SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON.

COURSE OUTLINE

URSE TITLE:	Drafting and Design
URSE CODE:	ARC 111
OGRAM:	Architectural Technology
EMESTER:	I (Fall)
UTHOR:	B. Sparrow
DATE:	June 1992
PREVIOUSLY DATED:	September 1991

M. Sparrow Aug 92

APPROVED: _____ (DEAN) DATE: 92-08-18

TOTAL CREDIT HOURS: 6
PREREQUISITES: NONE

I. PHILOSOPHY AND GOALS

This course provides the student with an introduction to the fundamentals of drafting, design, wood frame construction, and development of skill in technical and design drawing using a variety of media. The student will demonstrate these skills and knowledge by preparing design and working drawings for a small residential project.

II. STUDENT PERFORMANCE OBJECTIVES

Upon successful completion of the course, the student will be able to:

1. Demonstrate proper use of drafting equipment.
2. Draft using pencil and pen and ink on paper and vellum.
3. Demonstrate consistent hand lettering using pencil.
4. Distinguish and demonstrate appropriate use of line weight.
5. Use imperial and metric architectural scales.
6. Understand and draw orthographic projections.
7. Identify and draw isometric and oblique views.
8. Draw shade and shadow using 45° light projection.
9. Identify and describe components of residential wood frame construction.
10. Use OBC span tables to size beams and joists for wood frame construction.
11. Draw details of wood frame assemblies, given samples.
12. Apply material rendering techniques.
13. Develop model construction techniques using cardboard.
14. Prepare working drawings for a single family residence.

III. TOPICS TO BE COVERED

1. Drafting Equipment Use and Techniques
2. Orthographic / Isometric and Oblique Drawing
3. Shade and Shadows / 45° Light Projection
4. Basic Design and Presentation Drawings / Ink on Vellum
5. Wood Frame Construction
6. Single Family Residential Design
7. Residential Design Drawings / Model Building
8. Working Drawings /Dimensioning and Detailing

IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

1.0 DRAFTING AND DRAFTING EQUIPMENT

Upon successful completion of this unit, the student will be able to:

1.1 Name, use and care for the various drafting instruments.

Drafting equipment kit.
8.5 X 11 White Bond Paper
8.5 X 11 Vellum

1.2 Understand the application of and develop skill in hand lettering.

Architecture
Chapter 5 pp. 122-140

Arch. Graphics
Chapters 1 and 2

1.3 Apply and differentiate line types and weights.

1.4 Utilize architectural scales - metric and imperial.

Manual on Metric Building Drawing Practice
National Research Council of Canada

2.0 ORTHOGRAPHIC PROJECTION AND ISOMETRIC AND AXONOMETRIC DRAWINGS

2.1 Understand and draw orthographic projections of objects.

2.2 Construct an isometric view of an object given plan and elevation views.

2.3 Construct a plan oblique (axonometric) view of an object given plan and elevation views.

Architectural Graphics
Chapter 3 pp. 24-26
pp. 53-57

Drafting Equipment Kit
8.5 X 11 Bond Paper
11 X 17 Vellum

3.0 SHADE AND SHADOW USING 45° (CONVENTIONAL) LIGHT DIRECTION

3.1 Define the conventional light source and its application.

3.2 Construct shadows for plan and elevations views of objects given light direction.

3.3 Understand the use of shade and shadow as a design consideration and presentation tool.

Architectural Graphics
Chapter 4 pp. 120 -129

Drafting Equipment Kit
8.5 X 11 Bond Paper
11 X 17 Vellum

4.0 BASIC DESIGN AND PRESENTATION DRAWINGS - INK ON VELLUM

5.0 Wood Frame Construction

5.1 Identify and name the components of a platform framing system.

5.2 Design and detail a stair to conform the Ontario Building Code.

5.3 Use that OBC to determine the size and spacing of beams and joists.

5.4 Draft wood frame detail assemblies given a sketch.

Architecture
Chapter 7 pp. 179-194
pp. 199-201

Drafting Equipment Kit
8.5 X 11 Bond Paper
11 X 17 Vellum

6.0 RESIDENTIAL DESIGN

6.1 Discuss the issues for planning a house in Canada.

6.2 Design a small house plan and elevations given a site and a set of parameters.

Architecture
Chapter 2
Chapter 3
Chapter 4 pp. 93-104

Ontario Building Code
Part 9 Sections 9.5 and 9.23

7.0 RESIDENTIAL DESIGN DRAWINGS AND MODEL BUILDING

7.1 Prepare a set of design drawings, including site and floor plans, section, elevations and axonometric.

7.2 Construct a cardboard scale massing model of a residential building.

7.3 Give an oral presentation and explanation of a design project.

Architecture
Chapter 15

Architectural Graphics
Chapter 3
Chapter 4
Chapter 5
Chapter 7

Drafting Equipment Kit
Tracing Paper
24 X 36 Vellum

7.4 Prepare a partial set of working drawings for a residential wood frame building.	Architecture Chapter 6 Chapter 7 pp. 179-212 Chapter 8 Chapter 9 Drafting Equipment Kit Tracing Paper 24 X 36 Vellum Ontario Building Code Part 9 and Appendices

V. METHOD OF EVALUATION

Students will be assigned a final grade based on successful completion of tests, assignments, projects and attendance, weighted as follows:

Major Assignment		
	Design Phase	15%
	Working Drawings	15%
	Model	10%
Drafting Assignments		30%
Other Tests and Assignments		20%
Attendance		10%
TOTAL		100%

Late assignments will be penalized 10% for each day late. Attendance and punctuality will be considered in the student assessment.

A final letter grade will be assigned as follows:

A+	90-100%
A	80-89%
B	70-79%
C	55-69%
R	Repeat

VI. REQUIRED STUDENT RESOURCES

Architecture: Design Engineering Drawing
Latest Edition
William P. Spence
Glencoe

Architectural Graphics
Second Edition
Francis Ching
Van Nostrand Reinhold

Manual on Metric Building Drawing Practice
National Research Council of Canada

Architectural Drafting Equipment Kit

In addition to those materials provided in the kit, the student will be expected to supply various other media and materials necessary to complete the assignments and projects.

VII. ADDITIONAL RESOURCES AND MATERIALS

There are available in the library a number of texts and periodicals on design, drafting and construction.

VIII. SPECIAL NOTES

1. Students with special needs are encouraged to discuss required accommodations in confidence with the instructor.

2. The instructor reserves the right to modify the course and course outline as deemed necessary to meet the needs of the students.