

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

COURSE OUTLINE

Course Title: ELECTRICAL SYSTEMS
Code No.: ELR 108-3
Program: AVIATION TECHNOLOGY (FLIGHT)
Semester: II
Date: OCTOBER 25, 1983
Author: D. PEARMAN

New: _____ Revision: X

APPROVED:

D.P. Crozetto
Chairperson

Date _____

NUMBER	PERIODS	TOPIC DESCRIPTION	REFERENCE
		<u>Theory Lab</u>	
1	3	<u>Introduction to Electricity</u> a) Matter and Structure b) Current, resistance, potential difference c) Units d) Ohm's Law, Power and Efficiency	
2	6	<u>DC Circuits</u> a) Series circuits b) Parallel circuits c) Series-parallel circuits	
3	9	<u>Magnetism, Inductance and Capacitance</u> a) Magnetic fields b) Electromagnets c) Induced voltage d) Inductors, inductance, R.L. Circuit e) Self and Mutual Inductance f) Inductors in series and parallel g) Capacitors, capacitance and R.C. Circuit h) Capacitors in series and parallel	
4	6	<u>Introduction to Alternating Current</u> a) Production of a sine wave voltage b) Cycle, maximum, instantaneous, average and rms values c) Phasors d) Effects of ac with R, L and C e) Power, Phase angle, power factor f) Transformers and auto transformers	
5	6	<u>Generators and Motors</u> a) Induced voltages b) Construction of ac and dc generators c) Voltage and frequency control d) Paralleling requirements e) Characteristics and operation of dc motors and generators f) Polyphase induction motors g) Automatic voltage regulators h) Three-phase systems	

NUMBER PERIODS / TOPIC DESCRIPTION REFERENCE

Theory Lab

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|---|-----|---|--|
| 6 | 6 | <u>Solid State Electronics</u>
a) Basic semiconductor theory
b) Function diodes
c) Transistors
d) Silicon controlled rectifiers
e) Inverters and cycloconverters | |
| 7 | 6 6 | <u>Aircraft Electrical Systems</u>
a) Cessna 152 and 172
b) Twin Otter
c) Challenger
d) Gulfstream II
e) Gates Lear jet | |