

SAULT COLLEGE

of Applied Arts and Technology

Sault Ste. Marie

COURSE OUTLINE

DRAFTING

ARC 111-4

revised March, 1979 by M. Urse11

ARCHITECTURAL DRAFTING

ARC 111-4

TEXT:

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

Architectural Technology - by Obermeyer
- McGraw-Hill

REFERENCE TEXTS:

Architecture - Realization Through Planning - by G. H. 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)

Architectural Graphic Standards - by Ramsay & Sleeper (General)

Masonry Simplified - by Dalsell Townshed (General)

Manual of Masonry Construction - by Cooksville-Laprarie Brick Ltd.

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

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

Simplified Engineering for Architects & Builders - by H. Parker

Canadian Wood Council Publications - by Canadian Wood Council

Construction Metriguide - by Domtar

Topic Number	Periods	Topic Description	Reference
1	1	<u>Introduction</u>	
2	2	<u>Lettering & Scales</u> (Review)	
3	4	<u>Geometric Construction</u> (Review)	
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> National Building Code Acts & Regulations Zoning Regulations Trade Literature, etc.	
9	8	<u>Basic Building Systems</u> (General) 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 construction - ex UNICOM etc.	

Topic Number	Periods	Topic Description	Reference
12	2	<u>Coatings & Finishings</u> Types and uses of paints and finishes for woods.	
13	35	<u>Project</u> Working drawings for a small construction project of a residential or light commercial nature.	
14	6	<u>Photography and Photo Drawing</u> Uses for Methods and Materials used Architectural applications	
15	12	<u>The S.I. System of Metrication</u> Linear Measurements for floor plans, architectural details and site plans.	

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.

Behavioral 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 constructions.
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 various softwood species used in framing.
31. To identify and learn the use of different types of construction nails.
32. To identify and draw framing details for a residential type structure.
33. To identify the design factors used in post and beam construction.
34. To design timber decking for post and beam construction.
35. To identify the most economical layout for a residential type building such as length of exterior walls, corners, etc.
36. To identify and solve various orientation problems in site planning.
37. To identify the types and uses of paints and finishes for woods.
38. To identify the uses for photo drawing.
39. To identify the materials and methods used in photo drawing and reproduction.
40. To identify the various architectural applications for photo drawing.
41. To identify the various construction materials that have been "hard" or "soft" converted to S.I. at the present time.
42. To solve various assignments in S.I. conversion and involving the building code regulations.

43. 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