

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: EET 1037

COURSE TITLE: DC/AC Network Analysis

PREREQUISITE(S): EET 1035 or EET 1084 and MAC 1105

COREQUISITE(S): MAC 1114

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 4

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:	3
Laboratory:	1
Other _____:	

FACULTY WORKLOAD POINTS: 3.67

STANDARDIZED CLASS SIZE ALLOCATION: 20

CATALOG COURSE DESCRIPTION:

This course covers the network analysis techniques used in DC and AC circuits. The course is quantitative in nature and makes liberal use of basic math and algebra. It is assumed that students enrolling in this course have an understanding of the fundamentals of DC and AC electricity. The course includes instruction in BASIC and incorporates computer analysis techniques.

SUGGESTED TEXT(S): Basic Circuit Analysis, 2nd ed., John O'Malley, Shcaums Outline Series, McGraw-Hill, 1992

IMPLEMENTATION DATE: Fall Term, 1989 (901)

REVIEW OR MODIFICATION DATE: Fall Term, 1994 (951)
Fall Term, 2002 (20031)
Fall Term, 2006 (20071)

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Introduction	1
II. Network Analysis in DC Circuits	9
A. Review of Basic Circuit Laws	
B. Equations from Kirchhoff's Laws	
C. Mesh Analysis	
D. Nodal Analysis	
E. Superposition Theorem	
F. Multisource Networks	
G. Thevenin's Theorem	
H. Norton's Theorem	
I. Millman's Theorem	
III. Network Analysis with Computer Programs	6
IV. Ideal Source Conversions	3
V. Magnetic Circuits	3
VI. Transient Analysis in RC and RL Circuits	3
VII. Network Analysis in AC Circuits	9
A. Phasors and Complex Numbers	
B. Power Factor Analysis and Correction	
C. Maximum Power Transfer	
D. Analysis with Kirchhoff's Laws	
E. Loop Analysis	
F. Mesh Analysis	
G. Superposition Theorem	
H. Thevenin's Theorem	
I. Norton's Theorem	
J. Nodal Analysis	
K. Delta-Wye Transformation	
L. Resonant Filter Networks	
M. Transformer Analysis	
N. Coupled Circuits	
O. Three Phase Systems	

COURSE TOPICS (CONTINUED)

CONTACT HOURS
PER TOPIC

VIII. Computer Analysis Project	6
IX. Resonance	5
A. Series Resonance	
B. Quality Factor	
C. Selectivity	
D. Parallel Resonance	
E. Conversions Between Practical and Ideal Circuits	
X. Examinations and Reviews	5

LABORATORY EXERCISES

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Power in DC Circuits	2
II. Phasors and Impedance	2
III. Parallel AC Circuits	2
IV. Power in AC Circuits	2
V. Resonance	2

PROGRAM TITLE: Industrial Management Technology

COURSE TITLE: DC/AC Network Analysis

CIP NUMBER: 0606.200101

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

11.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE--The student will be able to:

11.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.

11.02 Draw conclusions or make inferences from data.

11.03 Identify health related problems which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.

11.04 Understand pressure measurement in terms of P.S.I., inches of mercury, and K.P.A.

18.0 DEMONSTRATE AN UNDERSTANDING OF TECHNICAL OR INDUSTRIAL COMPETENCIES--The student will be able to:

18.01 Demonstrate an understanding of technical or industrial competencies as specified in the curriculum frameworks of any postsecondary adult or postsecondary vocational program.