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SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: HEAVY CONSTRUCTION

Code No.: ARC 232-4

Program: CIVIL CONSTRUCTION

Semester: IV

Date: JANUARY, 1989

Author: S. IENCO

New: _____ Revision: ____X____

APPROVED: _____ _____
Chairperson Date

CALENDAR DESCRIPTION

HEAVY CONSTRUCTION	ARC 232-4
COURSE NAME	COURSE NUMBER

PHILOSOPHY/GOALS:

To further the student's understanding of the wide variety of techniques that go to form a heavy construction project.

METHOD OF ASSESSMENT:

Assignments	40%
Mid Term Examination	25%
Final Examination	35%
	100%

A+	90 - 100
A	80 - 89
B	70 - 79
C	55 - 69
R	Repeat
X	A temporary grade, limited to situations with extenuating circumstances, giving a student additional time to complete the requirements of the course.

1. Minimum acceptable grade is 55%

2. Each assignment will carry equal weight

3. If at the end of the semester your overall average of the combined assignments and tests is below 55%, then it will be up to the instructor whether you receive an "R" grade or a rewrite. The criteria employed for arriving at that decision is class attendance, class participation and overall grade.

4. If a rewrite is granted it will cover the entire semester course work and the maximum obtainable grade on the rewrite is a "C".

TEXTBOOK(S):

Construction Methods and Management,
Nunally

HEAVY CONSTRUCTION

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
1	18	**Cement & Concrete Technology Review** - physical properties of cement and concrete - concrete mix design (laboratory) - principles of quality concrete - cold and hot-weather concreting - concrete finishing - reinforced concrete - concrete construction practices - testing of laboratory cylinders - testing of laboratory beams - reinforcing pull out test
2	18	**Formwork** - properties of concrete in the plastic state - properties of formwork material - formwork hardware and fasteners - analysis of formwork - slab form design - wall and column form design - causes of formwork failures and necessary precautions - shoring and scaffolding
3	18	**Introduction to Reinforced Concrete Design** - working stress design - modular ratio and transformed steel area - analysis and design of beams - maximum reinforcement ratio - minimum reinforcement - shear reinforcement - bond and development length

HEAVY CONSTRUCTION

TOPIC NO.	PERIODS	TOPIC DESCRIPTION
4	6	**Construction Safety** - personal protective clothing - storage of materials - excavations - guardrails - scaffold and working platforms - trenching support systems