

**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE MARIE, ON**



**COURSE OUTLINE**

**Course Title: Research Report**

**Code No.: ELN-319      Semester: SIX**

**Program: ELECTRONIC ENGINEERING TECHNOLOGY**

**Author: Peter Szilagyi**

**Date: January 6, 1999      Previous Outline Date: Jan. 1997**

**Approved:**

*K. DeRosario*

**Dean**

*Dec 22/98*

**Date**

**Total Credits: 3**

**Prerequisite(s): ELN-300**

**Length of Course: 16 weeks**

**Total Credit Hours: 16 hours**

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& Technology, (705) 759-2554, Ext. 642.

JAN 17 1999

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**I. COURSE DESCRIPTION:**

The Research Report is intended to demonstrate, that the student can function at the Engineering Technology level. The research activity may be a hardware or software development, done within any of the Engineering Technology laboratories, or the analysis of an industrial/technical problem, provided a local industrial sponsor can be found.

**OUTLINE OF REQUIREMENTS**

Each student will be required to submit a Technical Report on a subject related to his/her program area. The Report must demonstrate a thorough understanding of the subject addressed and be written at a level appropriate for a Technologist. Technology level mathematics should be used wherever needed to improve the substance and clarity of the report. There should be no spelling mistakes, grammar and syntax should be good, and expressions should be clear and logical.

The Report should

1. have a title page.
2. have a table of contents.
3. include a declaration of authorship and purpose.
4. include a summary of about one page (abstract).
5. be typed, one side only, 1½ line or double spaced.
6. be no longer than 20 pages, schematic diagrams excepted.
7. conclude with a summary
8. include appendices as appropriate.

- Before any work is done on a project, the research student must prepare a one-page summary (typed) of his/hers proposed project and that summary must be approved by the faculty adviser.

- The deadline for the completion of the project is Friday, April 16 On that date, or before, both the report and the working prototype are to be handed in. Late reports and projects, regardless of their complexity, functionality or other qualities, will be graded "C" (pass) or "R" (fail). There will be no compromise on the deadline, as the faculty advisor needs one week, to properly evaluate and mark each student. Also, in the real life, a late project attracts severe penalties.

- All students are urged, to not engage themselves into complex, complicated and overly ambitious projects, as such is not the scope of this course. Meeting deadlines and initial specifications, then finishing the project and the report on time, are the most important requirements.

## II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course the student will demonstrate the ability to:

- 1) Research and prepare a detailed technical report.

Potential Elements of the Performance:

- Do a library search, relevant to the selected research topic.
- Search for technical information over the Internet, download and save application notes, component data specifications, and schematic diagrams.
- Use the advanced features of a word processor, such as the formula editor, formula numbering, math symbols, graphics import, frames and tables.

- 2) Demonstrate good project management skills.

Potential Elements of the Performance:

- Keep a daily log book, meet deadlines, order necessary components in time.

- 3) Design, build and demonstrate a working technical project.

Potential Elements of the Performance:

- Take an idea all the way, through the different phases of research, design, prototype building, tune-up, packaging, and performance testing.

## III. TOPICS:

- 1) There will be no formal lecturing on particular topics. The faculty advisor is available as a resource person, project manager, quality control, and customer for the end product.
- 2) The topic of each student's research is different, and reflects individual goals and interests in furthering ones proficiency in a particular field of engineering technology. Topics related to the broad field of Electrical, Electronic, Instrumentation and Computer Engineering technology are all acceptable.

**TIME TABLE OF ACTIVITIES:**

WEEK	ACTIVITY	DATE
1	Suggested projects and procedures explained.	January 8 1999
2	Students hand in a written proposal, including the system block diagram, requirement specifications and list of components to be ordered.	January 15 1999
3,9	10 minute presentations of each individual project, followed by discussions.	As scheduled by faculty advisor.
4	Detailed block diagrams and schematic diagrams are produced and presented to the faculty advisor.	January 29 1999
5, 6, 7	Experimentation, measurements and tests are well under way. Schematic diagrams are finalized.	February 5 to February 19
8, 9	Printed circuit board is designed and etched. All mechanical work on chassis, racks and enclosures is finished.	February 26 to March 5
10,11	PCB is populated with parts and is tested. System is tuned to specifications.	March 12 to March 19
12,13	All tests and measurements are finished, all data collected, documentation is partially edited.	March 26 to April 2
14,15	Prototype is working, according to the specifications. Drawings are plotted, technical report is edited in its final form. Project is finished, working prototype and technical report are presented to the faculty advisor for evaluation and marking.	April 9 to April 16
16	Reserved for marking. X grades are assigned, in extenuating circumstances (provided doctor's certificate).	April 20 to April 29

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Required resources vary on an individual basis. The College library, Data Books available in the Department, and any textbook used from first year to third year are all available resources. Computer software available in the Department, and Internet searches should also be used.

**V. EVALUATION PROCESS/GRADING SYSTEM**

The grading weight will be:

Final Report:	35%
Hardware:	35%
Daily Log Book:	10%
Management skills, deadlines:	20%

The grading system will be as follows:

A+	90% - 100%	Outstanding Achievement
A	80% - 89%	Above Average Achievement
B	70% - 79%	Average Achievement
C	60% - 69%	Satisfactory Achievement
R	below 60%	Repeat

## **VI. SPECIAL NOTES:**

### **- Special Needs**

If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 so that support services can be arranged for you.

### **- Retention of Course Outlines**

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.

## **VII. PRIOR LEARNING ASSESSMENT**

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following: