



Construction Technology Program
Student Learning Outcome Mapping
Course (CLO), Program (PLO), Institutional (ILO)

Program Description: This program is designed to provide students will technical knowledge, skills and proper work habits/attitudes necessary for employment in this field. The program prepares students to work and advance in their careers in positions such as carpenters, masons, plumbers, private contractors, hardware store clerks, and other related construction work.

Program Learning Outcomes	Institutional Learning Outcomes
<ol style="list-style-type: none"> 1. Demonstrate blueprint-reading skills in residential construction. 2. Demonstrate carpentry skills in residential construction. 3. Demonstrate masonry skills in residential construction. 4. Demonstrate plumbing skills in residential construction. 5. Demonstrate basic construction management skills in residential construction. 	<ol style="list-style-type: none"> 1. Critical Thinking and Problem Solving: Analyze and solve problems by using informed judgment based on evidence, sound reasoning, and/or creativity to differentiate facts from opinions and to specify solutions and their consequences. 2. Communication: Effectively communicate, both orally and in writing, thoughts in a clear, well-organized manner to persuade, inform and/or convey ideas in academic, work, family and community settings. 3. Quantitative and Technological Competence: Use mathematical skills appropriate to our technological society by analyzing and solving problems that are quantitative in nature and use technology for informational, academic, personal and professional needs. 4. Diversity: Understand and appreciate differences in cultures and behaviors between the self and others by demonstrating respect, honesty, fairness, and ethical principles in both personal and professional life. 5. Civic Responsibility: Apply the principles of civility and morality to situations in the contexts of a healthy family, work, community, environment and world. 6. Aesthetics: Apply numerous means of inquiry to experience and appreciate the values of arts and nature.

PLO-ILO Mapping

PLOs	ILOs					
	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
PLO 1	X	X	X	X	X	X
PLO 2	X	X	X	X	X	X
PLO 3	X	X	X	X	X	X
PLO 4	X	X	X	X	X	X
PLO 5	X	X	X	X	X	X

CLO-PLO-ILO Mapping

AD 120 - Introduction to Architectural Drafting

This course introduces the student to manual drafting using a tee square and/or drafting machine. The topics covered in this course include freehand sketching as a problem solving and communication tool, introduction to the basic drafting, and elementary design principles. At the completion of this course, the student will have drafting skills necessary to complete a basic set of drawings for a simple house.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Freehand sketch a three dimensional pictorial drawings of a complex object.	X						X	X	X	X	X	X
2. Freehand sketch orthographic projections of a simple structure	X						X	X	X	X	X	X
3. Draw a plan and elevations of a simple house.	X	X	X				X	X	X	X	X	X
4. Dimension a floor plan	X	X	X	X			X	X	X	X	X	X
5. Draw a roof framing plan.	X	X	X				X	X	X	X	X	X

AD 210 - Computer Aided Drafting

This course introduces the student to computer -aided design/drafting (CAD) using AutoCAD. At the completion of this course the student will have the AutoCAD skills necessary to complete a basic set of AutoCAD drawings for a simple house of their own design.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Start a drawing and draw and edit lines and geometric shapes	X	X	X	X	X		X	X	X	X	X	X
2. Make and insert blocks.	X	X	X	X	X		X	X	X	X	X	X
3. Place text on a drawing.	X	X	X	X	X		X	X	X	X	X	X
4. Place dimension of a drawing.	X	X	X	X	X		X	X	X	X	X	X
5. Create, manage and use layers.	X	X	X	X	X		X	X	X	X	X	X
6. Insert and manage external references.	X	X	X	X	X		X	X	X	X	X	X
7. Use paper space for creating drawings.	X	X	X	X	X		X	X	X	X	X	X

BP 115 - Blueprint Reading for Construction

This course is designed to help students gain skills in blueprint reading. It covers the importance and use of blueprint reading in construction, measuring tools, mathematics, lines, sketching, pictorial drawings, orthographic projection drawings, dimensioning techniques, construction materials, specifications, reading plans, and interpretation of plans.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Freehand Sketch a three dimensional pictorial drawings of a complex object.	X					X	X	X	X	X	X
2. Freehand sketch orthographic projection of a simple structure	X					X	X	X	X	X	X
3. Identify a building's features, materials and types of construction form a set of working drawings.	X	X	X	X		X	X	X	X	X	X
4. Determine dimensions from a set of working drawings.	X	X	X	X	X	X	X	X	X	X	X
5. Interpret notes and specification.	X				X	X	X	X	X	X	X

CT 112 - Construction, Safety Tools & Equipment

This course is designed to give students knowledge of hand tools and power tools used to perform construction work. Emphasis is placed on skills needed to effectively perform layout, measurements, cutting, fastening, and finishing operations. Maintenance of tools and equipment will be addressed. Safe use of tools will be stressed.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Apply personal and work place safety.		X	X	X	X	X	X	X	X	X	
2. Demonstrate proper use of hand tools.		X				X	X	X	X	X	
3. Maintain hand tools.		X				X	X	X	X	X	
4. Identify demonstrate proper us of power tools and shop equipment.		X				X	X	X	X	X	
5. Maintain power tools and shop equipment.		X				X	X	X	X	X	

CT 113 - Introduction to Construction

This course covers common construction materials, product, and system as well as construction efficiency and safety in the delivery, handling, and installation of building materials. Information on building materials, products, systems and procedures will be presented.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Recognize various careers in construction industry.	X	X	X	X	X		X	X	X	X	X	X
2. Select local and foreign wood products and classify them according to their appropriate use.		X					X	X	X	X	X	X
3. Select proper sawing, drying, and handling of wood products.		X					X	X	X	X	X	X
4. Select various non-wood products used in building construction.		X					X	X	X	X	X	X
5. Estimate concrete, lumber, and plywood quantities required in building construction.		X	X				X	X	X	X	X	X

CT 115 - Footing & Foundation

This course provides students with working knowledge in different types of footings and foundations construction. It also includes site preparation and layout of structures, use of builder's level and transit, and erection of batter boards. It covers materials, planning, reinforcement, and construction of footing and foundation.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Interpret site plan, foundation plan, and floor plan.	X	X	X	X	X	X		X			
2. Select footing and foundation materials.	X	X	X		X	X		X			X
3. Prepare building site, erect batter boards, and layout and install building and foundation lines.	X	X			X	X		X			X
4. Layout and excavate footing and foundation trench and set-up reinforcement.	X	X				X		X			X
5. Set up footing and foundation reinforcement and install.	X	X				X		X			X
6. Construct reinforced concrete and concrete blocks foundation wall.	X	X	X			X		X			X
7. Mix, pour, and finish concrete.	X	X	X			X		X			

CT 122 - Floor, Wall, & Ceiling Framing

This course deals with floor framing, wall parts, wall construction and installation of ceiling joists. Students will gain knowledge and skills through construction of a full scale house.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Interpret Floor Plan, Floor Framing Plan, Wall Framing Plan, and Ceiling Framing Plan.	X	X			X	X		X	X	X	
2. Estimate floor, wall, and ceiling framing materials.	X	X			X	X		X	X	X	X
3. Layout and install selected floor frames.	X	X				X		X	X	X	
4. Layout and install selected wall and rough opening frames.	X	X				X		X	X	X	
5. Layout and install selected ceiling frames.	X	X				X		X	X	X	

CT 123 - Roof Framing & Exterior Finishing

This course covers types of roofs, parts of a roof system, layout terms, rafter sizing and layout, and use of framing square. Roof framing principles and applications, gable, hip, and intersecting roof designs will be emphasized. It also includes selection and installation of siding and roofing materials, windows, exterior doors cornice work and other exterior applications.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Interpret roof framing plan and exterior detail.	X	X			X	X		X	X	X	
2. Select and installs roof frames.	X	X				X		X	X	X	
3. Select and install roofing materials.	X	X				X		X	X	X	
4. Select and install exterior wall sidings and cornice coverings.	X	X				X		X	X	X	
5. Select and install exterior door and windows.	X	X				X		X	X	X	
6. Apply exterior finishing.	X	X				X		X	X	X	X

CT 124 - Interior Trim & Cabinet Making

This course covers principles and methods of interior carpentry construction. It includes installation of interior trim, doors, stairs building, wood working techniques and cabinetry. It also includes, but not limited to, terms and definitions used in construction field pertaining to interior finishings. Also covered are theories and practical applications of various types of all coverings, wall finishings, ceiling coverings, ceiling finishings, interior door hangings and various applications of interior trim.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Interpret interior finishing details and cabinetry working drawings.	X	X			X	X		X	X	X	
2. Select and install interior trims and moldings.	X	X				X		X	X	X	
3. Select and install interior doors.	X	X				X		X	X	X	
4. Layout and construct interior stairs.	X	X				X		X	X	X	X
5. Layout and construct various cabinetry products.	X	X				X		X	X	X	X
6. Apply interior finishing.	X	X				X		X	X	X	X

CT 212 - Construction Management

This course concentrates on the procedures and methods that are used by the construction contractor during the construction and post-construction phases of a project. Construction today involves much more than the physical erection of projects. It is essential for a contractor to systematically plan, organize, manage, control, and document jobsite activities.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Prepare a schedule for a proposal/bid for the construction of a house in Palau.	X				X	X	X	X	X	X	X
2. Develop a building construction schedule for Residential Building.	X				X	X	X	X	X	X	X
3. Prepare estimates for Residential Building	X				X	X	X	X	X	X	X
4. Prepare contract documents for Residential Building	X				X	X	X	X	X	X	X
5. Evaluate construction health and safety on a construction site.	X				X	X	X	X	X	X	X

CT 222 - Internship

This course provides the student practical training in construction work. With the assistance of an instructor coordinator, the student is assigned to work under a supervisor in a governmental department or a private business in order to learn through the actual work experience.

CLO	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
Students will be able to:												
1. Demonstrate proper employee behaviors and work habits.	X	X	X	X	X		X	X	X	X	X	X
2. Perform carpentry/construction tasks as assigned by a site supervisor.	X	X	X	X	X		X	X	X	X	X	X

MS 101 - Basic Masonry/Concrete Work

This course covers measuring, basic plan reading, estimating, masonry tools, mortars, anchors and reinforcement, wall layout, spreading mortar and laying units and related masonry construction.

CLO	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
Students will be able to:												
1. Select commonly used masonry products.	X		X		X		X		X			
2. Mix concrete and mortar manually and mechanically.			X				X		X			
3. Layout and construct a block wall with plaster finish.	X		X				X		X			
4. Select, layout, and install ceramic tiles	X		X				X		X			X
5. Pour and finish concrete surface.			X				X		X			X

PL 214 - Residential Plumbing

The course covers residential plumbing orientation, plumbing tools and materials, water systems, water valves, faucets and fixtures.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Apply personal workplace safety.				X	X		X		X			
2. Use and maintain plumbing tools.				X	X		X		X			
3. Layout plumbing diagram.	X			X	X		X		X			X
4. Select, layout, and connect pipes and fittings.	X			X			X		X			
5. Install plumbing fixtures.				X			X		X			
6. Inspect plumbing system.				X	X		X		X			