

## Master Syllabus

### CAT 1241 - Building Systems

**Division:** Science, Mathematics and Engineering

**Department:** Civil Engineering Technology

**Credit Hour Total:** 4.0

**Lecture Hrs:** 3.0 **Lab Hrs:** 3.0

**Prerequisite(s):** CAT 1101 OR CAT 1201

**Date Revised:** January 2015

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### Course Description:

Basic mechanical and electrical system design principles for residential and commercial structures. Structural engineering principles for designing residential and commercial structures using wood, steel and concrete. Research appropriate building codes and apply knowledge to solve engineering challenges. Three classroom, three lab hours per week.

### General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Computer Literacy Competency
- ▣ Information Literacy Competency

### Course Outcomes:

#### Electrical System Design

Develop basic electrical system designs for residential and commercial building applications.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score of 70% or better.

**Assessment Method:** Portfolios

**Performance Criteria:**

Score of 70% or better.

#### Building Information Modeling

Demonstrate the integration of mechanical, electrical and plumbing components into building models.

**Assessment Method:** Portfolios

**Performance Criteria:**

Score of 70% or better.

#### Mechanical (HVAC) System Design

Develop basic mechanical system designs for residential and commercial building applications.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score of 70% or better.

**Assessment Method:** Portfolios

**Performance Criteria:**

Score of 70% or better.

#### Structural Principles

Identify loads, stresses and reactions, and building designs to accommodate loads.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score of 70% or better.

#### Structures

Describe accepted practices for designing wood, steel and concrete structures.

**Assessment Method:** Locally developed exams

**Performance Criteria:**

Score of 70% or better.

### Outline:

Building Information Modeling (BIM)

Mechanical systems

Electrical systems

