

Research Project

CIV320

COURSE NAME

CODE NO.

Total Credit Hours 64

Prerequisite (s) ENG210 & ENG315

I. PHILOSOPHY/GOALS:

This course provides the student with the opportunity to develop initiative and self-reliance while working on an civil engineering related project that he/she has personally chosen. The project may be selected from a wide field which could cover one or more of the following areas:

- a. Analysis of existing technological problems.
- b. Creative Design.
- c. Experimental investigations/technical literacy investigations.
- d. Real-life problems suggested by industry, community at large, and/or innovative ideas of the student, the faculty or other.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

1. Identify as appropriate, a research problem suitable for a technological report.
2. Research the problem and collect and organize data using primary and secondary sources of information.
3. Recognize the difference and select the appropriate format for: (a) theoretical report, (b) practical research report and (c) comprehensive literature review.
4. Write the introduction, discussion, conclusions, recommendations, and an effective summary in the appropriate format.
5. Revise and edit drafts so that the style is clear, concise and correct.
6. Gain practical experience and technical knowledge in a technological and/or scientific field.

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III. GENERAL REQUIREMENTS

The student will be required to carry out any necessary field investigations, data collection, bench scale model construction, experiments, laboratory testing and literature review. In addition a high degree of self-motivation, organization, technical ability and communication skills will be expected.

During the course of the project, typed submissions of the following will be required:

TOPIC
OBJECTIVES & PROPOSAL
DRAFT REPORT
FINAL REPORT

Each student will be expected to prepare a schedule for the project in conjunction with the proposal, and to maintain an up-to-date diary of project activities. The final report is to be bound and submitted in duplicate.

The successful completion of the course includes seminar presentations of the proposal and the project by the student. The proposal presentation is to include a typed submission of the title page, the objectives and a summary page of the project proposal for distribution prior to presentation. The time intervals for the project presentations will be 15-20 minutes followed by questions and discussions.

IV. TIMETABLES

The project should be carried out in accordance with the following timetable:

TIMEFRAME FOR RESEARCH REPORT COMPLETION

Stage 1: Written submission of selected topic SEPTEMBER 1998

A brief one page outline of the topic that you have selected, why the topic interests you, and what your Research Report will attempt to illustrate.

Stage 2: Oral presentation of selected topic SEPTEMBER 1998

A brief (maximum 10 minute) oral presentation dealing with outlining the topic that you have selected. The presentation will be made to both faculty and peers. You are encouraged to include visual aids as part of your presentation.

Stage 3: Submission of Objectives & Proposal OCTOBER 1998

Using the evaluation form as a guide, you are responsible to submit a "framework" or skeletal outline (point form is acceptable) of the various sections of your proposed Research Report. You are also required to submit a *standardised graphic board* of your Research Report. Detailed requirements will be provided to you later.

Stage 4: Oral presentation of Stage 3 NOVEMBER 1998

A 10 minute presentation of your Research Report development to date.

Stage 5: Submission of Draft Report JANUARY 1999

Refer to course outline for requirements.

Stage 6: Preliminary Oral Presentation FEBRUARY 1999

A 10 minute presentation outlining your intentions for the Final Presentation. It is recommended that you should have most of your visual aids in place at this time.

Stage 7: Submission of Final Report MARCH 1999

Refer to course outline for requirements.

Stage 8: Final Oral Presentation APRIL 1999

Refer to course outline for requirements.

NOTE:

All written submissions will only be accepted if they are typed, bound, and submitted on or before the stipulated due date.

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V. REPORT FORMAT

In general, the co-operative format for writing a formal report will be followed. The report should be organized into five (5) sections:

- a) The Preliminaries
- b) Summary
- c) Main Body
- d) Conclusions and Recommendations
- e) Reference Material

5.1 The Preliminaries

As the first part of the report, the Preliminaries have a significant impact. It is important to capture the reader's attention in this section. The Preliminaries should consist of the following:

- a) Title Page
- b) Letter of Transmittal
- c) Table of Contents
- d) List of Tables and Figures

5.1.1 The Title Page

Presents the following information in order:

- a) Sault College of Applied Arts and Technology
- b) The Student's Program
- c) Title of the Report

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- d) The Student's Name and Academic Term
- e) Completion Date of the Report

The Title Page is not numbered.

5.1.2 Letter of Transmittal

The Letter of Transmittal, in the format of a standard business letter, must contain the following information:

- a) Report title
- b) Course number
- c) Academic Term completed
- d) Purpose of report
- e) Acknowledgment of assistance
- f) Student's name and signature

5.1.3 Table of Contents

The Table of Contents lists all main sections of the report and subsections which have headings. Use the same numbering system in the Table of Contents that is used in the main section of the report.

5.1.4 Lists of Tables and Figures

These two lists are part of the Table of Contents, but are listed on separate pages following the Table. Each list identifies its components by number, title and page number. Do not list any Tables or Figures that are to be found in the Appendix.

5.2 Summary

The Summary of a report is often the only part read by management. Therefore, the summary must be able to stand alone and be understood by a knowledgeable reader.

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The Summary should be written only after the report is complete. It should be restricted to one page of about four paragraphs presenting the following information:

- a) Purpose and scope of the report
- b) Major points contained in the body of the report
- c) Highlights of the conclusions
- d) Highlights of the recommendations

5.3 Main Body of the Report

5.3.1 Introduction

The first section in the body of the report is the Introduction, and should not be confused with the Summary. The Introduction should outline the background for the study, provide a clear statement of the objectives, and briefly outline the methods used. The Introduction may also outline the scope and limitations of the study.

The background should contain any pertinent information leading up to the study. The reader should be able to anticipate the objectives of the study from the second part of the background. The objectives should be clearly and concisely stated and be distinct from the background and description of the methods. The outline of the methods used must be brief since the details will be provided in later sections.

5.3.2 The Main Section

Having stated the problem or project in the Introduction, the Main Section should explain how the student studied this problem, what their findings were, and what these findings mean.

The main body must be divided into sections and, where necessary, sub-sections. Each section must have a heading. Headings are useful references that guide the reader through the report, including a description of the methods used to acquire data, a summary of the data obtained, and finally, a discussion of the interpretation of the data.

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5.3.3 Tables and Figures

Tables and Figures should be provided where appropriate, in order to clarify explanations. Tables with large numbers of entries, or diagrams which cannot be located conveniently in the text, should be placed in the Appendix. A summary table located in the body will provide a useful quick reference to the reader.

Each table should be typed on a separate page with the table number and title above. Tables should be neatly presented with consistent row and column labels and all units identified.

Each Figure should be typed on a separate page with the figure number and title below. If the Figure is a graph, the axes must be labelled properly and with consistent units.

5.4 Conclusions and Recommendations

Conclusions are statements derived from the research and investigations described in the body of the report. Recommendations are comments which are designed to assist in future study of the topic.

The Conclusions and Recommendations should be written as a sequence of brief paragraphs. These one or two sentence paragraphs should deal with only one aspect of the study. Each item discussed must be fully supported and follow logically from the description in the main body of the report.

The Conclusions and Recommendations have distinct purposes. Thus, they should appear on separate pages of the report.

5.5. Reference Material

The Reference Material consists of three components which are presented in the following order at the end of the report.

- a) The References
- b) The Bibliography
- c) The Appendices

5.5.1 The References/Endnotes

Materials from authors or resource persons that have been cited directly and diagrams that have not been drawn should be acknowledged explicitly when they are first used in the report.

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5.5.2 The Bibliography

The Bibliography should list all books and reports that have provided general reference material. List only the publications actually used. Items in the Bibliography should be listed in alphabetical order, by author. A Bibliography may not be required, in addition to the References, and may be omitted with the approval of the student's faculty advisor. The student should refer to "Publication Manual of The American Psychological Association" available in the reference section of the library.

5.6 Glossary and Nomenclature

It may be necessary to include both a Glossary and Nomenclature in the report. These should follow the References and Bibliography and precede the Appendices.

5.6.1 Nomenclature

A Nomenclature may be required if a large number of symbols are used repetitively throughout the report. List the Nomenclature in alphabetical order. Use standard symbols and abbreviations in both the Nomenclature and Main Body of the report. SI units must be used, unless the student technical studies were conducted in other units.

VI. PRESENTATION

A neat, well organized and accurate report will receive a sympathetic response from the reader. The report should be typed or produced on a word processor on white bond paper (8 1/2" x 11"). Be sure the report looks professional.

The following report layout requirements are recommended:

6.1 Covers

Reports should be bound in transparent covers. Avoid stapling the report.

6.2 Margins

Left Margin	4 cm (1 1/2 inches)
Right Margin	2.5 cm (1 inch)
Bottom Margin	4 cm (9 typewriter spaces)
Top Margin	5 cm from the top of the page

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6.3 Spacing

Double space the body of the paper, but single space footnotes or long quotations. All paragraphs should be separated by a clear visual space provided by an extra carriage return.

6.4 Page Numbering

Assign a number to each page of the paper, except the cover or blank pages. Number the preliminary pages with small Roman numerals are centred at the bottom of each page.

Number the pages of the text consecutively, including the Appendix. Place the Arabic numeral in the top right corner of the page, seven spaces below the top of the page and in line with the right margin.

6.5 Sections

Begin each main section listed in the Table of Contents on a separate page. Be consistent in the style of headings or sub-headings.

VII. METHOD OF EVALUATION

A final grade will be derived on the following aspects weighed as follows:

Project organization and level of effort	10%
Seminar presentation and attendance	25%
Report - Graphics	65%
Structure	
Literary Quality	
Technical Quality	

TOTAL	100%

The grading system used will be as follows:

A+	90% - 100%
A	80% - 89%
B	70% - 79%
C	60% - 69%
R	Repeat

A minimum grade of 60% will be required for the successful completion of the course.

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VIII. SPECIAL NOTES

Students with special needs (eg. physical limitations, visual impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of the students.

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
RESEARCH PROJECT EVALUATION**

EVALUATION	Report	Oral Presentation	Project Organization	Level of Effort	Total Grade/Ltr Grade
	/60	/20	/10	/10	/100

STUDENT NAME: _____
STUDENT NUMBER: _____
PROGRAM: _____

Evaluated by: _____ Date: _____

GRAPHICS OF REPORT	E	G	F	U	NE
Front Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Title Page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Letter of Transmittal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Table of Contents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List of Tables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List of Illustrations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STRUCTURE	E	G	F	U	NE
Summary (should contain)					
a) Purpose and scope of Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Major points of body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Highlights of conclusions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Highlights of recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main Body (should contain)					
a) Introduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Main Section	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Tables and Figures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conclusions and Recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reference Material (should contain)					
a) Reference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Bibliography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Appendices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glossary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nomenclature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LITERARY QUALITY	E	G	F	U	NE
Grammar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spelling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TECHNICAL QUALITY	E	G	F	U	NE
Suitability of Topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Authority & Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytic Content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thoroughness of Treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RESUBMIT _____ **DUE** _____

EVALUATOR'S COMMENTS

