University of Toledo
Construction Engineering Technology
Master Syllabus

Course Title: Architectural Drafting **Course Code & Number:** CET-1100

Credit Hour Total: 3 **Weekly Contact Hours Lecture:** 2 **Lab Hours:** 2

Pre/Corequisite(s): None

Text: The Professional Practice of Architectural Working Drawings
Wakita, Linde & Bakhoum ISBN: 978-0470618158

Inside Microstation V8i, 10th Edition
Frank Conforti ISBN: 978-1418020842

Software: Graphics: Microstation (Latest Version)

Course Coordinator: Beall

A. **Course Description** (Approved catalog description.)

This course covers the basics of architectural graphic techniques beginning with fundamental drafting skills and representational processes, and progressing toward the production of a complete construction documentation package, including plans, sections, elevations and detail views of an architectural project. The course will emphasize methods and procedures of hand drafting, while introducing computer aided drafting and design production techniques using MicroStation v.8i.

B. **Related Program Outcomes:**

Upon successful completion of the Construction Engineering Technology program, graduates will have:

ABET/Student Outcomes

a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;

g. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;

Program Criteria Outcomes

1. Effective communication skills related to the construction environment through the proper usage of oral, written and graphic techniques.

5. The ability to demonstrate the capability to develop architectural and engineering drawings for construction projects, including working, presentation and shop drawings.

6. Proficiency in the use of computer graphics associated with civil and construction projects.

7. An understanding of working drawings for residential, commercial, highway and heavy construction projects.

Evidence of the success of these outcomes is provided by the collection and analysis of:

- Final Plan Set Drafting Project

C. **Course Objectives:**

Upon the completion of this course the student will have the ability to:

1. Read, understand and produce a neat, legible and coherent set of architectural construction plans.
2. Express engineering and architectural design information in a legible and coherent manner on a set of plans.
3. Use basic drafting tools required to perform the above items.
4. Understand basic engineering graphic presentation including multi-view projection and primary views, sectioning, scales, dimensioning and pictorial views.
5. Understand basic graphic presentation of construction materials (masonry, steel, timber and concrete).
6. Receive somewhat fragmented information and develop a complete drawing reflecting the gathered data.
7. Receive changes and make revisions to existing drawings and carry these changes throughout other related drawings.
8. Produce drawings on computer-aided drafting software including:
   i) Drawing file creation
   ii) Basic element manipulation
   iii) Basic reference file manipulation.
   iv) Drawing set-up and plotting.

D. **Course Outline - Major Content Areas**

1. Lettering and Line Work
2. Multi-view Projection and Sectioning
3. Floor Plans
   i) Wood Frame Construction
   ii) Masonry
   iii) Steel Frame
4. Schedules
5. Plan Details (Stairs, Kitchens, Bathrooms)
6. Foundation Plans
7. Reflected Ceiling Plans
8. Wall Sections
9. Architectural Details
10. Elevation Views
11. Electrical Schematics

E. **Suggested Laboratory Tests**

Portions of the lab exercises are performed manually on the drafting board while others are performed utilizing CADD.

1. Lettering
2. Line Work
3. Multi-view Projection
4. Technical Sketching
5. Dimensioning
6. Wood Frame Floor Plan
7. Masonry Floor Plan
8. Steel Frame Floor Plan
9. Schedule Production
10. Steel Framing Plan
11. Foundation Plan
12. Building Sections
13. Architectural Details
14. Wall Sections
15. Exterior Elevations