SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title	BUILDING SCIENCE V
Code No.:	PHY 300-4
Program:	ARCHITECTURAL TECHNOLOGY
Semester:	FIVE
Date:	JUNE, 1984
Author:	MEL URSELL

New: Revision

APPROVED: £iL.z£i^adJ^^^

Chairperson ^ Date

BUILDIMG SCIENCE V — Course Name
PHY 300-4 — Course Number

PHILQSQPHY/GOALS:

To understand the principles of air conditioning.

To identify the design requirements for ventilation systems.

To understand layout procedures for ventilation systems,

METHOD OF ASSESSMENT:

SEE ATTACHED SHEET.

TEXTBOOK(S):

Mechanical & Electrical Equipment for Buildings
by McGuinness & Associates

REFERENCE TEXTS:

Residential System Oesign Manual

Load Calculation Manual (Manual J)

Metric Practice Guide

Residential Heat Pump Applications Manual

Trane Air Conditioning Manual

Mechanical & Electrical Systems for Construction
by Riley & Shuttleworth

ASHRAE Handbook

METHOD OF ASSESSMENT:

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 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 permitted to class and ultimately his failure to receive an acceptable grade in the course.

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	38	Principles of Air Conditioning - refrigeration terminology - basic refrigeration principles - factors required for a conditioned space - psychrometry - refrigerated cooling for houses - determining the cooling load - cooling system design - types of systems - heat pump selection - component design
2	26	Ventilation Systems - terminology - basic ventilation requirements for different spaces - determining air volume requirements " types of air pressures in ducts - pressure measurements - resistance and pressure drop - aspiration resistance - total effective length - turbulance - direct design and layout - fan types - fan sizing and selection - air exchange theory - types of air exchangers