ABET Format Syllabi for ET365 Building Utilities

1. ET 365 "Building Utilities"

2. 3 credits (2+3p)- course 30 contact hours and Lab is 37.5 contact hours

3. **Course Instructor:** Anthony Hyde

4. **Required Text Book** - Code Check Complete: An Illustrated Guide to Building, Plumbing, Mechanical, and Electrical Codes (Code Check) by Redwood Kardon, Michael Casey, and Douglas Hansen (Hardcover - Sep 4, 2007) – Illustrated

5.**Specfic course information**: course is a required for students in the mechanical ET program and can be used as a technical elective for other ET program options. Course is an introduction and applications in design and code applications for mechanical, plumbing, electrical and HVAC systems for buildings and residents

- PREREQUISITES: Junior Standing in E T
- Course is required

6. Course Goals

- Students gain a general technical knowledge of electrical, plumbing, HVAC and Building systems
- Knowledge of site selection, building construction, residential house systems and commercial building considerations
- Thorough understanding of plumbing and electrical codes commonly used in residential and light commercial applications.
- Knowledge of building systems and HVAC systems

7. Course Outcomes

- ability to design a plumbing, electrical and heating system based on standard codes
- ability to interpret specific codes and stands for multiple applications.

- An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology;
- An ability to conduct, analyzes, and interpret experiments and apply experimental results to improve processes;
- An ability to apply creativity in the design of systems, components or processes
- An ability to function effectively on teams;
- An ability to identify, analyze and solve technical problems;
- An ability to communicate effectively;

ET 365 Building Utilities Course Topics

Site Selection:	Location to from airport/interstate and rail yard, other
	Location to and from utilities, electrical water and sewer
Construction:	Green- sips, foam, ceb, adobe straw bail
	How location and temperatures affect building
	Houses- wood frame, metal frame, green
Residential home:	Site selection and plot plan
	Water, plumbing plan and sewer planning
	Electrical plan
	Heating and cooling a house
Commercial building:	Electrical power options and considerations
	Electrical usage and how you pay for electricity, peak loads
	Sizing a panel box
	Equipment layout in a building.
Building :	Bracing, wall framing, roof and ceiling framing
	Wall and roof coverings, attics, fireplaces and chimneys
	Egress, windows, safety glass, pool barriers
Plumbing :	Underground drains traps support tables
	Vent terminals, water supply sizing
	Gas piping, fixtures water heaters
HVAC :	System and general requirements
	Gas and related appliances. Venting and heaters
	Appliances exhaust, other heating, radiant, combustion
	Heat pumps, evaporative coolers
Electrical:	Service, sizing,
	Grounding, panels branch circuits, receptacles
	Appliances, lighting wiring methods, boxes