

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: D.C. CIRCUITS & MACHINES
Code No.: ELR 110
Program: MECHANICAL
Semester: 2
Date: FEBRUARY 28, 1989
Author: J. HAMILTON

New: X Revision: _____

APPROVED: *J. Hamilton*
Chairperson

Date 89/03/30

D.C. CIRCUITS & MACHINES

ELR 110

Course Name

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PHILOSOPHY/GOALS:

When the student has completed this course he will have a good understanding of the basic fundamentals of DC generator motors and control equipment.

METHOD OF ASSESSMENT (GRADING METHOD).

TEXTBOOK(S):

Fundamentals of Electric Circuits - David A. Bell

Electrical Machines DC and AC - Siskind

REFERENCE TEXTS:

Industrial Electricity - W. H. Timble

Direct and Alternating Current Machinery - Rosenblatt & Friedman

Maintenance Hints - Westinghouse Corporation

GRADING POLICY - SEPTEMBER 1989

Semester-End Reporting:

- A+ (Numerical Equivalent 4.0) - Consistently Outstanding 90 - 100
- A (Numerical Equivalent 3.75) - Outstanding Achievement 80 - 89
- B (Numerical Equivalent 3.0)- Consistently Above Average Achievement 65-79
- C (Numerical Equivalent 2.0)- Satisfactory or Acceptable Achievement 55-64
- R (Numerical Equivalent 0.0)- Repeat - Objectives of course not achieved and course must be repeated.

The following grades are also approved end-of-term grades but are not assigned numerical equivalence for computing the grade point average.

- S - Satisfactory (assigned to non-graded courses or field placements).
- U - Unsatisfactory (assigned to non-graded courses or field placements when course objectives not achieved).
- X - Temporary grade assigned to student for additional time to complete course requirements used ONLY because of extenuating circumstances. "X" grade contract form must be completed and submitted for each X grade assigned.

Mid-Term Reporting:

Student progress will be reported as follows for mid-term reports:

- S - Satisfactory Progress
- U - Unsatisfactory Progress
- R - Repeat (objectives have not been met)
- NR - Grade not reported to Registrar's Office. This grade is used to facilitate transcript production when faculty, because of extenuating circumstances, find it impossible to report grades by due dates.

D.C. CIRCUITS & MACHINES

TOPIC	PERIODS		TOPIC DESCRIPTION
	THEORY	LABS	
1	6	6	<p style="text-align: center;"><u>DYNAMOS</u></p> <p>Principle of Generator Action, Faradays Law Commutation, Principle of Motor Action, Solutions of problems; using generator voltage equation, torque and force equations.</p>
2	2	-	<p style="text-align: center;"><u>ARMATURE WINDING</u></p> <p>Coil Pitch, types of windings, commutator pitch. Winding calculations</p>
3	9	6	<p style="text-align: center;"><u>TYPES OF D.C. GENERATORS</u></p> <p>Magnetization curve, output voltage build up characteristics of shunt, series and compound generators. Armature reaction. Solutions of problems pertaining to D. C. generators</p>
4	10	6	<p style="text-align: center;"><u>D.C. MOTORS</u></p> <p>Classification of D. C. motors counter EMF speed regulation control of D. C. motors. Armature reaction torque characteristics</p>
5	9	6	<p style="text-align: center;"><u>EFFICIENCY, RATING & APPLICATIONS OF DYNAMOS</u></p> <p>Power losses in a dynamo. Efficiency of D. C. dynamos and motors. Electrical braking of D. C. motors.</p>