

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

COURSE OUTLINE

Course Title: ELECTRONIC CIRCUITS
Code No.: ELN109-5
Program: ELECTRICAL/ELECTRONIC/COMPUTER TECHNOLOGY
Semester: II
Date: JUNE, 1984
Author: W. FILIPOWICH

New: X Revision: _____

APPROVED:

J.P. Crozetta
Chairperson Date

ELECTRONIC CIRCUITS

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PHILOSOPHY/GOALS:

This course is intended to provide a solid background in fundamentals that is necessary for the study of more specialized aspects of electronics. The student will expand his knowledge gained in Electronic Fundamentals 1 (ELN 100) with the continuation of amplifier analysis. Theoretical and practical analysis of voltage and power amplifiers, including equivalent circuits, coupling methods, classes of operation, will be covered as well as BJT, JFET, MOSFET and OPAMP devices. An introduction into feedback and audio oscillators will also be covered and also related lab work with emphasis on testing, troubleshooting and technical report writing.

METHOD OF ASSESSMENT (GRADING METHOD):

1. Testing in relation to the theory objectives will make up approximately 60% of the final mark and will consist of at least two major tests plus short quizzes.
2. Testing in relation to the practical (lab) objectives will make up approximately 40% of the final mark and will consist of a technical report, lab logbook reports and practical assessments, which will include lab attendance, participation, performance, attitude, etc.

TEXTBOOK(S):

Electronic Principles - 3rd Ed. - Malvino (McGraw-Hill)

REFERENCE:

Transistor Circuit Approximations - 3rd Ed. - Malvino (McGraw-Hill)

Fundamentals of Electronics - 3rd Ed. - Luych

General Electronic Circuits - 2nd Ed. - DeFrance (Holt-Rinehart)

Electronic Devices and Circuits - 3rd Ed. - Boylestad, Nashelsky
(Prentice-Hall)

Electronics Devices and Circuits - 2nd Ed. - Bell (Reston)

BLOCK PERIODS	PERIODS Theory-Lab	TOPIC DESCRIPTION	REFERENCE
I		<u>Small-signal Transistor Amplifiers</u>	Text - <u>Electronic Principles</u> , 3rd Ed., Malvino
II		<u>Cascaded and Power Amplifiers</u> 1. Amplifier Coupling Methods 2. Analysis of Direct Coupled Amplifiers 3. Classes of Operation 4. Power and Efficiency Calculations 5. AC Analysis of Class A and Class B Power Amplifiers 6. h Parameters 7. Decibels and Power Gain 8. Frequency Effects	Chapters 8, 9, 14
III		<u>Field Effect Transistors</u> 1. Principles of Operation of JFET and MOSFET 2. Characteristic curves and parameters 3. Biasing Techniques 4. Common-Source and Common-Drain Circuit Analysis 5. FET applications	Chapters 12, 13
IV		<u>Operational Amplifiers</u> 1. Differential Amplifier - Operation and Analysis 2. Operational Amplifier - operation - characteristics - parameters - linear inverting and non-inverting amplifiers - band width 3. Feedback 4. Filter Networks	Chapters 15, 16, 17