

INDUSTRY AND TECHNOLOGY
Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Program: Construction Technology	Number of Courses: 22	Date Updated: 09.18.2014	Submitted by: SueEllen Warren, ext. 4519 Renee Newell, ext. 3308
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ILOs	1. Critical Thinking <i>Students apply critical, creative and analytical skills to identify and solve problems, analyze information, synthesize and evaluate ideas, and transform existing ideas into new forms.</i>	2. Communication <i>Students effectively communicate with and respond to varied audiences in written, spoken or signed, and artistic forms.</i>	3. Community and Personal Development <i>Students are productive and engaged members of society, demonstrating personal responsibility, and community and social awareness through their engagement in campus programs and services.</i>	4. Information Literacy <i>Students determine an information need and use various media and formats to develop a research strategy and locate, evaluate, document, and use information to accomplish a specific purpose. Students demonstrate an understanding of the legal, social, and ethical aspects related to information use.</i>
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SLO-PLO-ILO ALIGNMENT NOTES:

Mark boxes with an 'X' if: SLO/PLO is a major focus or an important part of the course/program; direct instruction or some direct instruction is provided; students are evaluated multiple times (and possibly in various ways) throughout the course or are evaluated on the concepts once or twice within the course.

DO NOT mark with an 'X' if: SLO/PLO is a minor focus of the course/program and some instruction is given in the area but students are not formally evaluated on the concepts; or if the SLO/PLO is minimally or not at all part of the course/program.

PLOs	PLO to ILO Alignment			
	<i>(Mark with an X)</i>			
	1	2	3	4
PLO #1 Safely Operating Industry Tools Upon successful completion of the courses in this program, students will be able to identify and safely operate tools commonly used in the construction and/or cabinetmaking industry.	X			
PLO #2 Project Estimating Upon successful completion of the Construction Technology program, students will be able to reference a set of plans and produce a complete materials list.	X			
PLO #3 Project Layout and Construction Upon successful completion of the Construction Technology program, students will be able to participate in the layout and construction of a residential structure.	X			

SLOs	SLO to PLO Alignment <i>(Mark with an X)</i>			COURSE to ILO Alignment <i>(Mark with an X)</i>			
	P1	P2	P3	1	2	3	4
CTEC 100 Building Fundamentals: SLO #1 Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 100 Building Fundamentals: SLO #2 Header Material Students will be able to calculate and cut to length of header material.	X						
CTEC 100 Building Fundamentals: SLO #3 Rafter Dimensions Students will be able to calculate the dimensions of common rafters.		X					
CTEC 110 Additions and Remodeling: SLO #1 Residential Construction Materials Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 110 Additions and Remodeling: SLO #2 Residential Form Ties Students will be able to correctly install residential form ties.			X				
CTEC 110 Additions and Remodeling: SLO #3 Under Floor Ventilation Students will be able to calculate the correct ratio of ventilation to under floor area.		X					
CTEC 121 Concrete and Formwork: SLO #1 Concrete and Formwork Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 121 Concrete and Formwork: SLO #2 Volume of Concrete Students will be able to calculate the volume of concrete in "yards."		X					
CTEC 121 Concrete and Formwork: SLO #3 Auto Level Students will be able to set up an auto level for use in the laboratory.			X				
CTEC 122 Rough Framing: SLO #1 Rough Framing Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 122 Rough Framing: SLO #2 Hold-Down Alignment Students will be able to align a "hold-down" for use in a sheer wall assembly.			X				
CTEC 122 Rough Framing: SLO #3 Framing Lumber Students be able to crown and mark framing lumber.			X				

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	P1	P2	P3	1	2	3	4
CTEC 131 Roof Framing: SLO #1 Roof Framing Materials and Method Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 131 Roof Framing: SLO #2 Roof Slope Students will be able to calculate roof slope.		X					
CTEC 131 Roof Framing: SLO #3 Stair Framing Materials and Methods Students will be able to calculate the dimensions of a valley rafter.			X				
CTEC 132 Stair Framing: SLO #1 Roof Framing Materials and Method Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 132 Stair Framing: SLO #2 Open Stair Stringers Students will be able to prepare a set of open stair stringers.			X				
CTEC 132 Stair Framing: SLO #3 Rise to Run Ratio Students will be able to calculate the appropriate ratio of “rise to run” for a legal staircase.			X				
CTEC 141 Interior Subcrafts: SLO #1 Interior Subcrafts Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 141 Interior Subcrafts: SLO #2 Door Swing Students will be able to correctly identify the “swing” of a door.		X					
CTEC 141 Interior Subcrafts: SLO #3 Drywall Installation Students will be able to install drywall in accordance with the International Residential Code guidelines.			X				
CTEC 142 Exterior Subcrafts: SLO #1 Exterior Subcrafts Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 142 Exterior Subcrafts: SLO #2 Window Opening Flash Students will be able “flash” a window opening according residential code specifications.			X				
CTEC 142 Exterior Subcrafts: SLO #3 Mortar Scratch Coat Students will be able to apply a “scratch coat” of mortar over lath.			X				
CTEC 150 Contract Estimating: SLO #1 Residential Construction Estimating Students will be able to demonstrate a basic knowledge of residential construction estimating.	X			X			
CTEC 150 Contract Estimating: SLO #2 Window Estimate Students will be able to prepare a window estimate from information found on a set of residential blueprints.			X				
CTEC 150 Contract Estimating: SLO #3 Building Estimate Profit Students will be able to calculate profit for a building estimate.		X					

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CTEC 160 Business and Legal Aspects of Contracting: SLO #1 Legal Aspects Students will be able to demonstrate a basic knowledge of the California Contractor License Law.			X	X			
CTEC 160 Business and Legal Aspects of Contracting: SLO #2 Mechanics Lien Students will be able create a Mechanics Lien.		X					
CTEC 160 Business and Legal Aspects of Contracting: SLO #3 Payroll Deductions Students will be able to calculate payroll deductions.		X					
CTEC 172 Residential Electrical Wiring: SLO #1 Electrical Wiring Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 172 Residential Electrical Wiring: SLO #2 Duplex Receptacle Wiring Students will be able to wire a duplex receptacle.			X				
CTEC 172 Residential Electrical Wiring: SLO #3 Hole Boring in Framing Materials Students will be able to bore holes in framing materials to accommodate non-metallic sheathed cables.			X				
CTEC 180 Residential Plumbing: SLO #1 Plumbing Materials and Methods Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction.	X			X			
CTEC 180 Residential Plumbing: SLO #2 Watertight Copper Joint Students will be able to assemble a watertight copper joint.			X				
CTEC 180 Residential Plumbing: SLO #3 Lavatory P-Trap Students will be able to assemble a P-trap under a lavatory.			X				
CTEC 200 General Cabinet Making: SLO #1 Cross-Cut Plywood Using the panel saw, student will cross-cut plywood to specified dimensions.			X	X			
CTEC 200 General Cabinet Making: SLO #2 Rip Cut Lumber Using the table saw, student will rip lumber to predetermined widths.			X				
CTEC 200 General Cabinet Making: SLO #3 Edge Glue Lumber Students will edge-glue lumber to increase overall width.			X				
CTEC 201 Upper Residential Cabinets: SLO #1 Face Frame Doweling Students will lay out dowel hole boring locations for a face frame.		X		X			
CTEC 201 Upper Residential Cabinets: SLO #2 Dowel Hole Boring Using the horizontal boring machine, student will bore dowel holes.			X				
CTEC 201 Upper Residential Cabinets: SLO #3 Diagonal Technique Face Frame Student will assemble face frame utilizing diagonal comparative technique to square.		X					

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CTEC 202 Base-Residential Cabinets: SLO #1 Hardwood Milling Student will mill hardwood lumber and lay it out for biscuit joints.			X	X			
CTEC 202 Base-Residential Cabinets: SLO #2 Plate Jointer Setup Student will set up plate jointer for $\frac{3}{4}$ " material thickness.	X						
CTEC 202 Base-Residential Cabinets: SLO #3 Biscuit Joint Machining Using the plate jointer, student will machine for biscuit joints.			X				
CTEC 203 Dedicated Use Cabinets: SLO #1 S4S Stock Squaring Presented with a piece of rough stock, student will utilize correct squaring procedure to produce stock in S4S condition.			X	X			
CTEC 203 Dedicated Use Cabinets: SLO #2 Radial Arm Saw Cross Cut Using the radial arm saw, student will cross cut stock to specified lengths.			X				
CTEC 203 Dedicated Use Cabinets: SLO #3 Cooktop Cutout Calculation Referencing the manufacturer's specifications, student will calculate cutout for standard cooktop.		X					
CTEC 210 Furniture Making Lab Interpreting Commercial Plans: SLO #1 Bill of Materials Provided with a set of plans, student will create a bill of materials.		X		X			
CTEC 210 Furniture Making Lab Interpreting Commercial Plans: SLO #2 Cost of Materials Referencing a bill of materials, student will calculate cost.		X					
CTEC 210 Furniture Making Lab Interpreting Commercial Plans: SLO #3 Construction Hours Estimate Using selected plans, student will estimate construction hours.		X					
CTEC 211 Furniture Making Lab Plan Modification: SLO #1 Seat Back Angle Student will modify angle of seat back from dining to recline.		X		X			
CTEC 211 Furniture Making Lab Plan Modification: SLO #2 Chair Height Conversion Student will convert chair height from dining to bar height.		X					
CTEC 211 Furniture Making Lab Plan Modification: SLO #3 Dining Table Length Conversion Student will modify length of rectangular dining table from four place settings to six.		X					
CTEC 212 Furniture Making Lab Developing Original Plans: SLO #1 Plan of Procedure Working from an original set of plans, student will complete a plan of procedure.		X		X			
CTEC 212 Furniture Making Lab Developing Original Plans: SLO #2 Plan Dimensioning Student will dimension original set of plans.		X					
CTEC 212 Furniture Making Lab Developing Original Plans: SLO #3 Final Product Critique Student will critique final product.			X				

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CTEC 213 Furniture Making Lab Building Without Plans: SLO #1 Project Option Thumbnails Student will create three thumbnail sketches of project options.		X		X			
CTEC 213 Furniture Making Lab Building Without Plans: SLO #2 Full Size Drawing from Thumbnail Student will expand selected thumbnail sketch to full size drawing.		X					
CTEC 213 Furniture Making Lab Building Without Plans: SLO #3 Coloring Techniques Student will enhance details of full size drawing using coloring techniques.		X					
CTEC 220 Hinging Systems and Doors: SLO #1 Ecopress Hinge Mortising Student will set up Ecopress for hinge mortising.	X			X			
CTEC 220 Hinging Systems and Doors: SLO #2 Cabinet Door Hinge Student will mortise and insert hinge in a cabinet door.			X				
CTEC 220 Hinging Systems and Doors: SLO #3 Hinge Plate Student will install ½" overlap hinge plate face frame application.			X				
CTEC 221 Drawer Systems: SLO #1 Blum 230 Drawer Slides Using manufacturer's installation jig, student will install Blum 230 drawer slides.		X		X			
CTEC 221 Drawer Systems: SLO #2 Ecopress Line Boring Student will set up Ecopress in line boring mode.	X						
CTEC 221 Drawer Systems: SLO #3 Blum Soft-Close Drawer Slides Student will install and adjust Blum motion soft-close drawer slides.			X				