

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

_____ Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: CFT 175 Jigs and Fixtures

UNIT VALUE: 2,3,4

MINIMUM NUMBER OF SEMESTER HOURS: 64,96,128 lecture/laboratory

BASIC SKILLS REQUIREMENTS: Appropriate language, writing and computation skills

ENTRANCE REQUIREMENTS

PREREQUISITE: CFT-105

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Theory of production tooling, fixtures and jigs; design and develop practical applications of production tooling, fixtures and jigs as used in current machines with the industry. Field trips to local industries will allow student further understand tooling as used in the trades.

SPECIFIC COURSE OBJECTIVES:

The student will:

1. Compare and contrast medium production tooling devices, fixtures and jigs.
2. Identify medium production tooling devices, fixtures and jigs.
3. Evaluate tooling devices, fixtures and jigs.
4. Apply principles of tooling devices, fixtures and jigs.
5. Use industrial quality materials, fasteners, and clamping devices in the design and production of tooling devices, jigs and fixtures.
6. Identify the advantages and disadvantages of tooling usage versus non-usage.
7. Analyze the advantages and disadvantages of tooling usage versus non-usage.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Theory of Production Tooling
 - A. Repetitiveness
 - B. Productivity
 - C. Accuracy
 - D. Safety
- II. Definition
 - A. Jig
 - B. Fixture
 - C. Production tooling
 - D. Pneumatic clamping
 - 1. Offset
 - 2. Direct
- III. Fasteners
 - A. Rosan insert
 - B. Knife thread insert
 - C. Machine screw
 - 1. Types
 - 2. Application
- IV. Screws
 - A. Types
 - B. Application
- V. Adjustment Mechanism
 - A. Threaded
 - B. Turnbuckle
- VI. Clamping/Hold-down Devices
 - A. Pneumatic
 - 1. Types
 - 2. Application
 - B. Manual
 - 1. Types
 - 2. Application
 - C. Wedge devices
 - D. Other
- VII. Specific Machine Applications
 - A. Table saw
 - B. Radial arm saw
 - C. Band saw
 - D. Jointer
 - E. Drill press
 - F. Over-arm router
 - G. Lathe
- VIII. Specific Tool Applications
 - A. Router
 - B. Drill motors
 - C. Sanders

REQUIRED READING:

Nacgyszlanlancy, Sandor. Wodshop Jigs & Fixtures. Newtown, CT, The Taunton Press, 2000.
Extensive instructor-originated class information sheets.

SUGGESTED READING:

American Woodworker. Best Jigs and Techniques for Precision Woodworking. Emmaus,PA. Rodale Press, 1990.

Capotosto, Rosario. 200 Original Shop Aids & Jigs for Woodworkers. New York: Sterling Publishing Co., Inc. 1997.

Clayton, Larry. Great Shop Tips. Des Moines, IA: Meredith Corporation, 1994.

Cliff, Roger. Table Saw Techniques. New York: Sterling Publishing Co., Inc., 1984.

Copotosto, Rosario. Woodworking Wisdom. New York: Harper and Row Publishers, 1986.

Engler, Nick. Jigs, Fixtures, and Shop Furniture. Emmaus, IA: Rodale Press, 1999.

Fine Woodworking. Newton: The Taunton Press, Inc.

Richey, Jim. Fine Woodworking on Proven Shop Tips. Newtown, NJ: The Taunton Press, 1985.

The Woodworker's Journal. New Milford: Madrigal Publishing Co.

Woodsmith. Des Moines: Woodsmith Publishing Co.

Popular Woodworker. Concord: EGW Publishing Inc.

Wood. Des Moines: Meredith Publishing Co.

The American Woodworker. Hendersonville: JM Publishing Inc.

Shop Notes. Des Moines: Woodsmith Publishing Co.

Time-Life Books. Shop-Made Jigs and Fixtures. Alexandria, VA: Time-Life Books, 1999.

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 notes with information derived from suggested reading and instructor-originated information sheets. All drawing 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.

Proper English grammar and structure is required on all outside writing assignments.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

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

DISTANCE LEARNING:

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

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

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

- | | | |
|----|---|-----|
| 1. | Participation | 20% |
| 2. | Tests | 25% |
| 3. | Learning project | 30% |
| 4. | Notebook, 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 Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable: 58161 D (2) (A) (B)

CONTACT PERSON: Steve Kirby ext. 2555

SIGNATURES ON FILE