**I. COURSE TITLE: Blueprint Reading**

 **COURSE NUMBER: 1110 CATALOG PREFIX: ENDS**

**II. PREREQUISITE(S): None**

**III. CREDIT HOURS: 3 LECTURE HOURS: 3**

 **LABORATORY HOURS: OBSERVATION HOURS:**

**IV. COURSE DESCRIPTION:**

Learn to read and use HVAC plans and blueprints like today’s professionals, with a focus on air conditioning drawings and hands-on exercises. This course will help readers master the basics of blueprint reading and apply their new skills to work in the HVAC trade. This course has been updated to reflect the increasing use of computers to develop plans and prints, while still including all the critical areas of study, including: using the architect’s and engineer’s scale, creating and using working and construction drawings, freehand sketching and drafting with instruments, and more. The final section of this course goes beyond basic concepts, enabling students to gain valuable skills in reading interpreting architectural, ductwork, mechanical, electrical, and plumbing plans.

**V. GRADING**

Grading will follow the policy in the catalog. The scale is as follows:

A: 90 – 100

 B: 80 – 89

 C: 70 – 79

 D: 60 – 69

 F: 0 – 59

**VI. ADOPTED TEXT(S):** Blueprints and Plans for HVAC, 3rd Edition

 Joseph Moravek and Frank Miller

 ISBN – 10: 1428335202

 ISBN – 13: 9781428335202

 Paperback, 336 pages

 Previous Editions: 2004, 1996

 CENGAGE Publishing

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 College Bookstore Wholesale Price = $95.75

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| **VII. COURSE OBJECTIVES:** 1. To provide illustrations, photos, graphs, and sketches to serve as visual aids to reinforce key concepts and clarify complicated material.
2. To contain complete sets of commercial blueprints that correlate directly with the exercises, allowing students to apply what they learn as they learn it.
3. To provide helpful materials including instant access for beginners, frequently used geometric figures and formulas, conversion tables, abbreviations, and symbols.
4. No prior knowledge is assumed, making this course ideal for use by anyone planning a career in the HVAC industry or the building trades.
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**VIII. COURSE METHODOLOGY:**

Lecture and some hands-on sketching and drafting.

**IX. COURSE OUTLINE:**

Week:

1. Topic 1: Introduction; Review of Basic Mathematical Procedures

Topic 2: Safety

1. Topic 3: Linear Measurements

Topic 4: Angular Measurements

1. Topic 5: Learning to Use the Architect’s Scale

Topic 6: Learning to Use the Engineer’s Scale

1. Topic 7: Symbols and Abbreviations

Topic 8: How Working Drawings are Created

1. Topic 9: Categories of Working Drawings

Topic 10: Sections, Elevations and Details

1. Topic 11: Creating Construction Drawings

Topic 12: Who Uses Construction Drawings

1. Topic 13: Specifications

Topic 14: Title Blocks

1. Topic 15: Types and Weights of Lines

Topic 16: Orthographic Projection

1. Topic 17: Oblique Drawings

Topic 18: Isometric Drawings

1. Topic 19: Lettering and Notations

Topic 20: Organizing a Drawing Sheet

1. Topic 21: shading and Crosshatching

Topic 22: Drawing Construction Elevations

1. Topic 23: Drawing Construction Details

Topic 24: Freehand Sketching

1. Topic 25: Drafting with Instruments

Topic 26: Reading Architectural Plans

1. Topic 27: Ductwork Plans

Topic 28: Reading Mechanical Plans

1. Topic 29: Reading Electrical Plans

Topic 30: Reading Plumbing Plans

Topic 31: Introduction to Load Calculations

**X. OTHER REQUIRED TEXTS, SOFTWARE, AND MATERIALS:**

 Handouts will be provided.

 Equipment for typical sketching is required: pencils, paper, protractor, erasers,

straight edge, graduated scales are suggested.

**XI. EVALUATION:**

Assignments will be evaluated according to instructor directives.

 Typically: The grade will be determined by periodic examinations, observation, a

 comprehensive final examination, homework, class participation, and the

 assignments and reports. Neatness in professional style work is rewarded.

 It is suggested:

 Class Participation = 15%

 Assignments = 25%

 Examinations (4) = 40%

 Final Examination = 20%

**XII. SPECIFIC MANAGEMENT REQUIREMENTS:**

Students will be required to complete written exams at times designated in the

 Course Schedule. Students are required to participate in all class activities.

**XIII. OTHER INFORMATION:**

**FERPA:** Students need to understand that your work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**DISABILITIES:** Students with disabilities may contact the Disabilities Service Office, Central Campus, at 800-628-7722 or 937-393-3431.