

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: DRAFTING
Code No.: DRF 106-3
Program: Machine Shop
Semester: First
Date: June, 1983
Author: G. MacLean

New: _____ Revision: x

APPROVED: _____
Chairperson Date

DRAFTING
Course Name

DRF 106-3
Course Number

PHILOSOPHY/GOALS:

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

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.

METHOD OF ASSESSMENT (GRADING METHOD):

The final grade will be established by combining the works obtained in drawing assignments with test marks. This will be an ongoing process throughout the semester.

TEXTBOOK(S):

Problems in Mechanical Drawing, Levens & Cooper

Blueprint Reading for Machinists Intermediate, Delmar

Reference Texts:

Mechanical Drawing, French, Svenson, Hesel, Urbanick - McGraw-Hill

Machinery's Handbook - Industrial Press

COURSE OUTLINE

1. Use of drafting equipment
2. Lettering
3. Alphabet of lines
4. Scale drawings
5. Geometric construction
6. Orthographic projection
7. Freehand sketching
8. Sections
9. Dimensioning techniques
10. Isometric drawing
11. Auxillary views
12. Limits and fits
13. Screwthreads
14. Interpretation of technical drawings

SPECIFIC OBJECTIVES

Unit I

- 1) Identify the objectives of a drawing office.
- 2) Demonstrate ability to use and take care of drafting equipment.
- 3) Identify the usage of various types of leads, (pencils).
- 4) Identify the need for the use of guidelines for lettering work.
- 5) Demonstrate ability to letter clearly and legibly.

Unit II

- 6) Identify the various types of lines used in line conventions.
- 7) Demonstrate ability to produce lines identified in (6).

Unit III

- 8) Identify the need for scaled dimensions.
- 9) Demonstrate ability to use a scale rule.
- 10) Demonstrate ability to use a scale rule to produce lines of a given length.
- 11) Demonstrate ability to produce a scale by construction.

Unit IV

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

Unit V

- 15) Identify the use of geometric construction.
- 16) Identify the need for accuracy with respect to geometric constructions.
- 17) Demonstrate ability to produce various geometric shapes by construction.
- 18) Demonstrate ability to solve a variety of problems by using geometric constructions.

Unit VI

- 19) Develop an understanding for the use of multi-view drawings.
- 20) Identify the need for third angle orthographic projection.
- 21) Demonstrate ability to place views in correct positions for third angle projection.
- 22) Demonstrate ability to produce a drawing in third angle projection.
- 23) Identify the number of views required in a third angle orthographic projection in order to adequately describe a component.

Unit VI (con't)

- 24) 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 VII

- 25) Identify the need for good quality freehand sketching.
- 26) Demonstrate ability to produce acceptable freehand single view sketches.
- 27) Demonstrate ability to produce acceptable multi-view freehand sketches.

Unit VIII

- 28) Develop an appreciation for correct method of dimensioning drawing.
- 29) Demonstrate ability to interpret (28) and produce a dimensioned drawing of a simple component.
- 30) Demonstrate ability to dimension a more complex drawing involving circular features, placement and balance.
- 31) Identify and use alternatives methods of dimensioning a drawing.

Unit IX

- 32) Identify the need for isometric drawings.
- 33) Demonstrate knowledge of isometric axes.
- 34) Demonstrate ability to produce isometric lines.
- 35) Demonstrate ability to produce non-isometric lines.
- 36) Demonstrate ability to produce isometric drawings of various components from orthographic projections.

Unit X

- 37) Identify the need for sectional views.
- 38) Identify cutting planes.
- 39) Identify methods of cross hatching.
- 40) Identify various types of sections.
- 41) Demonstrate ability to draw various types of sectional views.
- 42) Demonstrate ability to select the correct sectional view to be drawn.

Unit XI

- 43) Identify the use of auxillary views.
- 44) Demonstrate ability to produce single auxillary views.
- 45) Demonstrate ability to select correctly, drawings requiring auxillary views in order to ease shop floor problems.

Unit XII

- 46) Demonstrate use of local and general notes on drawings.
- 47) Demonstrate ability to interpret various drawing conventions with respect to commercial practices.

Unit XIII

- 48) Demonstrate degree of understanding of limits and fits from knowledge gained in major area.
- 49) Identify the need for correct application of limits and tolerances to drawings.
- 50) Identify an accumulation of tolerances and its effect.
- 51) Demonstrate ability to apply limits and tolerances to drawings correctly.

Unit XIV

- 52) Demonstrate degree of understanding of screw thread terminology from knowledge gained in major area.
- 53) Identify various methods of thread representation on a drawing.
- 54) Demonstrate ability to produce a drawing involving the use of various methods of screw thread representation.
- 55) Demonstrate ability to correctly dimension a screw thread on a drawing.
- 56) Demonstrate ability to read correctly drawings of a more complex nature.