

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: EET 1021

COURSE TITLE: AC Electrical Theory and Circuit Analysis

PREREQUISITE(S): EET 1011

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOUR/WEEK: 4

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:	3
Laboratory:	1
Other _____:	

FACULTY WORKLOAD POINTS: 3.67

STANDARDIZED CLASS SIZE ALLOCATION: 24

CATALOG COURSE DESCRIPTION:

This course provides an introduction to AC electrical theory and circuit analysis. Topics include test equipment, Ohms Law, principles of induction, principles of capacitance, and the principles of magnetism/electromagnetism. Basic circuit configurations, RCL circuits, vector analysis, and resonance are analyzed.

SUGGESTED TEXT(S): Foundation of Electronics, latest edition, by Russell L. Meade, Delmar Publishers; ISBN: 0-7668-0427-5

IMPLEMENTATION DATE: Fall Term, 2002 (20031)

REVIEW OR MODIFICATION DATE:

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Review of DC Theory	5
A. Ohms Law	
B. Sources of Voltage	
C. Circuits	
(1) Series	
(2) Parallel	
(3) Combination	
II. Alternating current introduction	5
A. Terminology	
B. Sources of Voltage	
III. AC Circuits	20
A. Resistors	
(1) Definitions, Symbols, & equations	
(2) Measurements	
(3) Effects on AC & DC	
(4) Circuits	
B. Inductors	
(1) Definitions, Symbols, & equation	
(2) Measurements	
(3) Effect on AC & DC	
(4) Inductive Reactance (XL)	
(5) Circuits	
C. Capacitors	
(1) Definitions, Symbols, & equation	
(2) Measurements	
(3) Effects on AC & DC	
(4) Capacitive reactance (XC)	
(5) Circuits	
D. Combination of Resistance & Inductance (RL)	
E. Combination of Resistance & Capacitance (RC)	
F. Combination of Resistance,	
G. Inductance & Capacitance (RLC)	

COURSE TOPICS (continued)	CONTACT HOURS <u>PER TOPIC</u>
IV. AC Power	8
A. Definitions, Symbols & equations B. Watts C. Volts/amps/reactive (VARs) D. Power Factor E. Efficiency F. True Power G. Apparent Power	
V. Magnetism & Electro-magnetism	5
A. Magnets B. Transformers C. Rules for coils D. Definitions, Symbols, & Equations E. Devices	
VI. Test Equipment	5
A. Ammeters B. Voltmeters C. Wattmeters D. VAR Meters E. Multi-meters F. Ohmmeters	
VII. Lab Experiments	12
A. Lab Experiments B. Parallel RL Circuits C. Series RC Circuits D. Parallel RC Circuits E. Series RLC Circuits F. Parallel RLC Circuits G. Wattmeters	

PROGRAM TITLE: Computer-Integrated Manufacturing Technology

COURSE TITLE: AC Electrical Theory and Circuit Analysis

CIP NUMBER: 0615.049901

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

02.0 DEMONSTRATE PROFICIENCY IN MANUFACTURING PROCESSES - The student will be able to:

02.03 Understand electrical devices used in production assembly and materials handling

03.0 DEMONSTRATE PROFICIENCY IN OPERATING AND MAINTAINING MANUFACTURING EQUIPMENT FOR AUTOMATED ASSEMBLY - The student will be able to:

03.01 Interpret blueprints, schematics, and technical manuals