

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: DRAFTING

Code No.: DRF 107-3

Program: WELDING AND FABRICATING

Semester: 1

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New: _____ Revision: _____ X

APPROVED: *W.P. Crozietto*
Chairperson

88/06/06
Date

DRAFTING

DRF 107-3

Course Name

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PHILOSOPHY/GOALS:

To develop an understanding of the use of drawings as a means of communication.

To produce neat sketches of mechanical and structural features.

To appreciate the need for and be able to produce clear, legible drawings.

To develop the skill of accurate interpretation of given information and be able to convert this into a working drawing.

To develop the skill of accurate interpretation of welding symbols.

To acquire the skill of basic development and layout work.

METHOD OF ASSESSMENT (GRADING METHOD):

Each project will be judged and a value of A, B, or C given.

TEXTS:

Blueprint Reading for Welders: A. E. Bennet, Louis J. Siy
(Delmar Publishers Inc.)

Engineering DWG: Jensen/helsel

REFERENCE TEXTS:

Design of Weldment: Omer W. Blodgett

Sheet Metal Drafting: M.L. Betterly (McGraw-Hill)

SPECIFIC OBJECTIVES:

UNIT 1:

Identify the objectives of a drawing office.
Demonstrate ability to use and take care of drafting equipment.
Identify the need for the use of guidelines for lettering work.
Demonstrate ability to letter clearly and legibly.

UNIT 2:

Identify the various types of lines used in line conventions.
Demonstrate ability to produce lines identified in (above).

UNIT 3:

Identify the need for scaled dimensions.
Demonstrate ability to use a scale rule.
Demonstrate ability to use a scale rule to produce lines of a given length.

UNIT 4:

Demonstrate ability to use T-squares and set squares independently.
Identify the use of set squares to obtain various angles by using them in combined form.
Demonstrate ability to produce a variety of angles using T-squares and set squares in various combinations.

UNIT 5:

Identify the use of geometric constructions.
Identify the need for accuracy with respect to geometric constructions.
Demonstrate ability to produce various geometric shapes by constructions.
Demonstrate ability to solve a variety of problems by using geometric constructions.

UNIT 6:

Develop an understanding for the use of multi-view drawings.
Identify the need for third angle orthographic projection.
Demonstrate ability to place views in correct positions for third angle.

UNIT 6 continued:

Identify the number of views required in a third angle orthographic projection in order to adequately describe a component.

Demonstrate ability to produce an orthographic drawing of a component, select the correct views and produce a working drawing using the minimum number of views required in order that the component may be manufactured correctly. (Neglecting dimensions.)

UNIT 7:

Develop an appreciation for correct method of dimensioning drawings. Demonstrate ability to interpret (above) and produce a dimensioned drawing of a simple component.

Demonstrate ability to dimension a more complex drawing involving circular features, angular features.

Identify and use alternative methods of dimensioning a drawing.

UNIT 8:

Identify the need for sectional views.

Identify cutting planes.

Identify methods of cross hatching.

Identify material symbols.

Identify various types of sections.

Demonstrate ability to draw various types of sectional views.

Demonstrate ability to select the correct sectional view to be drawn.

UNIT 9:

Identify the use of auxiliary views.

Demonstrate ability to produce single auxiliary views.

Demonstrate ability to select correctly, drawings requiring auxiliary views.

UNIT 10:

Demonstrate use of local and general notes on drawings.

Demonstrate ability to interpret various drawing conventions with respect to commercial practices.

UNIT 11:

Demonstrate knowledge of welding symbol interpretation.

Demonstrate ability to read an assortment of symbols correctly.

<u>NUMBER</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	<u>INTRODUCTION:</u> - use of equipment - types of pencils - grades of leads	
2	2	<u>LETTERING:</u> - guide - style and proportion - numerals and fractions - notes, sub-titles and titles - title blocks	
3	2	<u>ARCHITECT'S SCALE:</u> - use of scales - fraction scale - full size scale	
4	1	<u>ALPHABET OF LINES:</u> - types of lines and their use - arrow heads	
5	10	<u>GEOMETRIC CONSTRUCTION:</u> - bisecting straight lines and angles - dividing lines into equal parts - producing arcs and hexagons - tangents, rounds and fillets - arc tangent to straight line and arc - ellipse - flat pattern problems	
6	21	<u>ORTHOGRAPHIC PROTECTION:</u> - three view diagrams - missing line problems - missing view problems - auxiliary views - partial views	
7	8	<u>DIMENSIONING AND NOTES:</u> - regular solids - cylindrical shapes - holes - radii and fillets - angles - local, general and cautionary notes - surface finish marks - structural layout, beams, columns, mis. - drafting terminology and abbreviations	