

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

COURSE OUTLINE

Course Title: DRAFTING & DESIGN

Code No: ARC 113

Program: ARCHITECTURAL TECHNICIAN/TECHNOLOGY

Semester: TWO

Date: NOVEMBER, 1987

Author: MEL URSELL

New: _____ Revision: X

APPROVED: _____
Chairperson Date

CALENDAR DESCRIPTION

DRAFTING & DESIGN

ARC 113-4

Course Name

Course Number

PERFORMANCE OBJECTIVES:

The general objective of this course is to produce a set of working drawings for a low density residential type project. The students will also write a section of specifications for the above project. The students will demonstrate good lettering, linework and layout accuracy. Although the students will work in groups (design team) for their major project, each student will also be responsible for a seminar on a topic to be presented by the instructor at the beginning of the course.

TEXTBOOKS:

Architectural Design, Engineering & Construction
Student Workbook (for above)
Mechanical & Electrical Systems for Buildings
Architectural Detailing Simplified
Manual of Metric Building & Drawing Practice
Canadian Wood Construction - Binder & Literature
Ontario Building Code
A Graphic Vocabulary for Architectural Presentation
Timber Design Manual

REFERENCE BOOKS:

Building Construction Handbook by Merritt (McGraw Hill)
Architectural & Building Trades Dictionary
by Burke Dalsell Townshed (General)
Architectural Graphic Standards
by Ramsay & Sleeper (General)
Simplified Engineering for Architects & Buildings
by H. Parker

TOPIC NO.	PERIODS	DESCRIPTION
1	30	<u>Building Technology</u> <ul style="list-style-type: none">- the building and the site- types of subsurface investigation- soil categories- foundation types- unreinforced concrete wall footing design- O.B.C. regulations governing foundations- roof types and design- basic structural systems- building flashings- load bearing masonry design and detail- detail of various structural systems- O.B.C. regulation governing walls etc.
2	20	<u>Contracts & Specifications</u> <ul style="list-style-type: none">- terminology- types- Canadian Format for Construction Specifications- tendering procedures- standard format of agreements- types of surety bonds and their application- project insurance requirements- Mechanics Lien Act- various specification writing assignments
3	40	<u>Working Drawings</u> <ul style="list-style-type: none">- The student shall design and draw a complete set of working drawings for a low density class "C" occupancy project. <p>NOTE: See objectives for description of requirements</p>

UNIT #1 - BUILDING TECHNOLOGY

1. The student shall identify the requirements for site investigation.
2. The student shall identify the methods of subsurface exploration.
3. The student shall classify the major soil categories as to bearing capacity.
4. The student shall identify the terminology associated with simple unreinforced foundations.
5. The student shall design an unreinforced wall footing.
6. The student shall detail an unreinforced wall footing.
7. The student shall identify and be able to relate to others the O.B.C. regulations governing foundations.
8. The student shall identify the elements of architectural roof design.
9. The student shall consider the factors involved in roof design and construction.
10. The student shall identify the basic structural systems for low density buildings.
11. The student shall design a steel lintel.
12. The student shall identify the "rain screen wall principle" and its affects.
13. The student shall identify the types and locations for building flashings.
14. The student shall identify the principles of design for clay masonry bearing wall.
15. The student shall detail various structural systems.

UNIT #2 - CONTRACTS & SPECIFICATIONS

16. The student shall identify a building specification.
17. The student shall identify the types of specifications.
18. The student shall identify the common types of construction contracts.
19. The students shall identify the format for Canadian Specifications.
20. The student shall identify a tender.
21. The student shall identify the tendering procedure.
22. The student shall identify the "standard form of agreement between client and architect".
23. The student shall identify the general conditions for a set of specifications.
24. The student shall identify types of penalty clauses.
25. The student shall identify the performance bond.
26. The student shall identify the bid bond.
27. The student shall identify the labour and material payment bond.
28. The student shall identify the types of building and construction insurance.
29. The student shall identify the architect's liabilities and insurance of them.
30. The student shall identify the "Mechanics Lien Act".
31. The student shall construct the Standard Form of Construction Tender.

UNIT #3 - WORKING DRAWINGS

32. The student shall design and draw a complete set of working drawings for a low density class "C" occupancy project which shall include:

- (a) all floor plans
- (b) all elevations
- (c) all sections
- (d) all schedules
- (e) a site plan
- (f) custom details
- (g) all structural drawings
- (h) all mechanical drawings
- (i) all electrical drawings

NOTE: All formal drawings will be drawn in metric measure.