

ENGINEERING TECHNOLOGY

Course Learning Outcomes AY25-26



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BLUEPRINT READING

ENGT PLOs	ILO Alignment
PLO 1: Using computational and reasoning skills, demonstrates entry-level skills for accuracy in drawings and/or maps, and identifies the relationship of features to demonstrate visualization.	ILOs 1, 2
PLO 2: Formulate, design, revise, and construct projects utilizing prior knowledge, research, and other resources to defend, explain, and discuss.	ILOs 1, 2, 4
PLO 3: Design and generate Architectural documents, Engineering documents and GIS maps using two-dimensional and three-dimensional CAD programs.	ILOs 2, 4
PLO 4: Demonstrate operational competence in using surveying hand tools and equipment.	ILOs 1,2
PLO 5: Demonstrate operational competence in using Unmanned Aerial Systems.	ILOs 1, 2
PLO 6: Illustrate within the design process an understanding of the balance between cultures.	ILOs 1, 2, 3, 5, 6

AEC/ENGT	COURSE LEARNING OUTCOMES (CLOs)	ENGT PLOs
ENGT 100 - Drafting Conventions and Blueprint Reading	"CLO 1: Identify basic manual drafting tools."	PLOs 1, 2, 5
	"CLO 2: Use tools correctly to create orthographic views and axonometric drawings."	PLOs 1, 2, 5
	"CLO 3: Identify basic residential building materials."	PLOs 1, 2, 5
	"CLO 4: Identify plumbing systems, air-conditioning and exhaust systems, and symbols and terminology."	PLOs 1, 5
	"CLO 5: Interpret a basic Electrical and Welding plan and identify the symbols and abbreviations used."	PLOs 1, 5
	"CLO 6: Interpret a basic welding plan."	PLOs 1, 5
ENGT 107 - Unmanned Aerial Systems Flight	"CLO 1: Demonstrate proper operation of UAV systems."	PLO 5
	"CLO 2: Evaluate and identify risks involved in flying a UAV prior to actual flight."	PLO 5
	"CLO 3: Operate different optical payloads in gathering data."	PLOs 2, 5, 6
	"CLO 4: Develop skills connected to project-based industry experience."	PLOs 2, 5, 6, 7
ENGT 112 - Computer Aided Drafting (CAD)	"CLO 1: Using AutoCAD commands, draw, dimension and label, and plot out a set of appropriately-scaled drawings."	PLOs 1, 2, 3, 5

AEC 113 - Geomatics and Land Surveying I	"CLO 1: Identify and measure existing features on the surface of the earth using surveying tools."	PLOs 1, 5
	"CLO 2: Utilize all correct lines, components, surveying tools and communication methods to draw a location map"	PLOs 1, 3, 4, 5
AEC 115 - Introduction to Architecture	"CLO 1: Demonstrate an understanding of the industry structure and licensing requirements within the state of Hawai'i."	PLOs 1, 5, 6
	"CLO 2: Demonstrate an understanding of the legal implications and responsibilities of the profession."	PLOs 1, 5
ENGT 120 - Residential Design and Construction Drawings	"CLO 1: Complete a full set of construction working drawings."	PLOs 1, 2, 3, 5, 6
ENGT 129 - Geomatics and Land Surveying I	"CLO 1: Identify and measure existing features on the surface of the earth using surveying tools."	PLOs 4, 5
	"CLO 2: Able to utilize all correct lines, tools, and communication methods needed to draw a location map."	PLOs 3, 4, 5, 6
	"CLO 3: Able to utilize the County of Hawai'i website to locate and understand basic county details."	PLO 5
ENGT 230 - Residential Contract Drawings and Codes	"CLO 1: Complete a full set of residential contract drawings for a 2-story dwelling renovation, incorporating standard architectural drafting conventions and methods, sustainable design and structural design, while adhering to current applicable local codes."	PLOs 1, 2, 3, 5, 6

ENGT 233 - Basic Architectural Studio Design	"CLO 1: Use basic technical drawing instruments to understand, visualize, and depict three-dimensional spaces and solids."	PLOs 1 ,2, 3, 5
	"CLO 2: Demonstrate an understanding of three-dimensional spaces and their physical and psychological effects through architectural drawings, blueprints and models."	PLOs 1, 2, 3, 5
	"CLO 3: Present individual design solutions in class using 3-dimensional illustrations and models."	PLOs 1, 5
	"CLO 4: Provide written and graphic documentation of their design process."	PLOs 1, 2, 3, 5
ENGT 234 - Architectural Design Software	"CLO 1: Demonstrate proper use of industry-appropriate software to construct a 3-dimensional model."	PLOs 1, 2, 3, 5
	"CLO 2: Present individual design solutions in class using 3-dimensional illustrations and models."	PLOs 1, 2, 5
	"CLO 3: Draw an integrated architectural-firm-style layout or rendering using BIM software."	PLOs 1, 2, 5
ENGT 247 - Geomatics and Land Surveying II	"CLO 1: Create a topographic map with data collected from a local site."	PLOs 1, 2, 3, 4, 5, 6
AEC 249 - Introduction to Drafting Career Success	"CLO 1: Plan, research, create and/or organize and present in class a project appropriate for a professional job search."	PLOs 2, 5, 6

ENGT 270 - Introduction to GIS and GPS	"CLO 1: Demonstrate awareness of the basic principles and concepts of geography and cartography, with an emphasis on GIS and GPS technologies."	PLOs 3, 4, 5
	"CLO 2: Demonstrate cartographic skills in map design and production to create various types of maps and web applications using GIS."	PLOs 3, 4, 5, 6
	"CLO 3: Demonstrate the ability to utilize raster and vector GIS data sets and combine spatial data (maps) with attribute data (tables) for analysis."	PLOs 3, 4, 5, 6
	"CLO 4: Demonstrate and apply planning and execution of an independent GIS project."	PLOs 3, 5, 6
ENGT 275 - Spatial Data Management and Analysis	"CLO 1: Demonstrate acquisition and application of remote sensing data."	PLO 5
	"CLO 2: Demonstrate best practices in field data gathering and software analytics."	PLOs 4, 5
	"CLO 3: Develop proficiency in advanced GIS and UAS integration software packages to be able to perform data analysis and produce quality maps and visualizations."	PLOs 3, 4, 5
	"CLO 4: Demonstrate and apply planning and execution of an independent GIS project."	PLOs 3, 4, 5, 6
	"CLO 5: Communicate the results of project data analysis as it pertains to the final project."	PLOs 3, 5, 6
ENGT 291 - Rural and Urban Remote Sensing	"CLO 1: Apply and demonstrate concepts and methodologies to Rural and Urban system planning."	PLOs 5, 6
	"CLO 2: Evaluate, design, and implement green building practices and site design."	PLOs 1, 3, 5, 6

	"CLO 3: Apply effective interpersonal and communication skills."	PLO 5
	"CLO 4: Recognize, collect, and interpret field data."	PLOs 5, 6
	"CLO 5: Apply effective practices used in managing rural and urban environments."	PLOs 5, 6
BLPR 22B - Blueprint Reading and Drafting	"CLO 1: Can use basic manual drafting tools."	PLO 1
	"CLO 2: Able to read the Architectural scale and Engineering scale."	PLOs 1, 5
	"CLO 3: Able to create pictorial drawings-Orthographic, Isometric, & Oblique."	PLOs 1, 5
	"CLO 4: Can identify the building components of a simple residential structure."	PLOs 1, 2, 5
BLPR 30C - Blueprint Reading for Electricians	"CLO 1: Recognize Alphabet of Lines"	PLOs 1, 5
	"CLO 2: Apply Alphabet of Lines to Residential Drawings"	PLOs 1, 2, 5
	"CLO 3: Read & interpret electrical circuitry & residential building blueprints drawings"	PLOs 1, 5
	"CLO 4: Design residential electrical layout in compliance to NEC 2011"	PLOs 1, 2, 5, 6
	"CLO 5: Complete a full electrical print for DHHL Model Home 2014"	PLOs 1, 2, 5, 6
BLPR 30F - Blueprint Reading for Carpenters	"CLO 1: Use basic manual drafting tools."	PLO 1

	"CLO 2: Read the Architectural scale and Engineering scale."	PLOs 1, 5
	"CLO 3: Create pictorial drawings-Orthographic, Isometric, & Oblique."	PLOs 1, 5
	"CLO 4: Identify the building components of a simple residential structure."	PLOs 1, 2, 5
BLPR 40 - Blueprint Reading and Estimating	"CLO 1: Able to understand a full set of working drawings."	PLOs 1, 2, 5
	"CLO 2: Able to construct a small scale model of a one bedroom dwelling by reading measurements off of a set of working drawings."	PLOs 1, 2, 5
BLPR 50 - Blueprint Reading for Welding and Machine Trades	"CLO 1: Can use basic manual drafting tools and scales."	PLO 1
	"CLO 2: Able to create pictorial drawings - Orthographic, Isometric, and Oblique"	PLOs 1, 5
	"CLO 3: Able to read dimensions of objects from a welding print"	PLOs 1, 5
	"CLO 4: Can identify different weld symbols and structural shapes."	PLO 1