

**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-100      Fundamentals of Woodworking

**UNIT VALUE:** 2,3,4

**MINIMUM NUMBER OF SEMESTER HOURS:** 64,96,128 Lecture/Laboratory

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

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** None

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

An introductory course in design and construction of wood products. Survey use, care and selection of woodworking machines and hand tools. Explanation of the basic techniques of milling, joinery, assembly and finishing.

**SPECIFIC COURSE OBJECTIVES:**

The student will be able to:

1. Discuss and explain all aspects of shop, machine, tool and finishing safety.
2. Identify and analyze the structure of the tree as it relates to wood, grading, species selection/application, seasoning and selection.
3. Identify the basic principles of hand tool usage and operation.
4. Identify and apply sharpening principles to single-edge tools.
5. Identify the basic principles of machine tool usage and operation.
6. Identify, analyze and apply milling procedures.
7. Compare and contrast basic joinery used in furniture.
8. Identify basic principles of carcass assembly.
9. Explain basic door construction
10. Identify and determine appropriate application of adhesives, abrasives, fasteners and finishes.

## CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction
  - A. Policy
  - B. Facilities
- II. Safety
  - A. Safety Manual
  - B. Safety Examination
- III. Wood Technology
  - A. Species
    - 1. Hardwoods (Deciduous)
    - 2. Softwoods (Coniferous)
  - B. Tree Growth
    - 1. Pith
    - 2. Heartwood
    - 3. Sapwood
    - 4. Cambium
    - 5. Bark
      - a. inner bark
      - b. outer bark
    - 6. Early wood/Spring wood
    - 7. Late wood/Summer wood
    - 8. Photosynthesis
      - a. respiration
      - b. transpiration
    - 9. Cell structure
      - a. vessel
      - b. fiber
      - c. tracheid
      - d. rays
    - 10. Sections
      - a. tangential
      - b. radial
      - c. transverse
    - 11. Porosity
      - a. ring-porous
      - b. semi-ring porous
      - c. diffuse-porous
      - d. non-porous
- IV. Wood Sawing/Grading
  - A. Sawing
    - 1. Flat/Plain Sawn
    - 2. Quarter Sawn (Vertical Grain)
    - 3. Rift Sawn
  - B. Grades
    - 1. Hardwoods
      - a. FAS
      - b. Select & Better
      - c. #1 Common
      - d. #2 Common
    - 2. Softwoods

- C. Seasoning wood
  - 1. Moisture Content
    - a. Free Water
    - c. Bound Water
    - d. Fiber Saturation
    - e. Equilibrium Moisture Content
    - f. Hygroscopic Nature of Wood
  - 3. Drying Methodology
    - a. Kiln
    - b. Dehydration
    - c. Air
  - 4. Defects/grades
  - 5. Board footage
- V. Hand Tools
  - A. Saws
  - B. Planes
  - C. Chisels
  - D. Layout and Measuring Tools
- VI. Use and Care of Hand Tools
  - A. Selection
  - B. Sharpening
  - C. Rust Prevention/Care
- VII. Milling Process
  - A. Radial Arm Saw
  - B. Jointer
  - C. Planer
  - D. Table Saw
  - E. Band Saw
- VIII. Joinery
  - A. Dado
  - B. Rabbet
  - C. Dowel
  - D. Miter
  - E. Groove
- IX. Routers and Router Bits
  - A. Joinery
  - B. Decorative Edge Cutting
- X. Assembly Procedures
  - A. Adhesives
  - B. Clamps
  - C. Squaring a Carcase
- XI. Mitered Moldings
  - A. Miter Saw
  - B. Table Saw
- XII. Basic Door Construction
  - A. Doweling
  - B. Fitting to a Carcase
  - C. Installing Hinges
- XIII. Re-sawing
  - A. Table saw

- B. Band saw
- XIV. Finishing
  - A. Abrasives
  - B. Finishing Materials and Safety
  - C. Cutting and Installing Glass

**REQUIRED READING:**

1. Safety Manual
2. Safety Examination Booklet
3. Extensive instructor generated handouts
4. Selected published articles on furniture making provided by the instructor

**SUGGESTED READING:**

Feirer, John L. Furniture and Cabinetmaking. Peoria, PA: Charles A. Bennett Company, Inc., 1983  
Fine Woodworking. The Taunton Press, Inc., Newtown, CT.  
The Woodworker's Journal. Madrigal Publishing Company. New Milford, CT.  
Woodsmith. Woodsmith Publishing Company. Des Moines, IA.  
Wood. Meredith Publishing Company. Des Moines, IA.

**REQUIRED WRITING:**

1. Student generated, 120 page, three-ring binder notebook of class handouts and class notes. The student will within a period of one week, rewrite their class notes taken in class, supplementing and augmenting such class notes with information derived from lectures, laboratory exercises, required and suggested reading.
2. One page, self-generated summary of the semester experience.

**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.**

Students are expected to complete their reading assignments, writing assignments, study for exams, complete take-home exams and practice additional tool sharpening outside of class.

**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):

Final grade will be based on the following factors:

- |    |                    |     |
|----|--------------------|-----|
| 1. | Participation      | 20% |
| 2. | Tests/Examinations | 25% |
| 3. | Learning Project   | 30% |
| 4. | Notebook           | 25% |

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

Yes  No  Number of times course may be taken for credit: \_\_\_\_\_

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Russ Filbeck ext. 2812

**SIGNATURES ON FILE**