

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

COURSE OUTLINE

Course Title: DRAFTING
Code No.: ARC 111-4
Program: ARCHITECTURAL TECHNICIAN
Semester: I
Date: JUNE, 1984
Author: M. URSELL

New: _____ Revision: X

APPROVED:

J.P. Crozietto
Chairperson

Date

DRAFTING
Course Name

ARC 111-4
Course Number

PHILOSOPHY/GOALS:

To identify and develop basic architectural drafting skills.

To identify and detail basic building components.

To research various sources of information related to design and construction.

METHOD OF ASSESSMENT:

SEE ATTACHED SHEET.

TEXTBOOK(S):

Architecture - Design Engineering & Drawing - by W.P. Spence

Student Workbook for the above.

Canadian Wood Construction - Literature & Binder - by Canadian Wood Council

METHOD OF ASSESSMENT (all courses)

The following grades will be assigned:

A - 75-100%	consistently above average achievement
B - 66-74%	average achievement
C - 55-65%	satisfactory achievement
I - incomplete	
R - Repeat	the student has failed to achieve the objectives of the course and must repeat the course

The "I" grade (incomplete) designation indicates that the student has not completed the objectives required in specific course areas.

Semester work will be made up of formal tests and assignments. All tests and assignments must be completed when assigned. Late assignments or projects will not be tolerated.

Attendance is also mandatory in all classes.

Tests and assignments will be given on a regular basis throughout the semester. The weighted grade between practical theoretical work will depend on the type of course. Final examinations are also mandatory for any student that does not maintain an "A" average in the course or who has not completed all assignments by their due date.

NOTE: Chronic absenteeism by any student will result in the student not being admitted to class and ultimately his failure to receive an acceptable grade in the course.

ARCHITECTURAL DRAFTING

ARC 111-4

TEXT:

Architecture - Design Engineering & Drawing - by W.P. Spence

REFERENCE TEXTS:

Architecture - Realization Through Planning - by. G.N. Anthony (Pitman)

Building Construction Handbook - By Merritt (McGraw-Hill)

Manual of Metric Building Drawing Practice - by National Research Council

Architectural & Building Trades Dictionary - by Burke Dalsell Townshed
(General)

Technical Notes on Brick & Tile - by Canadian Brick & Tile Association

Modular Co-ordination - by R.S. Kent - National Research Council

Canadian Wood Council Publication - by Canadian Wood Council

Construction Metriguide - by Domtar

Ontario Building Code

Architectural Graphic Standards - by Ramsey & Sleeper

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCES
1.	1	<u>Introduction</u>	
2.	2	<u>Lettering & Scales (Review)</u>	
3.	4	<u>Geometric Construction (Review)</u>	
4.	4	<u>Orthographic Projection</u> Its relation to Architectural Drawing	
5.	3	<u>Pictorial Drawing</u>	
6	4	<u>Dimensioning</u> As applied to Architectural Drawing Dimensioning rules	
7.	4	<u>Symbols & Conventions</u> Architectural Mechanical Electrical Topographic	
8.	3	<u>Sources of Information</u> <u>National Building Code</u> Acts & Regulations Zoning Regulations Trade Literature, etc.	
9.	8	<u>Basic Building Systems (General)</u> Wood Frames Load Bearing Masonry Steel Skeleton Frame Post & Beam Construction Contemporary Modular Construction	
10.	10	<u>Wood Frame Construction</u> Framing lumber - softwood species Nails - types used in construction Framing details for residential buildings Post & Beam construction Design factors Structural design Decking - calculations for deck design	
11.	4	<u>Modular Building</u> Description of various methods of modular construct - ex UNICOM etc.	
12.	35	<u>Project</u> Working drawings for a small construction project of a residential or light commercial nature.	
13.	12	<u>The S.I. System of Metrication</u> <u>Linear Measurements for floor plans, architectural details and site plans.</u>	

PREFACE

The student entering this course has had varied formal education and/or experience in Architectural Design and Drafting. For this reason, each student will be expected to write a pre-test to determine his general knowledge of drafting theory. After completion of the pre-test, the instructor will determine the speed at which each individual student may proceed from simple projects to the more complex and demanding working drawing projects. However, all students will review basic drafting theory as quickly as their individual abilities allow.

Behavioural Objectives

Drafting & Design - ARC 111-4

1. To write a pre-test in general drafting theory.
2. To review the techniques of mechanical and free-hand lettering.
3. To review the use of the Architects scale.
4. To solve various Architects scale problems.
5. To practice and solve geometric construction problems as follows:
 - a) To divide a line into a given number of parts.
 - b) To draw a hexagon given the distance across corners.
 - c) To draw a regular pentagon.
 - d) To plot a rectangular boundary given one basic line.
6. To review the identity of orthographic projections.
7. To construct orthographic projections.
8. To solve orthographic missing line problems.
9. To identify the functions of the architectural draftsman.
10. To identify the steps in design and construction of any building from the basic concept to beginning of actual construction.
11. To identify the types of plans required for the complete design of a building.
12. To identify and construct an isometric pictorial drawing.
13. To identify and visualize shape description.
14. To identify and construct an oblique pictorial drawing in cabinet and cavalier.
15. To construct circular contours in isometric and oblique.
16. To identify and construct a two-point perspective.
17. To construct free-hand pictorial sketches of various architectural objects in isometric or oblique.
18. To identify the techniques used in Architectural dimensioning.
19. To identify and draw the various architectural symbols.
20. To identify and draw the various architectural conventions.

21. To identify and draw the various electrical symbols.
22. To identify and draw the various mechanical symbols.
23. To identify and draw the various topographical symbols.
24. To solve problems involving the use of the National Building Code, "Part Nine", such as joist sizing, rafter sizing, load bearing, thermal insulated, and acoustically rated wall selection, etc.
25. To design and construct a drawing for a set of stairs.
26. To solve residential design problems such as traffic flow, circulation and separation of activities.
27. To identify and learn the use of various sources of information such as the various acts and regulations, zoning regulations, trade literature and the architectural graphic standards, etc.
28. To identify and detail various architectural building systems such as:
 - wood frame construction
 - load bearing masonry
 - steel skeleton frame
 - post and beam construction
29. To identify the principles of modular construction.
30. To identify and draw framing details for a residential type structure.
31. To identify the design factors used in post and beam construction.
32. To select timber decking for post and beam construction.
33. To identify the most economical layout for a residential type building such as length of exterior walls, corners, etc.
34. To identify and solve various orientation problems in site planning
35. To identify the various construction materials that have been "hard" or "soft" converted to S.I. at the present time.
36. To solve various assignments in S.I. conversion and involving the building code regulations.
37. To draw and convert existing Imperial Architectural details to S.I.

NOTE:

All of the above rather specific and/or general objectives are required to complete the one major objective of this course as follows: "To design and construct a complete set of working drawings for a residential type structure".

Including:

- a) floor plans
- b) site plans
- c) elevations
- d) wall sections
- e) custom details
- f) framing plans
- g) schedules