BMGT 130 Management/Leadership Issues (3)
3 hours lecture
Transfer acceptability: CSU
Examination of current issues in management and leadership including: organizing, staffing, decision making, motivating, communicating, and applying such skills to a business organization. Concepts related to group dynamics, change, conflict, organizational communications, and productivity are explored.

BMGT 197 Business Management Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Transfer acceptability: CSU
Topics in Business Management. See Class Schedule for specific topic offered. Course title will designate subject covered.

BMGT 295 Directed Study in Business Management (1,2,3)
3, 6 or 9 hours laboratory
Prerequisite: Approval of project or research by the instructor and Department Chair
Transfer acceptability: CSU
Independent study for students who have demonstrated skills and or proficiencies in business management subjects and have the initiative to work independently on projects outside the context of regularly scheduled classes. Students will work under the supervision of an instructor.

Cabinet and Furniture Technology (CFT)

Contact the Trade and Industry Department for further information.
(760) 744-1150, ext. 2545
Office: T-1
For transfer information, consult a Palomar College Counselor.

Associate in Arts Degrees -
AA Degree requirements are listed in Section 6 (green pages).
- Cabinetmaking and Furniture Design
- Cabinetmaking and Millwork
- Furniture Making

Certificates of Achievement -
Certificate of Achievement requirements are listed in Section 6 (green pages).
- Cabinetmaking and Furniture Design
- Cabinetmaking and Millwork
- Furniture Making

PROGRAMS OF STUDY

Cabinetmaking and Furniture Design

Provides the student with the theory and skills needed for employment in the field of cabinetmaking and furniture design.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CFT 100	Fundamentals of Woodworking	2,3,4
CFT 105	Machine Woodworking/Furniture	2,3,4
CFT 110	Machine Tool Joinery I	2,3,4
CFT 111	Machine Tool Joinery II	2,3,4
CFT 153	Studio Furniture Design I	2,3,4
CFT 165	Cabinet/Face Frame Construction	2,3,4
CFT 167	Cabinetmkg/32mm European Construction	2,3,4
CFT 195	Finishing Tech/Touch-Up/Repair	2,3,4
Group One (Select 12 units)		
CFT 149	Hand Joinery I	2,3,4
CFT 150	Hand Joinery II	2,3,4
CFT 151	Veneering Technology I	2,3,4
CFT 152	Veneering Technology II	2,3,4
CFT 155	Classic American Chair Designs	2,3,4
CFT 157	Chair/Seating Prototype Construction	2,3,4
CFT 158	Chair/Seating Production Manufacturing	2,3,4
CFT 161	Tables/Prototype Construction	2,3,4
CFT 162	Tables/Production Manufacturing	2,3,4
Group Two (Select 12 units)		
CFT 120	Advanced Furniture Lab	.5-3
CFT 130	Stringed Instrument Making	2,3,4
CFT 141	Making Woodworking Tools	.5,1,2,3
CFT 142	The Art and Craft of Planemaking	.5,1,2,3
CFT 143	Decorative Box Making	2,3,4
CFT 144	Production Furniture Making (Toys)	.5,1
CFT 154	Studio Furniture Design II	2,3,4
CFT 156	Advanced Classic American Chair Design	2,3,4
CFT 163	Plastic Laminate Fabrication Techniques	.5,1
CFT 164	Cabinet Installation	.5,1
CFT 166	Cabinetmaking/Production & Manufacturing	2,3,4
CFT 168	Cabinetmaking/Architectural Millwork	2,3,4
CFT 169	Cabinetmaking/Computer Cabinet Layout	.5,1,2,3
CFT 170	Workbench Design and Production	2,3,4
CFT 171	Furniture for the Wood Shop	2,3,4
CFT 172	Turbo CAD for Cabinets and Furniture	2,3,4
CFT 175	Jigs and Fixtures	2,3,4
CFT 180	Wood Bending And Lamination/Wood Tech.	2,3,4
CFT 185	Machine Tool Set Up and Maintenance	2,3,4
CFT 186	Machine Tool/Production Carving	1,2,3,4
CFT 187	Introduction to Carving	1,2,3,4
CFT 188	Intermediate Carving	1,2,3,4
CFT 189	Advanced Carving	1,2,3,4
CFT 190	Specialty and Manufactured Hardware	.5,1,2,3
CFT 196	Special Problems in CFT	1-6
CFT 197	Cabinet and Furniture Technology Topics	.5-4
CFT 198	Advanced Wood Finishing	2,3,4
CFT 295	Directed Study in Woodworking	1,2,3,4,5,6
TOTAL UNITS		**40 – 56**

Cabinetmaking and Millwork

Provides the student with the theory and skills needed for employment in the cabinet and millwork industry.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CFT 100	Fundamentals of Woodworking	2,3,4
CFT 105	Machine Woodworking/Furniture	2,3,4
CFT 165	Cabinet/Face Frame Construction	2,3,4
CFT 167	Cabinetmkg/32mm European Const	2,3,4
CFT 168	Cabinetmaking/Architectural Millwork	2,3,4
CFT 195	Finishing Tech/Touch-Up/Repair	2,3,4
Group One (Select 12 units)		
CFT 110	Machine Tool Joinery I	2,3,4
CFT 111	Machine Tool Joinery II	2,3,4
CFT 151	Veneering Technology I	2,3,4
CFT 152	Veneering Technology II	2,3,4
CFT 153	Studio Furniture Design I	2,3,4
CFT 166	Cabinetmaking/Production & Manufacturing	2,3,4
CFT 169	Cabinetmaking/Computer Cabinet Layout	.5,1,2,3
CFT 185	Machine Tool Set-up and Maintenance	2,3,4
Group Two (Select 12 units)		
CFT 97	Cabinet and Furniture Technology Topics	.5 4
CFT 120	Advanced Furniture Lab	.5-3
CFT 142	The Art and Craft of Planemaking	.5,1,2,3
CFT 143	Decorative Box Making	2,3,4
CFT 149	Hand Joinery I	2,3,4
CFT 150	Hand Joinery II	2,3,4

CFT 154	Studio Furniture Design II	2,3,4
CFT 155	Classic American Chair Designs	2,3,4
CFT 156	Adv Classic American Chair Design	2,3,4
CFT 157	Chair/Seating Prototype Construction	2,3,4
CFT 158	Chair/Seating Production Manufacturing	2,3,4
CFT 161	Tables/Prototype Construction	2,3,4
CFT 162	Tables/Production Manufacturing	2,3,4
CFT 163	Plastic Laminate Fabrication Techniques	.5,1
CFT 164	Cabinet Installation	.5,1
CFT 170	Workbench Design and Production	2,3,4
CFT 171	Furniture for the Wood Shop	2,3,4
CFT 172	Turbo CAD for Cabinets and Furniture	2,3,4
CFT 175	Jigs and Fixtures	2,3,4
CFT 180	Wood Bending And Lamination/Wood Tech.	2,3,4
CFT 186	Machine Tool/Production Carving	1,2,3,4
CFT 187	Introduction to Carving	1,2,3,4
CFT 188	Intermediate Carving	1,2,3,4
CFT 189	Advanced Carving	1,2,3,4
CFT 190	Specialty and Manufactured Hardware	.5,1,2,3
CFT 196	Special Problems in CFT	1-6
CFT 197	Cabinet and Furniture Technology Topics	.5-4
CFT 198	Advanced Wood Finishing	2,3,4
CFT 295	Directed Study in Woodworking	1,2,3,4,5,6
TOTAL UNITS		**36 - 48**

Furniture Making

Provides the student with the theory and skills needed for employment in the field of furniture production and manufacturing.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		**Units**
CFT 100	Fundamentals of Woodworking	2,3,4
CFT 105	Machine Woodworking/Furniture	2,3,4
CFT 110	Machine Tool Joinery I	2,3,4
CFT 111	Machine Tool Joinery II	2,3,4
CFT 151	Veneering Technology I	2,3,4
CFT 152	Veneering Technology II	2,3,4
CFT 153	Studio Furniture Design I	2,3,4
CFT 154	Studio Furniture Design II	2,3,4
CFT 157 or CFT 161	Chair/Seating Prototype Construction Tables/Prototype Construction	2,3,4
CFT 195	Finishing Tech/Touch-Up/Repair	2,3,4
Group One (Select 5-6 units)		
CFT 149	Hand Joinery I	2,3,4
CFT 150	Hand Joinery II	2,3,4
CFT 155	Classic American Chair Designs	2,3,4
CFT 180	Wood Bending And Lamination/Wood Tech.	2,3,4
CFT 187	Introduction to Carving	1,2,3,4
CFT 188	Intermediate Carving	1,2,3,4
Group Two (Select 5-6 units)		
CFT 97	Cabinet and Furniture Technology Topics	.5 4
CFT 120	Advanced Furniture Lab	.5-3
CFT 130	Stringed Instrument Making	2,3,4
CFT 141	Making Woodworking Tools	.5,1,2,3
CFT 142	The Art and Craft of Planemaking	.5,1,2,3
CFT 143	Decorative Box Making	2,3,4
CFT 144	Production Furniture Making (Toys)	.5,1
CFT 156	Advanced Classic American Chair Design	2,3,4
CFT 158	Chair/Seating Production Manufacturing	2,3,4
CFT 162	Tables/Production Manufacturing	2,3,4
CFT 165	Cabinet/Face Frame Construction	2,3,4
CFT 166	Cabinetmaking/Production & Manufacturing	2,3,4
CFT 167	Cabinetmaking/32mm European Construction	2,3,4
CFT 168	Cabinetmaking/Architectural Millwork	2,3,4
CFT 169	Cabinetmaking/Computer Cabinet Layout	.5,1,2,3
CFT 170	Workbench Design and Production	2,3,4
CFT 171	Furniture for the Wood Shop	2,3,4
CFT 172	Turbo CAD for Cabinets and Furniture	2,3,4
CFT 175	Jigs and Fixtures	2,3,4
CFT 185	Machine Tool Set Up and Maintenance	2,3,4
CFT 186	Machine Tool/Production Carving	1,2,3,4
CFT 189	Advanced Carving	1,2,3,4
CFT 190	Specialty and Manufactured Hardware	.5,1,2,3
CFT 196	Special Problems in CFT	1-6
CFT 197	Cabinet and Furniture Technology Topics	.5-4
CFT 198	Advanced Wood Finishing	2,3,4
CFT 295	Directed Study in Woodworking	1,2,3,4,5,6
TOTAL UNITS		**30 - 52**

COURSE OFFERINGS

Courses numbered under 100 are not intended for transfer credit.

CFT 97 Cabinet and Furniture Technology Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to class schedule.
Note: May be taken 4 times
Topics in Cabinet and Furniture Technology. See Class Schedule for specific topic covered. Course title will designate subject covered.

CFT 100 Fundamentals of Woodworking (2,3,4)
4, 6, or 8 hours lecture/laboratory
Transfer acceptability: CSU
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.

CFT 105 Machine Woodworking/Furniture (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100
Note: May be taken 2 times
Study, design, and development of practical applications for basic cabinet construction as utilized by the wood products industry. Includes partitions, face frame, carcase, and basic door and drawer construction. Operation of woodworking machines, tools and processes, techniques, and care and suitability of tools and machines.

CFT 110 Machine Tool Joinery I (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times; maximum of 4 completions in any combination of CFT 110, CFT 111
Through the construction of a specific furniture project, students will advance to a sophisticated level of joinery and design-utilizing mortise and tenon, dovetails, frame and panel, and other joinery appropriate to fine furniture. With the addition of advanced machinery training, students will be able to develop and build a custom design of their choice, creating heirloom furniture in either traditional or contemporary styling.

CFT 111 Machine Tool Joinery II (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 110
Note: May be taken 3 times; maximum of 4 completions in any combination of CFT 110, CFT 111
Completion of student built cabinet furniture project that incorporated solid wood and traditional joinery in its design. Students will explore door and drawer construction methods, furniture hardware, and various finishing choices. Creation of special moldings and spindle turnings for decorating the carcase will also be explored.

CFT 120 Advanced Furniture Lab (.5,1,1.5,2,2.5,3)
1.5, 3, 4.5, 6, 7.5, or 9 hours laboratory
Prerequisite: CFT 100

Note: May be taken 4 times
Laboratory for students who need additional lab time to complete difficult, complex projects. Students will work under the supervision of an instructor.

CFT 130 Stringed Instrument Making (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100
Note: May be taken 4 times
Through the fabrication of a steel stringed guitar, students will study the: history, tone theory, construction processes, materials, finishing and set up of stringed instruments. Students will work together, production style, milling raw lumber from local sources into guitar part blanks. Students will then work individually constructing their own guitar. Traditional and modern methods of construction and fabrication are explored.

CFT 141 Making Woodworking Tools (.5,1,2,3)
1, 2, 4, or 6 hours lecture/laboratory
Note: May be taken 4 times
Making traditional woodworking tools used to make furniture and chairs. Topics include the history and uses of tools, materials and design, layout of the stock, equipment needed to make and finish the tools, sharpening and fitting the blades, forging and heat treating steel parts. Types of tools include spoke shaves, shaving horses, steaming devices and bending forms.

CFT 142 The Art and Craft of Planemaking (.5,1,2,3)
1, 2, 4, or 6 hours lecture/laboratory
Prerequisite: CFT 100
Note: May be taken 3 times
This course will teach students to make wooden hand planes. Through the use of lecture, handouts, demonstrations and videos, the following topics will be covered: the history of planemaking; tuning and using wooden and metal planes; designing a plane; making and tuning laminated planes; cutting, tempering and sharpening a plane iron; designing, making and using a wooden plane.

CFT 143 Decorative Box Making (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 2 times
Concentrates on the skills and techniques needed to make finely crafted heirloom quality boxes. Types of boxes include: jewelry, cigar humidor, and silver chest. Topics include: design, function, selection of materials, construction techniques, partitions, linings, hardware, assembly techniques, hinge installation, and finishing techniques.

CFT 144 Production Furniture Making (Toys) (.5,1)
1 or 2 hours lecture/laboratory
Note: May be taken 4 times
Methods and techniques of manufacturing production are learned through lecture and demonstration. Skills are acquired as these methods and techniques are applied in extensive lab work in a production mode. To enable the production of relatively large quantities with varied complexity, this course utilizes the manufacture of quality wooden toys, which are donated to local charities.

CFT 149 Hand Joinery I (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 2 times
Exploration of hand tool techniques with application to fine furniture. Skills will be developed through the construction of sample joints and a simple project. Topics include: marking and layout tools, cutting tools, use of the workbench and its accessories, hand saws and their use, Japanese vs. Western tools, dovetail joinery, mortise and tenon joinery, squaring and sizing with a hand plane, sharpening hand tools and building a simple carcase.

CFT 150 Hand Joinery II (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 149
Note: May be taken 2 times
Comprehensive study of specialized woodworking techniques. The emphasis of this course will be on the development of hand tool skills. Learning exercises will be completed making traditional joinery typical of fine furniture.

CFT 151 Veneering Technology I (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 2 times
Introduction to the use of veneers in furniture making. Topics include: understanding veneer as a material, cutting and seaming veneer, pressing veneer using traditional and modern methods, creating sunbursts and other multi-piece matches, using and maintaining various cutting tools and sawing your own veneer.

CFT 152 Veneering Technology II (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 151
Note: May be taken 2 times
Study and practice of advanced veneering techniques which includes working with radius shapes, hand and machine marquetry techniques, hammer veneering, and installation of bandings and stringings. Students will demonstrate their abilities in the construction of a small piece of furniture.

CFT 153 Studio Furniture Design I (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 2 times
Exploration of historical design concepts and their application to contemporary work. Development of drawing skills needed to design one of a kind studio furniture.

CFT 154 Studio Furniture Design II (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 153
Note: May be taken 2 times
Implementation of students' design concepts created in CFT 153. Exploration of market opportunities and client relationships.

CFT 155 Classic American Chair Designs (2,3,4)
4, 6, or 8 hours lecture/laboratory
Note: May be taken 4 times; maximum of 4 completions in any combination of CFT 155, CFT 156
Chair making which emphasizes the use of traditional chair making tools to shape raw wood into chair parts. Topics include the history of Windsor and Ladder Back chair designs; harvesting raw materials from a tree; proper sharpening of the hand tools; shaping, steam bending, kiln drying and assembling the chair parts; seat weaving; and traditional finishing appropriate to each chair style.

CFT 156 Advanced Classic American Chair Designs (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 155
Note: May be taken 4 times; maximum of 4 completions in any combination of CFT 155, CFT 156
Chair making which emphasizes the use of traditional chair making tools to shape raw wood into chair parts. Skill development and improved craftsmanship is emphasized while learning to make more complex chairs. Advanced chair designs include: bow back, continuous arm, writing arm, double and triple settees and fan back Windsor chairs; Appalachian style three-slat side chair, four-slat arm chair, bar stools, youth rocker and six-slat rocking chair.

CFT 157 Chair and Seating/Prototype Construction (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times
In depth study of production chair making. History of chair making and seating. Design and application of pattern making techniques on student selected projects.

CFT 158 Chair and Seating/Production Manufacturing (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 157
Note: May be taken 3 times
Chair and seating construction; production and advanced machine tool techniques as they relate to chair making. Fine joinery, theory, and advanced techniques.

CFT 161 Tables/Prototype Construction (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times
Table design and construction. Machine tool operations necessary to produce various table leg, trussel, and base designs.

CFT 162 Tables/Production Manufacturing (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 161
Note: May be taken 3 times
Development and refinement of table making skills, processes, and procedures. Construction of extension and drop leaf style tables. Joinery and hardware unique to table making.

CFT 163 Plastic Laminate Fabrication Techniques (.5,1)
1 or 2 hours lecture/laboratory
Note: May be taken 2 times
This course examines the manufacturing process for plastic laminate products, including tools, adhesives, jigs, application and installation techniques. Lectures, demonstrations, and hands-on exercises will give students the opportunity to develop the proficiency and knowledge to design, build and install plastic laminate products.

CFT 164 Cabinet Installation (.5,1)
1 or 2 hours lecture/laboratory
Note: May be taken 2 times
Installation of both face frame and European (32mm) cabinetry. Topics include: Understanding wall structure, measuring and planning for installation, review of cabinet construction with emphasis on installation, in-depth discussion of the tools, jigs, and techniques used for installation, installation of lower face frame cabinets, installation of upper European (32mm) cabinets, finished scribing of molding.

CFT 165 Cabinetmaking/Face Frame/Construction (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times
Traditional face frame cabinet construction as applied in kitchens and bathrooms with design, layout, and material analysis. Hands on experience in carcase construction, face frames, partitions, and construction of doors and drawers.

CFT 166 Cabinetmaking/Production and Manufacturing (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 165
Note: May be taken 3 times
Designed to give students the knowledge and ability to enter the cabinetmaking business. Manufacturing and production techniques will be examined along with design, assembly, and installation. Students will learn to bid on jobs, estimate materials, provide client satisfaction, and produce quality work on a profitable basis.

CFT 167 Cabinetmaking/32mm European Construction (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times
European 32mm production methods as used in cabinetmaking. European design and space utilization; European machinery, hardware, and the latest in European systems. Influence of the 32mm system on the American cabinetmaking industry.

CFT 168 Cabinetmaking/Architectural Millwork (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 3 times
Historical and modern architectural millworking techniques used in frame and panel systems, doors, fireplaces, wall systems, staircases, and built in components. Hands on experience on student selected projects may include woodcarving, woodturning, construction of doors and windows and the production/installation of moldings.

CFT 169 Cabinetmaking/Computer Cabinet Layout (.5,1,2,3)
1, 2, 4, or 6 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 4 times
Selection and application of appropriate software as developed for the cabinet industry. Development of industrial standard cabinet plans and specifications utilizing personal-size computer and software programs.

CFT 170 Workbench Design and Production (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100
Note: May be taken 2 times
Design and construction of the most basic of woodworking tools, a workbench. Process rough lumber to maximize yield and minimize waste. Students will be allowed to customize the size of their bench to fit individual requirements within limits. However, mass-production techniques will not be sacrificed. In addition, a broad review of woodworking vises and other bench accessories will be conducted so that students will be able to further customize their own bench.

CFT 171 Furniture for the Wood Shop (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100
Note: May be taken 4 times
The individual student will be required to design and construct one or more projects from a broad range of furniture-quality accessories for the woodworking shop such as tool totes, tool boxes, chests and cabinets (both stationary and portable), step stools, saw horses or workbench accessories. Particular attention will be paid to artistic and functional design, utility, material selection and joinery techniques. Skills in spindle turning, marquetry and inlay, compound angle joinery, coopering, and veneering will be developed and employed depending on the project selected.

CFT 172 TurboCAD for Cabinets & Furniture (2,3,4)
4, 6, or 8 hours lecture/laboratory
Note: May be taken 3 times
Introduction to TurboCAD and to basic CAD concepts and their direct application to the design and drawing of custom cabinets and furniture, as an alternative to "pencil & paper" drawing. Topics will include: extensive 2D and 3D drawing, modifying, and editing tools; the production of measured, shop drawings as an essential first step in the construction of a project; rendering, as a tool in the visualization of concept design.

CFT 175 Jigs and Fixtures (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 4 times
Theory of production tooling, fixtures, and jigs; design and develop practical applications of production tooling, fixtures and jigs as used in current machines within the industry. Field trips to local industries will allow students to further understand tooling as used in the trades.

CFT 180 Wood Bending and Lamination/ Wood Technology (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 4 times
Principles and practical applications of both wood bending and lamination. Mechanical and chemical means of bending wood studied and developed, specific structure and properties of wood are developed.

CFT 185 Machine Tool Set up and Maintenance (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100

Note: May be taken 4 times
Set up, repair, rebuild, and maintain tools and machines used in the wood-related industries. Machine tool operations studies and applied. Consumer information developed to acquaint student with machines and tools within the field. Planned maintenance schedules developed and applied.

CFT 186 Machine Tool/Production Carving (1,2,3,4)
2, 4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 105
Note: May be taken 4 times for a maximum of 9 units
Introductory woodcarving course using hand and power machine tools. Design considerations, carving techniques, production carving, and incorporation of woodcarving into cabinetmaking, furniture construction, and architectural millwork.

CFT 187 Introduction to Carving (1,2,3,4)
2, 4, 6, or 8 hours lecture/laboratory
Note: May be taken 4 times; maximum of 4 completions in any combination of CFT 187, CFT 188, CFT 189
This beginning course in carving introduces students to the tools and techniques used in carving wood. The course includes specifics of available tools, their proper handling and maintenance, as well as discussions of layout and carving methods as applied to furniture and architectural millwork.

CFT 188 Intermediate Carving (1,2,3,4)
2, 4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 187
Note: May be taken 4 times; maximum of 4 completions in any combination of CFT 187, CFT 188, CFT 189
This course examines methods relating to both low and high relief carving, as well as incised lettering. More complex layout and carving techniques are undertaken. Concepts such as setting-in and blocking-out are introduced while modeling, introduced in the beginning course, is more fully developed.

CFT 189 Advanced Carving (1,2,3,4)
2, 4, 6, or 8 hours lecture/laboratory
Note: May be taken 4 times; maximum of 4 completions in any combination of CFT 187, CFT 188, CFT 189
Advanced carving is a topical study of specific carving applications as they relate to furniture or architectural millwork. Topics are largely gathered from period styles and may include ball and claw feet, Newport shells, and Philadelphia rococo, as well as contemporary interpretations, Art Nouveau, and maritime themes. See Class Schedule for specific period styles/themes to be emphasized.

CFT 190 Specialty and Manufactured Hardware (.5,1,2,3)
1, 2, 4, or 6 hours lecture/laboratory
Note: May be taken 4 times
Survey of traditional, contemporary, European, and Oriental market hardware found in the cabinet and furniture industries, including consumer applications. Exploration and application of various system solutions for given problem(s). Study and application of hinges, K D fasteners, fastening systems, joint systems, drawer guides, and runners.

CFT 195 Finishing Technology/Touch Up and Repair (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 100
Finishes as used in the wood-related fields. Study and use of penetrating, surface, epoxy, catalytic, and resin surface finishes. Preparation to include staining, filling, and glazing. Chemistry of lacquers, urethanes, oils, and enamels. Instruction and practice in the touch-up of existing finishes through use of French polishing, burn-in sticks, and dry aniline staining. Repair of fine furniture as necessary prior to finishing.

CFT 196 Special Problems in Cabinet and Furniture Technology (1,2,3,4,5,6)
3, 6, 9, 12, 15, or 18 hours laboratory
Prerequisite: CFT 100 or 105
Note: May be taken 4 times
A research course through individual contract concentrating in the area of Cabinet and Furniture Technology.

CFT 197 Cabinet and Furniture Technology Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Topics in Cabinet and Furniture Technology. See class schedule for specific topic covered. Course title will designate subject covered.

CFT 198 Advanced Wood Finishing (2,3,4)
4, 6, or 8 hours lecture/laboratory
Prerequisite: CFT 195
Wood finishing history, processes, and application of multiple colors and complex finishes on furniture. Topics include media, solvents and tools used to apply media, faux finishes, gilding, coloring the finishing materials, turning broken or missing parts, and veneer repair.

CFT 295 Directed Study in Woodworking (1,2,3,4,5,6)
48, 96, 144, 192, 240, or 288 hours laboratory
Prerequisite: CFT 105
Note: May be taken 4 times
Independent study in furniture making, cabinet making, shop layout, design, operation, and maintenance for students who have demonstrated advanced skills and/or proficiencies in Cabinet and Furniture Technology subjects and have the initiative to work independently on projects or research outside the context of regularly scheduled classes. Registration requires prior approval of supervising instructor.

Chemistry (CHEM)

Contact the Chemistry Department for further information.
(760) 744-1150, ext. 2505
Office: NS-355B

Associate in Arts Degrees -
AA Degree requirements are listed in Section 6 (green pages).
• Chemistry

Certificates of Achievement -
Certificate of Achievement requirements are listed in Section 6 (green pages).
• Chemistry

PROGRAM OF STUDY

Chemistry

Provides the background to begin upper division course work and prepares the student for entry level jobs that require a knowledge of chemistry. The student is advised to check with the institution to which he/she wishes to transfer for additional courses, which may be required.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CHEM 110	General Chemistry	3
CHEM 110L	General Chemistry Laboratory	2
CHEM 115	General Chemistry	3
CHEM 115L	General Chemistry Laboratory	2
CHEM 210	Analytical Chemistry	5
CHEM 220	Organic Chemistry	5
CHEM 221	Organic Chemistry	5
TOTAL UNITS		**25**

COURSE OFFERINGS

Courses numbered under 50 are non-degree courses.
Courses numbered under 100 are not intended for transfer credit.