Tompkins Cortland Community College

Master Course Syllabus

Course Discipline and Number: DRAF 117 **Year: 2024-2025**

Course Title: Architectural Drafting I **Credit Hours: 3**

Attendance Policy: *To maintain good grades, regular attendance in class is necessary. Absence from class is considered a serious matter and absence never excuses a student from class work. It is the responsibility of all instructors to distribute reasonable attendance policies in writing during the first week of class. Students are required to comply with the attendance policy set by each of their instructors. Students are not penalized if they are unable to attend classes or participate in exams on particular days because of religious beliefs, in accordance with Chapter 161, Section 224-a of the Education Law of the State of New York. Students who plan to be absent from classroom activity for religious reasons should discuss the absence in advance with their instructors. See college catalog for more information.*

Services for Students with Disabilities: *It is the College's policy to provide, on an individual basis, appropriate academic adjustments for students with disabilities, which may affect their ability to fully participate in program or course activities or to meet course requirements. Students with disabilities should contact the Coordinator of Access and Equity Services, to discuss their particular need for accommodations. All course materials are available in alternate formats upon request.*

Course Description

The first of a two course sequence intended to introduce and develop proficiency in basic drafting techniques used in building and construction drawing. In addition, related light construction principles are introduced. Using AutoCad, the student creates building plans, sections and details. Note: The course no longer includes any manual instrument drawing and it is not an architectural "design" course. Prerequisites: ENGL 099 or prior completion or concurrent enrollment in ESL 120, 121, and 122 (or prior completion of ESL 103) if required by placement testing; MATH 090 if required by placement testing; prior completion or concurrent enrollment in RDNG 116 if required by placement testing. 3 Cr. (2 Lec., 3 Lab.) Fall semester.

Course Context/Audience

Architectural Drafting I is a required course for students in the Construction Technology A.A.S. degree and Certificate programs. However, any student interested in architectural or construction related drafting is welcome to enroll.

Basic Skills/Entry Level Expectations

Writing: W2 Student should have completed ENGL 099 (if needed). The course requires short written responses and/or short papers without documentation, particularly personal reflection or narrative.

Math: M2 Completed MATH 090 (if needed) - Course requires only the use of basic mathematical skills.

Reading: R3 Course may be taken concurrently with RDNG 116.

Course Goals

1. Freehand drawing: the student will learn the techniques of producing accurate and proportional drawings using only paper and pencil
2. AutoCAD introduction: the student will learn to use this CAD software package to produce engineering drawings using the most common presentation methods.
3. Building Codes: the student will be able to describe the role of the NYS Building Code in structural design and be able to apply these principles to drawing projects.
4. Structural framing: the student will be able to select structural framing members based on material, loading and orientation factors.
5. Footings and foundations: the student will be able to explain and apply the principles of footing and foundation design.
6. Wood framing: the student will be able to describe the principles of wood framing.
7. Masonry construction: the student will be able to describe the principles of masonry construction.
8. Roof system: the student will be able to describe the various types of roof systems, roof covering materials and techniques used.

Course Objectives/Topics

Objective/Topic	% Course
Freehand lettering/drawing: the student will be able to produce drawings of good quality and proportion using only paper and pencil.	6.66%
Orthographic projection: the student will be able to apply the standard method of presenting a multiview drawing.	6.66%
Footings: the student will be able to design continuous and post footings based on standard engineering principles.	6.66%
Foundations: the student will understand the advantages, limitations and methods of construction for foundations constructed of wood, poured in place concrete, precast concrete, and concrete block.	6.66%
Wood framing: the student will understand the principles of framing of floor and wall systems using platform, balloon, and post and beam construction methods.	20%
Roof systems: the student will understand the various types of roof systems as well as the commonly used types of roof surfacing materials and methods.	6.66%
Floor plans: the student will understand the standards for floor plan drawings and be able to produce drawings of high quality.	6.66%
Foundation plans: the student will understand the standards for foundation plan drawings and be able to produce drawings of high quality.	6.66%
Dimensioning: the student will be able to select and place dimensions on floor and foundation plans using industry standard methods.	6.66%
Sections and details: the student will be able to create wall sections and other details necessary for complete project description.	6.66%
Isometric and oblique drawing: the student will be able to use software to produce isometric and oblique drawings.	6.66%
Perspective drawing: the student will be able to use software to create simple one and two point perspective drawings.	6.66%
Exams	6.66%

General Education Goals - Critical Thinking & Social/Global Awareness

CRITICAL THINKING OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
Students will be able to ➢ develop meaningful questions to address problems or issues. ➢ gather, interpret, and evaluate relevant sources of information. ➢ reach informed conclusions and solutions. ➢ consider analytically the viewpoints of self and others.	Students learn how to read building plans. Students examine the symbols and elements of a published set of construction documents of a locally built construction project in both electronic form and hard copy. Students study the various components of a building, terminology, construction practices and construction documents. Students are required to draft floor plans and foundation plans of a residential building using AutoCAD software, applying industry standards that contain the significant information needed for construction. Students learn how the Residential Code of NYS influences the building industry and building practices. NYS Residential Code is applied to the various systems of a building to determine methods to comply with the code. Student will gain the proficiency needed to understand the scope of a building project. Together with learning how to read and draw plans, studying construction methods and building code, students begin to understand the building industries standards and practices.

SOCIAL/GLOBAL AWARENESS OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
➢ Students will begin to understand how their lives are shaped by the complex world in which they live. ➢ Students will understand that their actions have social, economic and environmental consequences.	Students learn that buildings need to comply with the energy codes of the Residential Code of NYS. Students learn about the prescriptive energy conservation requirements of the Residential Code of NYS. Students learn the importance of the LEED rating system and its affect on the building industry. Students learn about Leadership in Energy and Environmental Design (LEED) and green building. The students learn the up charge to a construction project that needs to meet the LEED and green building requirements. Students learn how the LEED rating system changes the actual construction of a building and the materials used to meet those requirements. Students learn why these requirements are so important to environmentally sustainable construction. Students learn the importance to use resources more efficiently.

Instructional Methods

1. Lecture: lecture should be used to introduce those topics for which it is the best available method.

2. Demonstration: the instructor should make frequent use of demonstration.

3. Individual assistance: during labs, the instructor should work “one on one” with students as necessary.

Methods of Assessment/Evaluation

Method	% Course Grade
Drawings	50%
Final exam (comprehensive)	30%
Midterm exam	20%

Text(s)

Architectural Drawing & Light Construction, Muller, Latest Edition, Prentice-Hall.

Bibliography

Architectural Graphic Standards, Ramsey, © 2000.

ENR, (Periodical) McGraw-Hill.

Civil Engineering (Periodical) ASCE.

Other Learning Resources

Audiovisual No resources specified
Electronic No resources specified
Other No resources specified