Syllabus

PLATO Course Drafting and Design, Semester A

Course Overview

This one-semester course is intended to help you familiarize yourself with various aspects of drafting and design. This course has fifteen lessons organized into four units. Each unit has a Unit Activity and each lesson contains one or more Lesson Activities.

This course covers the fundamental concepts of drafting and design, types of drafting tools, drafting conventions, sketching and drawing techniques, types of views and projections, and basic computer-aided design and drafting (CADD) operations.

You will submit the Unit Activity documents to your teacher, and you will grade your work on the Lesson Activities by comparing them with the given sample responses. The Unit Activities (submitted to the teacher) and the Lesson Activities (self-checked) are the major components of this course. There are other assessment components, namely the mastery test questions that feature along with the lesson; the pre- and post-test questions that come at the beginning and end of the unit, respectively; and an end-of-semester test. All of these tests are a combination of simple multiple-choice questions and technology-enhanced (TE) questions.

Course Goals

This course will help you meet the following goals:

- Analyze the evolution of technical drawing and design.
- Explain the use and handling of drafting tools, instruments, and measuring scales.
- Identify different types of drafting media and analyze various reproduction methods.
- Identify the types of lines, symbols, and drafting formats.
- Understand dimensioning rules and the concept of tolerancing.
- Describe sketching and drawing techniques.
- Explain basic CADD operations.
- Apply geometric construction techniques.
- Describe different types of views and projections.
- Understand surface developments and intersections.

Prerequisite Skills

PLATO Course Drafting and Design, Semester A has the following prerequisites:

- basic math knowledge
- ability to visualize and apply creativity and innovation
- familiarity with the writing process and following guidelines
- basic computer skills
- ability to structure and process information

General Skills

To participate in this course, you should be able to do the following:

- Perform basic operations on a computer.
- Perform online research using various search engines and library databases.
- Communicate through email and participate in discussion boards.

For a complete list of general skills that are required for participation in online courses, refer to the Prerequisites section of the Plato Student Orientation document, found at the beginning of this course.

Credit Value

PLATO Course Drafting and Design, Semester A is a 0.5-credit course.

Course Materials

- notebook
- computer with Internet connection and speakers or headphones
- Microsoft Word or equivalent
- Microsoft Excel or equivalent
- Microsoft PowerPoint or equivalent
- free online CADD tools

Course Pacing Guide

This course description and pacing guide is intended to help you stay on schedule with your work. Note that your course instructor may modify the schedule to meet the specific needs of your class.

Unit 1: Drafting Methods and Tools

Summary

In this unit, you will analyze the evolution of technical drawing and design. You will learn how to use various drafting tools and equipment. You will explore different types of drafting media and reproduction methods.

Day	**Activity/***Objective*	Type
1 day: 1	**Syllabus and Plato Student Orientation** *Review the Plato Student Orientation and Course Syllabus at the beginning of this course.*	Course Orientation
3 days: 2–4	**History of Drawing and Design** *Analyze the evolution of technical drawing and design.*	Lesson
3 days: 5–7	**Drafting Tools and Equipment** *Explain the use and handling of drafting equipment, instruments, and measuring scales.*	Lesson
3 days: 8–10	**Drafting Media and Reproduction Methods** *Identify different types of drafting media and reproduction methods.*	Lesson
1 day: 11	**Para Jumble**	Game
3 days: 12–14	**Unit Activity/Threaded Discussion—Unit 1**	Unit Activity
1 day: 15	**Post-test—Unit 1**	Assessment

Unit 2: Drafting Conventions

Summary

In this unit, you will learn about the types of lines and discuss the importance of line weight and quality. You will familiarize yourself with lettering styles and rules. You will identify various drafting symbols and formats. You will apply dimensioning rules and understand the concept of tolerancing.

Day	**Activity/***Objective*	Type
4 days: 16–19	**Line Conventions** *Describe the types of lines, line weight, and line quality.*	Lesson
3 days: 20–22	**Lettering Conventions** *Describe lettering styles and rules.*	Lesson
4 days: 23–26	**Symbols and Formats** *Identify drafting symbols and discuss various drafting formats.*	Lesson
5 days: 27–31	**Dimensioning and Tolerancing** *Explain dimensioning rules and systems and analyze the effect of tolerance on dimensioning.*	Lesson
1 day: 32	**Space Jumble**	Game
3 days: 33–35	**Unit Activity/Threaded Discussion—Unit 2**	Unit Activity
1 day: 36	**Post-test—Unit 2**	Assessment

Unit 3: Sketching and Drawing Techniques

Summary

In this unit, you will demonstrate sketching techniques and prepare freehand sketches. You will perform basic CADD operations. You will use basic mathematics skills and apply geometric construction techniques.

Day	**Activity/***Objective*	Type
5 days: 37–41	**Freehand Sketching** *Describe sketching techniques and prepare freehand sketches.*	Lesson
4 days: 42–45	**Mathematics** *Apply basic mathematics skills to drafting.*	Lesson
5 days: 46–50	**Computer-Aided Design and Drafting** *Identify and perform basic CADD operations.*	Lesson
5 days: 51–55	**Geometric Constructions** *Explain various methods to draw geometric constructions.*	Lesson
1 day: 56	**Thwack-A-Mole**	Game
4 days: 57–60	**Unit Activity/Threaded Discussion—Unit 3**	Unit Activity
1 day: 61	**Post-test—Unit 3**	Assessment

Unit 4: Projections, Developments, and Intersections

Summary

In this unit, you will describe various types of views and projections. You will interpret intersections of various objects and surface developments.

Day	Activity/*Objective*	Type
5 days: 62–66	**Multi-view Projections** *Describe multi-view projections.*	Lesson
5 days: 67–71	**Projection on Auxiliary planes** *Demonstrate the projection of auxiliary views.*	Lesson
5 days: 72–76	**Sectional Views** *Describe sectional views.*	Lesson
6 days: 77–82	**Developments and Intersections** *Explain intersections and surface developments.*	Lesson
1 day: 83	**Para Jumble**	Game
4 days: 84–87	**Unit Activity/Threaded Discussion—Unit 4**	Unit Activity
1 day: 88	**Post-test—Unit 4**	Assessment
1 day: 89	**Semester Review**	
1 day: 90	**End-of-Semester Test**	Assessment