

## **COURSE SYLLABUS**

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Construction Blueprint Reading
<b>COURSE NUMBER</b>	BEMT 0188
<b>DIVISION</b>	Career and Technical Education
<b>DEPARTMENT</b>	BEMT
<b>CIP CODE</b>	46.0401
<b>CREDIT HOURS</b>	2
<b>CONTACT HOURS/WEEK</b>	Class: 2
<b>PREREQUISITES</b>	BEMT 0108, BEMT 0112, BEMT 0113, BEMT 0115

### **COURSE DESCRIPTION**

Students will learn the basic architecture print symbols, legends, line segments, scales, and be able to read elevations, finish schedules, design and structural details, identify sheet sections and materials, locate specifications, and identify sheets sections to CSI masterformat.

### **PROGRAM LEARNING OUTCOMES**

Students will demonstrate an adherence to safety standards and proficiency in the installation or repair of residential electrical, plumbing, HVAC, exterior building materials, roofing, irrigation systems, landscape/hardscape, concrete placement and finish, masonry install and repair.

### **TEXTBOOKS**

<http://kckccbookstore.com/>

### **METHODS OF INSTRUCTION**

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

### **COURSE OUTLINE**

- I. Introduction to Print Reading
  - A. Construction prints
    1. Plan Drawings
  - B. Identifying Information in a set of prints
    1. Civil

2. Architectural
  3. Structural
  4. Mechanical
  5. Electrical
  6. Utility
  7. Plumbing
  8. Heating, Ventilating and Air-conditioning
- II. Reading Measuring Tool and Using Scales
    - A. Fractional Rule
    - B. Metric Rule
    - C. Using Scales
      1. Identifying the Drawing Scale
      2. Using an Architect's Scale
      3. Using an Engineer's Scale
- III. Lines and Symbols
    - A. The Alphabet of Lines
      1. Property Lines
      2. Border Lines
      3. Object Lines
      4. Hidden Lines
      5. Center Lines
      6. Dimension Lines and extension lines
      7. Leaders
      8. Arrowheads
      9. Break Lines
      10. Section Cutting Lines
      11. Section Lines
    - B. Symbols
    - C. Abbreviations
  - IV. Construction Drawings
    - A. Plan View
      1. Floor Plan
      2. Foundation Plan
      3. Framing Plan
      4. Electrical Plan
      5. Plumbing Plan
      6. Mechanical Plan
    - B. Elevations
    - C. Sections
    - D. Details
  - V. Specifications and Building Codes
    - A. Specifications
      1. Overview of Specifications and Scope of Use
      2. Contents of Specifications

- a. Contract Requirements
- VI. Site Plans
  - A. Feature of site plans
    - 1. Site or Plot Plan
  - B. North arrow
  - C. Property Lines
  - D. Contour Lines
- VII. Architectural Drawings
  - A. Introduction
  - B. Architectural Drawing Organization
    - 1. Floor Plans
    - 2. Architectural Elevations
    - 3. Architectural Sections
    - 4. Architectural Details
    - 5. Schedules
  - C. Floor Plans
    - 1. Demolition Plans
    - 2. Enlarged Plans
    - 3. Reflected Ceiling Plans
    - 4. Floor Finish Plans
  - D. Architectural Elevation
    - 1. North, South, East, West
  - E. Type of Elevations
    - 1. Exterior
    - 2. Interior
  - F. Architectural Section
    - 1. Sectional Drawings
    - 2. Full Building Section
  - G. Architectural Details
    - 1. Detail Sections
  - H. Schedules
    - 1. Schedules
    - 2. Door Schedules
    - 3. Window Schedules
    - 4. Room Finish Schedules
- X. Foundation Prints
  - A. Foundation Plans or Basement Plan
  - B. Footings
    - 1. Footings and Walls
    - 2. Grade Beams
- XI. Structural Prints
  - A. Above-Grade Structural Construction
  - B. Concrete Construction and Types
    - 1. Reinforced Concrete

## XII. Residential Framing Prints

- A. Schedules
- B. Sectional Views
- C. Roof Framing
- D. Stair Framing

## XIII. Plumbing Prints

- A. Water Distribution System
  - 1. Distribution Piping Materials
  - 2. Copper piping
  - 3. Galvanized pipe
  - 4. Brass Pipe
  - 5. Plastic Pipe
- B. Sewage Disposal System
  - 1. Sewage Piping Material
  - 2. PVC
  - 3. ABS
- C. Plumbing Codes

## XIV. Electrical Prints

- A. Electrical Terminology
- B. Ground Fault Circuit Interrupters
- C. Electrical Symbols
- D. Electrical Prints
  - 1. Electrical Plans
  - 2. Wiring Diagrams
- E. Schedules
  - 1. Panel Schedule
  - 2. Lighting Schedule
  - 3. One-Line Diagram
- F. Electrical Circuits
  - 1. Circuits
  - 2. Branch circuits
  - 3. General appliance
  - 4. Individual circuits
  - 5. Dedicated
- G. Circuit Calculations
- H. Low-Voltage Systems
- I. Electrical Codes
- J. Types and Size of Conductors

### **COURSE LEARNING OUTCOMES**

Upon successful completion of this course, the student will:

- A. Distinguish between the different types of prints
- B. Read dimensions on a print

- C. Identify the common types of lines used on prints
- D. Explain what is included in specifications.
- E. Understand how building code requirements impact the building process
- F. Identify the process of concrete/reinforcement staging
- G. Describe different types of masonry.
- H. Recognize common features of site plans
- I. Read common detail sections
- J. Identify the types of drawing classified as architectural drawings
- K. Read different types of floor plans
- L. Describe the purpose of elevations, sections, and details
- M. Identify materials specified on architectural drawings
- N. Interpret drawing legends and schedules
- O. Identify various components of a foundation plan
- P. Recognize various types of wood floor structures
- Q. Identify various structural steel members
- R. Read framing drawings
- S. Recognize plumbing fixture symbols on prints
- T. Identify HVAC symbols on prints
- U. Electrical drawings

### **ASSESSMENT OF COURSE LEARNING OUTCOMES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

### **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.