COURSE OUTLINE

BLUEPRINT READING FOR CONSTRUCTION TRADE — Course Title

BP115 — Dept. & Course No.

I. COURSE DESCRIPTION:

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 drawing, orthographic projection drawings, dimensioning techniques, construction materials, specifications, reading plans, and interpretation of plans..

II. SEMSTER CREDITS 3

III. CONTACT HOURS PER WEEK 3
Lecture

IV. PREREQUISITE: None

V. STUDENT LEARNING OUTCOMES:

Upon completion of this course, students will be able, with 65% accuracy to :

1. Explain the importance of construction blueprints
2. Read and convert between English and metric units
3. Solve construction related mathematics

VI. COURSE CONTENT

A. Construction Blueprint
   1. Blueprint
   2. Working Drawing
   3. Pictorial Drawing
   4. Orthographic projection
   5. Site Plan
   6. Floor Plan
   7. Foundation Plan
   8. Section Drawing
   9. Detail drawing
   10. Door & Window Schedule
   11. Electrical Plan
   12. Mechanical Plan

B. Measuring Tools
   1. Tape
   2. Folding Rule
   3. Metric Ruler

C. Mathematics
   1. Fractions
   2. Adding fractions
   3. Subtracting Fractions
   4. Dividing Fractions
   5. Decimal Fractions
   6. Multiplying Fractions
   7. Adding and

Subtracting Decimals
8. Multiplying Decimals
9. Dividing Decimals
10. Square and Rectangular Area
11. Triangular Areas
12. Circular Areas
13. Volume Measurement

4. Identify alphabet of lines and explain use of line, symbols and the words abbreviation

D. Alphabet of Lines, Symbols and Word Abbreviation

1. Property Line
2. Border Line
3. Object Line
4. Hidden Line
5. Center line
6. Dimension & Extension Line
7. Break Line
8. Cutting Plane Line
9. Section Line
10. Reference line
11. Elevation Symbols
12. Plan Symbols
13. Section Symbols
14. Abbreviations

5. Use proper techniques of sketching lines

E. Sketching Methods

1. Aid to Freehand Sketching
2. Sketching Horizontal Line
3. Sketching Vertical Line
4. Sketching Inclined Lines and Angles
5. Sketching Arcs and Circles

6. Identify and sketch different pictorial drawings

F. Pictorial Drawings

1. Isometric Drawing
2. Isometric Circle and Arcs
3. Isometric Dimensioning
4. Oblique
5. Perspective Drawing
6. Parallel (One Point) Perspective
7. Angular (Two Point) Perspective
8. Pictorial Drawing

7. Visualize and sketch orthographic objects and structures

G. Orthographic Drawing

1. Plan View
2. Floor Plan
3. Foundation Plan
4. Framing Plan
5. Electrical Plan

6. Plumbing Plan
7. Mechanical Plan
8. Elevations
9. Sections
10. Details

8. Scale and read dimensions on a print

H. Scale and Dimension Techniques

1. Architect Scale
2. Metric System
3. English System
4. Dimensioning Floor Plan
5. Dimensioning Elevation Plan

9. Read and interpret specifications

I. Specifications

1. Requirement and Scope
2. Type of Information Provided
3. Reading Specification

10. Read and interpret prints

J. Types of prints

1. Plot Plan
2. Foundation Plan
3. Floor Plan
4. Elevation
5. Section Detail
6. Wood framing

VII. EQUIPMENT AND MATERIALS

1. Drafting Tools
2. Set of Working drawings
3. Handouts
4. Scales
5. Triangles

VIII. TEXT AND REFERENCES:

Required Text:

Brown, Walter C, Blueprint Reading for Construction., South Holland, Ill: Wilcox Company, Inc. 2005

Supplementary References:

Curriculum and Instructional Material's Center. Fundamentals of Construction: Plan Reading

IX. METHODS OF INSTRUCTION

Lecture/discussion
Demonstration/Illustration/Explanation
Reinforcement activities
Guest speaker

X. METHOD OF EVALUATION

Lecture presentation is tested by written tests. Evaluation of drawings is based on skill development and knowledge acquisition.

Four criteria used in evaluating projects and operation performance are:

1. Accuracy
2. Techniques
3. Appearance
4. Completion

The components used in the computation of the final grades are:

1. Classwork/participation.....10%
2. Homework/assignments.....35%
3. Quizzes.....15%
4. Mid term 20%
5. Final test 20%

Total.....100%

The transmutation of percentages to letter grades are:

90 – 100%..... A
80 – 89%..... B
70 – 79%..... C
65 – 69%..... D
0 – 64%..... F

Palau Community College
BP115 Blueprint Reading for Construction Trade
Course Learning Outcomes

During the course experience, the ***course learning outcomes*** (CLOs) will be assessed through the use of signature assignments. A rating scale will be used to determine the students' proficiency level of each CLO using specifically aligned assignments. The numerical ratings of 3, 2, and 1 are not intended to represent the traditional school grading system of A, B, C, D, and F. The descriptions associated with each of the numbers focus on the level of student performance of each of the course learning outcomes listed below:

Rating Scale:

4 Exceeds Expectations
3 Meets Expectations
2 Developing
1 Below Expectations

CLO 1: Freehand sketch a three dimensional pictorial drawings of a complex object.

Numerical Value	
4	Identify and sketch different drawings of a complex object, showing three visible faces and indicating edges of hidden planes using correct line type.
3	Identify and sketch different drawings of a complex object, showing three visible faces.
2	Sketch a complex object, showing three visible faces.
1	Cannot sketch a three dimensional drawing of a complex object.

CLO 2: Freehand sketch orthographic projections of a simple structure.

Numerical Value	
4	Sketch orthographic projections of a simple structure, matching windows, doors and roof planes on elevations to plan, and indicating finishes.
3	Sketch orthographic projections of a simple structure, matching windows, doors and roof planes on elevations to plan.
2	Sketch orthographic projections of a simple structure
1	Cannot sketch orthographic projections of a simple structure.

CLO 3: Identify a building's features, materials and types of construction from a set of working drawings.

Numerical Value	
4	Identify building features from different lines, identify various components of the building structure, identify symbols representing materials, plumbing fixtures, and electrical fittings, interpret concrete reinforcing notation, and interpret framing drawings, and schedules.
3	Identify building features from different lines, identify various components of the building structure, identify symbols representing materials, plumbing fixtures, and electrical fittings, and interpret framing drawings, and schedules.
2	Identify building features from different lines, identify various components of the building structure, and identify symbols representing materials, plumbing fixtures, and electrical fittings.
1	Identify building features from different lines, identify various components of the building structure and identify symbols representing materials, and plumbing fixtures.

CLO 4: Determine dimensions from a set of working drawings.

Numerical Value	
4	Read and scale dimensions from working drawings, identify items that should be dimensioned on different drawing types and calculate dimensions with at least 90% to 100% accuracy.
3	read and scale dimensions from working drawings, identify items that should be dimensioned on different drawing types and calculate dimensions with at least 80% to 89% accuracy..
2	read and scale dimensions from working drawings, identify items that should be dimensioned on different drawing types and calculate dimensions with 65% to 79% accuracy.
1	Identify items that should be dimensioned on different drawing types and calculate dimensions with less than 65% accuracy.

CLO 5: Interpret notes and specification.

Numerical Value	
4	Describe the purposes of a specification, identify organization of a specification, identify contents of a specification, identify location of information for particular phases of construction, identify the relationship between working drawings and specification, and relate detailed descriptions in the specification to items in the working drawings.
3	Describe the purposes of a specification, identify organization of a specification, identify contents of a specification, identify location of information for particular phases of construction, and identify the relationship between working drawings and specification.
2	Describe the purposes of a specification, identify organization of a specification, and identify contents of a specification.
1	Describe the purposes of a specification and identify organization of a specification.