INSTITUTE OF AERONAUTICAL ENGINEERING

ELECTRONICS AND COMMUNICATIONS ENGINEERING

COURSE DESCRIPTION

Course Title		**ANALOG COMMUNICATIONS LAB**			
Course Code		**A50488**			
Regulation		**R13 – JNTUH**			
Course Structure		Lectures	Tutorials	Practicals	Credits
		-	-	3	2
Course Coordinator		Ms. Saritha, Ms. Sravana, Assistant Professor, ECE			
Team of Instructors		Ms Saritha, Assistant Professor, ECE Ms.Sravana, Assistant Professor, ECE			

I. COURSE OVERVIEW

This course provides practical hands on exposure to communication system building blocks. The objective of this lab is to teach students Amplitude and Frequency modulation. Generation and detection of AM, DSB-SC, SSB and FM signals. Time-division multiplexing systems, Frequency-division multiplexing systems. Sampling theory. Pulse modulation.

II. PREREQUITES

Level	Credits	Periods / Week	Prerequisites
UG	2	3	Signals and Systems

III. MARKS DISTRIBUTION

Sessional Marks	End Semester Exam	Total Marks
Continuous Assessment Tests (Midterm tests): There shall be a continuous evaluation during the semester for 25 marks. Day-to-day work in the laboratory shall be evaluated for 15 marks and internal practical examination conducted by the concerned teacher shall be evaluated for 10 marks.	50	75

IV. EVALUATION SCHEME

S. No.	Component	Duration	Marks
1	Day-to-day Evaluation	-	15
2	Internal Practical Examination	2.5 hours	10
3	End Semester Examination	2.5 hours	20

V. COURSE OBJECTIVES

At the end of the course, the students will be able to:

I. Analyze and specify the fundamental parameters of a communication system.

II. Evaluate the advantages and disadvantages of communications systems, from the point of view analog modulations.

III. To strengthen the ability to identify and apply the suitable modulation techniques for the given real world problem.

IV. To gain knowledge in practical applications of communication systems.

V. To write and execute programs in MATLAB to implement various modulation techniques.

VI. COURSE OUTCOMES

After completing this course the student must demonstrate the knowledge and ability to:

1. Demonstrate understanding of various amplitude modulation and demodulation techniques.
2. Demonstrate understanding of frequency modulation and demodulation technique.
3. Explain the Sampling Theorem.
4. Explain the basic multiplexing techniques: FDM, TDM.
5. Understand and explain the AGC Characteristics.
6. Compare different modulations and to recognize the advantages and disadvantages of them.
7. Write programs using MATLAB.

VII. HOW PROGRAM OUTCOMES ARE ASSESSED

Week	List of Experiments
Week – 1	Op-amp applications as adder,subtrator and comparator Write a verilog program to arithmetic and logical operations
Week – 2	Op-amp applications as integrator and differntiator Write a verilog program to2 to 4 decoder
Week – 3	Active filter application as high pass and low pass filterWrite a verilog program 8 to 3 encoder.
Week – 4	IC741 wave form generators Write a verilog program to8:1mux,1:8demux.
Week – 5	IC555 timer applications. Write a verilog program to 4bit binary to gray code converter
Week – 6	To study the operation Schmitt trigger Write a verilog program to 4bit comparator
Week - 7	IC 565PLL Application. Write a verilog program to full adder
Week – 8	Voltage regulator using IC 723.Write a verilog program for FlipFlops
Week – 9	Write a verilog program for FlipFlops
Week – 10	Write a verilog program for 4bit binary BCD conters
Week – 11	Write a verilog program for finite state machine
Week - 12	**Revision**

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Ms.P.Saritha Asst.Professor, ECE **HOD, ECE**