

ELEC 67A Course Outline as of Fall 1981**CATALOG INFORMATION**

Dept and Nbr: ELEC 67A Title: COMMUNICATIONS

Full Title: Communications

Last Reviewed: 3/9/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	2.00	6	Lab Scheduled	35.00
		Contact DHR	1.00		Contact DHR	17.50
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:

An introductory course in theory and practice of transmission lines, microwave devices, and microwave circuits. Included is basic use of Smith Chart solutions of transmission line problems. Laboratory work includes the operation of slotted lines, power meters, attenuators, standing wave meters, chart recorders and basic single frequency power and voltage standing wave ratio measurement techniques.

Prerequisites/Corequisites:

ELEC 61, ELEC 61L and ELEC 90B or MATH 27 (formerly MATH 57) or higher with a grade of "C" or better.

Recommended Preparation:**Limits on Enrollment:****Schedule of Classes Information:**

Description: Intro to the concepts of microwave, transmission lines, power measuring devices, velocity modulation, Smith Charts, attenuators, wave guides, instruments (VSWR, slotted lines, frequency meters, slide screw tuners & directional couplers). Scattering parameters, pulsed

power theory & antenna types & arrays. (Grade Only)

Prerequisites/Corequisites: ELEC 61, ELEC 61L and ELEC 90B or MATH 27 (formerly MATH 57) or higher with a grade of "C" or better.

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area			Effective:	Inactive:
CSU GE:	Transfer Area			Effective:	Inactive:
IGETC:	Transfer Area			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2009
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

The student will be able to:

1. analyze microwave systems.
2. measure microwave parameters.
3. identify characteristics and equipment used in microwave circuits.

Topics and Scope:

1. Fundamental of handling microwave frequencies:
 - a. transit times
 - b. Klystrons
 - c. transmission lines
 - d. wave guides
 - e. antennas
2. Theory of equipments utilized:
 - a. VSWR meter
 - b. power meter
 - c. Smith Charts
 - d. frequency meters

Assignment:

Homework and other exercises from text manual.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Lab reports, Quizzes, Exams

Problem solving
15 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances, Performance exams

Skill Demonstrations
15 - 30%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion

Exams
40 - 70%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

MODERN MICROWAVE TECHNOLOGY by Victor Velez.