#117

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: DRAFTING

Code No.: DRF 106-4

Program: MACHINE SHOP

Semester:

Date: MAY, 1987

Author: C. RISING

New: _____ Revision: X

APPROVED: L.P. Arazietti
Chairperson

87/05/05
Date

CALENDAR DESCRIPTION

DRAFTING	DRF 106-4
Course Name	Course Number

PHILOSOPHY/GOALS:

To ensure that the student is fully aware of the reason for, and the methodology of producing drawings for use on the shop floor. Further, the student will have a full appreciation of the fact that a drawing is a communication and as such, must be complete, easy to reading and correct with respect to all information given on the drawing.

METHOD OF ASSESSMENT (GRADING METHOD):

TEXTBOOK(S):

Introduction to Technical Drawings (Stirling)

REFERENCE MATERIALS

CSA B78.1 & B78.2

McGraw-Hill "Text Films"

DRAFTING
DRF 106-4

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	1	Introduction - The Drafting room - Use and care of instruments
2	2	Technical Lettering
3	2	Line Conventions - Object Lines - Centre Lines - Hidden Lines - Dimension Lines - Extension Lines etc.
4	1	Scales - Architects and Metric
5	2	Geometric Constructions - Use of compass
6	16	Orthographic Projections - Three view drawing - Balancing the drawing
7	4	Freehand Sketching
8	4	Basic Dimensioning - Rectangular objects - Circular features - Placement, balance
9	2	Isometric Drawing
10	6	Sectional Views - Cutting Plane, cross-hatching, Full, Half Sections, Offset, Aligned Sections Removed, Revolved Sections, Broken Out Sections

DRAFTING
DRF 106-4

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
11	4	Auxiliary Views - Single auxiliaries only
12	2	Drawing Conventions - Representation - Local, General Notes - Commercial practices
13	4	Limits and Fits - Theory, interchangeability - Basic hole, basic shaft system - Accumulation of Tolerances
14	4	Gears - Definitions - Presentation of data

MACHINE SHOP
DRAFTING
DRF 106-4

GENERAL OBJECTIVES:

To develop an understanding of the use of drawings as a means of communicatio

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.

SPECIFIC OBJECTIVES:

UNIT #1:

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 #2:

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

UNIT #3:

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 #4:

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 combined form.

14. Demonstrate ability to produce a variety of angles using T-square and s squares in various combinations.

UNIT #5

15. Identify the use of geometric constructions.

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 #6:

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 view required in a third angle orthographic projection in order to adequately describe a component.

24. Demonstrate ability to produce on 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:

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 #8:

28. Develop an appreciation for correct method of dimensioning drawings.

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 circula features, angular features, placement and balance.

31. Identify and use a alternative methods of dimensioning a drawing.

UNIT #9:

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 #10:

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 #11:

43. Identify the use of auxilliary views.

44. Demonstrate ability to produce single auxiliary views.

45. Demonstrate ability to select correctly, drawings requiring auxilliary views in order to ease shop floor problems.

UNIT #12:

46. Demonstrate use of local and general notes on drawings.

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

UNIT #13:

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 #14:

52. Demonstrate degree of understanding of screw thread terminology from knowledge gained in major area.

53. Identify various methods of thread representatoin 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.

UNIT #15:

56. Demonstrate degree of understanding of gear terminology from knowledge gained in major area.

57. Identify various methods of drawing gears.

58. Identify various methods of dimensioning a gear.

59. Demonstrate ability to draw and dimension a gear.

UNIT #16:

60. Demonstrate knowledge of drawing interpretation by reading a selection of drawings produced by classmates and submitting written suggestions to improve the drawing where necessary.

61. Demonstrate ability to read correctly drawings of a more complex nature.