



El Camino College
 COURSE OUTLINE OF RECORD – Official

Course Acronym:	CTEC
Course Number:	221
Descriptive Title:	Drawer Systems
Division:	Industry and Technology
Department:	Construction Technology
Course Disciplines:	Cabinet Making AND Furniture Making
Catalog Description:	<p>This course is the study of dimensioning and drawer fabrication, use and installation of slide systems, and commercial jigs and installation tools.</p> <p><i>Note: Completion of the degree or certificate requirements qualifies students to receive a maximum of two years credit toward the California State Contractor's License for the C-6 Cabinet, Millwork and Finish Carpentry examination.</i></p>
Prerequisite:	Construction Technology 200 or Construction Technology 201 or Construction Technology 202 or Construction Technology 203 with a minimum grade of C or concurrent enrollment
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	1.5
Hours Laboratory (per week):	3
Outside Study Hours:	3
Total Course Hours:	81
Course Units:	2.5
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	03/18/2013
Transfer UC:	No
Effective Date:	
General Education: ECC	

	Term:
	Other:
	CSU GE:
	Term:
	Other:
	IGETC:
	Term:
	Other:
Student Learning Outcomes:	<p>SLO #1 Blum 230 Drawer Slides</p> <p>Using manufacturer's installation jig, students will install Blum 230 drawer slides.</p> <p>SLO #2 Ecopress Line Boring</p> <p>Students will set up Ecopress in line boring mode.</p> <p>SLO #3 Blum Soft-Close Drawer Slides</p> <p>Students will install and adjust Blum motion soft-close drawer slides.</p>
Course Objectives:	<ol style="list-style-type: none"> 1. Complete a written comprehensive woodshop safety test with 100% accuracy. 2. Install side-mounted drawer slides using a jig. 3. Using a jig, drill for and install front locking plate for soft-close slides. 4. Install drawer slides using commercial rear mount hardware. 5. Bore locating holes in drawer box for rear locking device using a jig.
Major Topics:	<p>I. OVERVIEW OF DRAWER SYSTEMS (1.5 hours, lecture)</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> A. Shop procedures B. Vendors and suppliers C. Resources and references <p>II. OVERVIEW OF DRAWER SYSTEMS (3 hours, lab)</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> A. Cages and storerooms B. Toolroom C. Clamping and gluing area D. Finishing room E. Proper shop organization F. Clean-up procedures <p>III. SAFETY (3 hours, lecture)</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> A. Safety procedures B. Safety exam <p>IV. SAFETY (6 hours, lab)</p>

1.
 - A. Proper operation of woodworking equipment
 - B. Safety concerns
 - C. Safe lab practices

V. FACE FRAME BOTTOM-MOUNT DRAWER INSTALLATION (8 hours, lecture)

1.
 - A. Bottom mount $\frac{3}{4}$ extension
 - B. Bottom mount full extension
 - C. Required clearance
 - D. Types of box construction
 - E. Installation of slides using jig

VI. FACE FRAME BOTTOM-MOUNT DRAWER INSTALLATION (16 hours, lab)

1.
 - A. Fabricating sample face frame cabinet mock-up
 - B. Calculating box dimensions
 1. $\frac{3}{4}$ extension
 2. Full extension
 - C. Constructing drawer box using butt joint and glue coated nails
 - D. Installing slides in cabinet
 - E. Making adjustments
 - F. Cabinet mock-up and full extension slides
 - G. Constructing box using rabbet dado joints
 - H. Installing slides

VII. FACE FRAME SOFT-CLOSE DRAWER INSTALLATION (8 hours, lecture)

1.
 - A. Soft-close bottom mount
 1. Reviewing manufacturer's specification sheet
 2. Calculating box dimensions
 3. Comparing relieved back to notched back
 4. Dovetail box construction
 5. Boring for rear locking device using jig
 6. Boring for front locking device using jig
 7. Installation of front clips
 - B. Installation of a slide in cabinet

VIII. FACE FRAME SOFT-CLOSE DRAWER INSTALLATION (16 hours, lab)

1.
 - A. Fabricating drawer box relieved back
 - B. Fabricating drawer box notched back
 - C. Installing front locking devices to box
 - D. Installing slides in cabinet using side mount technique
 - E. Installing slides using commercial rear mount hardware
 - F. Repeating installation in frameless cabinet

	<p>IX. SIDE MOUNT SLIDES (6.5 hours, lecture)</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> A. Full extension B. Over travel C. Reviewing manufacturer's box dimensioning specifications D. Slide placement in face frame cabinet E. Slide placement in faceless cabinet F. Installing drawer box <p>X. SIDE MOUNT SLIDES (13 hours, lab)</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> A. Constructing two drawer boxes (dovetail construction) B. Installing full extension slides to box C. Installing over travel slides to box D. Installing matching slide halves in cabinet E. Installing drawer box and adjusting full extension F. Installing drawer box and adjusting over travel
Total Lecture Hours:	27
Total Laboratory Hours:	54
Total Hours:	81
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Install a front locking device to a drawer box. When completed, consult instructor for evaluation.
Critical Thinking Assignment 1:	<p>Referencing manufacturer's specifications and dimensions of a drawer opening, calculate drawer width using:</p> <ol style="list-style-type: none"> a. 1/2" side material b. 5/8 " side material <p>Document calculations on project drawing. Submit drawing to the instructor.</p>
Critical Thinking Assignment 2:	Using manufacturer's jig, drill screw holes in drawer box for front locking clips. When completed, consult the instructor for evaluation.
Other Evaluation Methods:	Class Performance Performance Exams
Instructional Methods:	Demonstration Lab Lecture
If other:	
Work Outside of Class:	Other (specify), Required reading
If Other:	Research

Up-To-Date Representative Textbooks:	Grass America, <u>GRASS AMERICA MANUFACTURER'S MANUAL</u> , Grass America, 2018. William Umstattd and Charles Davis, <u>MODERN CABINETMAKING</u> , Goodheart Willcox, 2016. (Discipline Standard)
Alternative Textbooks:	
Required Supplementary Readings:	
Other Required Materials:	Safety glasses Ear plugs Dust mask Closed toe shoes
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Construction Technology 200 or Construction Technology 201 or Construction Technology 202 or Construction Technology 203
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	<p>Ability to use woodshop machinery and basic hand tools.</p> <p>CTEC 200 -Set-up table saw and rip plywood.</p> <p>CTEC 203 -Set-up and use router to machine a rabbet cut.</p> <p>CTEC 201 -Fabricate a face frame.</p> <p>CTEC 202 -Set-up and use line boring machine.</p> <p>Ability to interpret manufacturer's specifications.</p> <p>CTEC 201 -Fabricate a face frame.</p> <p>CTEC 203 -Demonstrate ability to understand and interpret factory appliance cut out specifications.</p> <p>CTEC 202 -Set-up and use line boring machine.</p> <p>CTEC 200 -Interpret perspective cabinet drawings.</p> <p>Ability to perform basic mathematical computations.</p> <p>CTEC 201 -Set-up and calibrate a dado head.</p> <p>CTEC 203 -Demonstrate ability to understand and interpret factory appliance cut out specifications.</p>

	<p>CTEC 200 -Interpret perspective cabinet drawings.</p> <p>CTEC 202 -Join lumber to increase width and change grain direction.</p> <p>Ability to read a standard tape measure.</p> <p>CTEC 201 -Set-up and calibrate a dado head.</p> <p>CTEC 200 -Set-up panel saw and crosscut plywood.</p> <p>CTEC 203 -Square rough lumber into usable stock.</p> <p>CTEC 202 -Join lumber to increase width and change grain direction.</p>
Requisite Skill:	or concurrent enrollment
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	If students enroll in one of the basic cabinet making classes concurrently, Construction Technology 200, 201, 202 or 203, students will have the skills needed to succeed in this course.
Requisite course:	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Jack Selph
Date:	10/09/2012
Original Board Approval Date:	03/18/2013
Last Reviewed and/or Revised by:	Jack Selph
Date:	02/15/2023
Last Board Approval Date:	07/17/2023 effective FALL 2024

