

East Penn School District
Secondary Curriculum

A Planned Course Statement
for

Drafting and Design II

Course # 910

Grade(s) 9,10,11,12

Department: Technology Education

Length of Period (mins.) 42

Total Clock Hours: 63

Periods per Cycle: 6

Length of Course (yrs.) 0.5

Type of Offering: required ✓ elective

Credit: 0.5

Adopted: 4/23/07

Developed by:

Scott Didra

Description of Course #910

Course Title: Drafting & Design II

Description: This course expands the skills of Drafting I, giving the student a basic understanding of orthographic projection, isometric development, machine drawing, and scale drawings. Process learning and problem solving are key points in this class. Students will be given the assignments on the drawing board and in CADD.

Goals:

- To provide an area of education in which the student will develop mature working habits, a feeling of responsibility, and the ability to plan and execute work independently and in cooperation with others.

Requirements:

- Students will be required to complete all work assigned by the instructor

Text:

French, Svensen, Hesel, and Urbanick, Mechanical Drawing, eleventh edition

Key to Levels of Achievement (Listed with each learning objective)

Awareness (A):	Students are introduced to concepts, forms, and patterns.
Learning (L):	Students are involved in a sequence of steps and practice activities which involved further development and allow evaluation of process.
Understanding (U):	Students demonstrate ability to apply acquired concepts and skills to individual assignments and projects on an independent level.
Reinforcement (R):	Students maintain and broaden understanding of concepts and skills to accomplish tasks at a greater level of sophistication.

Course Objectives –

Unit	#	Objective	L	Content	Evaluation	Standard
I. Introduction to Drafting II – Reinforcement of Sketching Skills Used In Drafting and Design.	1	Students will understand the importance of sketching as it relates to communication.	A U L	<ul style="list-style-type: none"> Sketching a drawing on the board 	<ul style="list-style-type: none"> Teacher Observation 	3.6 3.8
II. Creating Layers In CADD Drafting	2	Students will be able to create multiple layers for use in Drafting.	A U	<ul style="list-style-type: none"> Creating layers in the layer table. 	<ul style="list-style-type: none"> Teacher Observation 	3.6
III. Understanding Line Styles Used In Drafting.	3	Students will understand the various line styles and line weights used in Drafting.	A	<ul style="list-style-type: none"> Demonstration of various line styles and line weights and how they apply to various drawings. 	<ul style="list-style-type: none"> Teacher Observation 	3.6
IV. Application of Knowledge In Creating Drawings With Various Line Weights.	4	Students will be able to create drawings in CADD and on the board using various line styles, and line weights.	L U	<ul style="list-style-type: none"> Create drawings with various line styles and line weights. 	<ul style="list-style-type: none"> Teacher Observation Project graded assignments 	3.8
V. Dimensioning	5	Students will learn basic principles of dimensioning as they relate to drawings.	A	<ul style="list-style-type: none"> Demonstration of dimensioning on the board and in CADD Drafting. 	<ul style="list-style-type: none"> Teacher Observation 	3.6
VI. Application Of Knowledge In Creating Drawings Using Various Line Styles, Line Weights, and Dimensioning.	6	Students will be able to construct final drawings on the board and in CADD using various line styles, line weights, and dimensions.	L U R	<ul style="list-style-type: none"> Create drawings using various line styles, line weights, and dimensions. 	<ul style="list-style-type: none"> Teacher Observation Project graded assignments 	3.8
VII. Orthographic Projections	7	Students will gain an understanding of multi-view drawings.	L	<ul style="list-style-type: none"> Demonstration of orthographic projections using the “glass box”. 	<ul style="list-style-type: none"> Teacher Observation 	3.6
	8	Students will be able to create drawings using orthographic projections.	U	<ul style="list-style-type: none"> Visualize various views of an object to create a multi-view drawing. 	<ul style="list-style-type: none"> Teacher Observation Project graded assignments 	3.8

Unit	#	Objective	L	Content	Evaluation	Standard
VIII. Line Styles and Line Weights In Orthographic Projections	9	Students will understand the importance of using variable line styles and line weights in multi-view drawing.	R	<ul style="list-style-type: none"> • Various line styles and line weights: • Visible lines, hidden lines, center lines • Etc. 	<ul style="list-style-type: none"> • Teacher Observation 	3.6
IX. Machine Drawings	10	Students will create 2D machine drawings in orthographic projection. Drawings will be created on the board and in CADD.	L U	<ul style="list-style-type: none"> • Drawings assigned from the book 	<ul style="list-style-type: none"> • Teacher Observation • Project graded assignments 	3.7 3.8
X. Pictorial Drawings	11	Students will gain an understanding of the various types of pictorial drawings	L	<ul style="list-style-type: none"> • Demonstrate three different types of pictorial drawings: • Isometric, Oblique, Perspective 	<ul style="list-style-type: none"> • Teacher Observation 	3.6
	12	Students will understand the importance of using multi-view drawings as they begin to create pictorial drawings.	L U R	<ul style="list-style-type: none"> • Create pictorial drawings on the board and in CADD. • Isometric, Oblique, Perspective 	<ul style="list-style-type: none"> • Teacher Observation • Project graded assignments 	3.8
XI. Shape Description and Model Building	13	Students will gain an understanding of using 3 dimensional models in correlation to their drawings.	A	<ul style="list-style-type: none"> • Sample projects in model building and their relationship to multi-view and pictorial drawings. 	<ul style="list-style-type: none"> • Teacher Observation 	3.6
XII. Sheet Metal Layout	14	Students will learn various methods of using multi-view drawings to create sheet metal layouts for model building	A	<ul style="list-style-type: none"> • Demonstration of sheet metal layout in CADD. 	<ul style="list-style-type: none"> • Teacher Observation 	3.6 3.7
XIII. 3 Dimensional Model Building	15	Students will learn the proper techniques and safety precautions used in cutting for model building.	A	<ul style="list-style-type: none"> • Demonstration of model building techniques. • Safety using sharp cutting tools. 	<ul style="list-style-type: none"> • Teacher Observation 	3.6 3.7A
XIV. Sketching, Detail Drawings, Pictorial Drawings, Models	16	Students will apply knowledge of Orthographic projections and pictorial drawings as they relate to 3 dimensional models.	L U R	<ul style="list-style-type: none"> • Sketches, plans, and model building 	<ul style="list-style-type: none"> • Teacher Observation • Project graded assignments 	3.7A 3.8

Unit	#	Objective	L	Content	Evaluation	Standard
XV. Portfolio	17	Students will understand the importance of organization and presentation of final plans and projects.	L R	<ul style="list-style-type: none"> • Demonstration of putting together a portfolio of work 	<ul style="list-style-type: none"> • Teacher Observation 	3.6 3.7
	18	Students will put together a portfolio of all work from the course.	L U R	<ul style="list-style-type: none"> • Projects from course 	<ul style="list-style-type: none"> • Teacher Observation • Project graded assignments 	3.6 3.7 3.8