
- B. Microswitches
- C. Magnetic Starters
- D. Switches

VII. Rebuilding

VIII. Blade and Cutter Terminology

IX. Consumer Information

**REQUIRED READING:**

Cabinet and Furniture Technology Safety Manual - (revised yearly)

Extensive instructor-obligation class information sheets, which are then summarized and included in the instructor-evaluated notebook submitted by all students.

**SUGGESTED READING:**

Connelly, Edward. Machine Tool Reconditioning. St. Paul: Machine Tool Publications, 1989.

WORKBENCH MAGAZINE. Modern Handcraft, Inc. Kansas City, MO.

FINE WOODWORKING. The Taunton Press, Inc. Newton, CT.

THE WOODWORKER'S JOURNAL. Madrigal Publishing Company. New Milford, CT.

WOODSMITH. Woodsmith Publishing Company. Des Moines, IA.

POPULAR WOODWORKER. EGW Publishing Company. Concord, CA.

WOOD. Meredith Publishing Company. Des Moines, IA.

THE AMERICAN WOODWORKER. JM Publications Inc. Hendersonville, TN.

Connelly, Edward and Daniel W. Irwin. Power Tool Maintenance. 2<sup>nd</sup> ed. New York: McGraw/Hill, 1989.

**REQUIRED WRITING:**

A written thirty page notebook is required of all students. Students will, within a period of one week, rewrite their notes taken in class, supplementing and augmenting such class notes with

information derived from suggested reading (see listing) and instructor-originated information sheets. All drawings in the notebook will be redrawn to reproduction standards. Students will complete a minimum of two written exams, each exam consists of 3-4 written pages. Questions may include mathematical and algebraic functions, and analytical problem solving.

### **OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.**

Each student will complete a thirty page notebook. Three hours of outside assignments per week. Each student is responsible for required reading. Each student is responsible for rewriting their lecture/demonstration notes taken in class, adding relevant information derived from the required reading. Proper English grammar and structure is required.

### **INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture
- laboratory
- lecture-laboratory combination
- directed study

Lecture, demonstration, and laboratory work are primary methods.

**This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

**GRADING POLICY AND STANDARDS** (include methods for determining whether the stated objectives have been met by students):

Final grades will be based on the following factors:

1. PARTICIPATION: 20%
2. TESTS: 25%
3. LEARNING PROJECT: 30%
4. NOTEBOOK AND DESIGN PAPER OR PRODUCT DEVELOPMENT: 25%

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No Number of times course may be taken for credit: 4.

If yes, identify specific provision of Division 2 Section(s) 55761-55763 and 58161 which qualifies course as repeatable: 58161 (c) (2) (A) (B).

**CONTACT PERSON:** Steve Kirby Ext. 2555