NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE OUTLINE TEMPLATE			
Course Title	ANALOG INTRGRATED CIRCUITS LABORATORY		
Course Code	ECLR14	**No.of Credits**	2
Department	Electronics and Communication Engg.	**Faculty**	Dr.S.Deivalakshmi/ Ms.M.Gayathri Devi
Pre-requisites Course Code	-		
Course Coordinator(s) (if, applicable)	-		
Other Course Teacher(s)/Tutor(s) E-mail	deiva@nitt.edu	**Telephone No.**	0431-2503321
Course Type	✓Core course	Elective course	

COURSE OVERVIEW

In Analog integrated laboratory students can understand the characteristics of Operational amplifier. The purpose of the course is to design the linear and non linear applications of an opamp. TO compare the working of multi vibrators using special application IC 555 and general purpose opamp.Students can gain knowledge on working principle of data converters and to illustrate the function of application specific ICs such as Voltage regulators, PLL and its application in communication.Students are motivated to do Team project to gain the practical knowledge.

COURSE OBJECTIVES

To measure the frequency response characteristics of opamp.

Analyze and design various applications of opamp

Design and construct waveform generation circuits

Design Analog Circuits using 555 timer

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
1. Understand the basics of Op-Amp and implement the linear applications of 741 IC. Design the first order filters and generate different types of input signals using 741 IC	**PO1, PO2, PO4, PO6, PO10**
2. Design the multivibrator circuits using IC555 and determine the frequency of oscillation.	**PO1, PO2, PO4, PO6, PO10**
3. Able to understand the functionality of PLL, IC565 and determine the lock and capture ranges of PLL.	**PO1, PO2, PO4, PO6, PO10**
4. Able to simulate the circuits using multisim software.	**PO1, PO2, PO4, PO6, PO10**

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
1.	I	Study the characteristics of negative feedback amplifier	Lab
2.	II	Study the characteristics of integrator and differentiator circuit	Lab
3.	III	Measurement of AC,DC Parameters	Lab
4.	IV	Design of PRECISION RECTIFIERS	Lab
5.	V	Design of an instrumentation amplifier	Lab
6.	VI	Study the characteristics of regenerative feedback system-Schmitt trigger	Lab
7.	VII	Design of Astable and monostable multivibrators using IC741	Lab
8.	VIII	Design of Active filters	Lab
9.	IX	Design of Astable and monostable multivibrators using IC555	Lab
10.	X	Design of a Phase Locked Loop(PLL)	Lab

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Record work	To be submitted every next week after completion of experiment		10
2.	Simulation	10 Days before end semester		10
3.	Viva Exam	One week prior to end semester	1 hour	25
4.	Term Project	One week prior to end semester		25
5.	End semester evaluation		90 mins	30

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

1. S.Franco, Design with Operational Amplifiers and Analog Integrated Circuits (3/e) TMH, 2003.
2. Sedra and Smith, Microelectronics Circuits, Oxford Univ. Press, 2004
3. Coughlin, Driscoll, OP-AMPS and Linear Integrated Circuits, Prentice Hall, 2001.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

1. The students through class representative may give their feedback at any time which will be duly addressed.
2. Feedback from the students through MIS and class committee meetings

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

CORRESPONDENCE

1. All the students are advised to come to the class regularly. All the correspondence (schedule of classes/ schedule of assignment/ course material/ any other information regarding this course) will be intimated in the class only.

ATTENDANCE

1. Attendance will be taken by the faculty. 100 % is a mandatory. However, the relaxation upto 20% will be given for leave on medical, and other essential requirements followed in the institute. Every student should maintain minimum 80% physical attendance in these contact hours along with assessment criteria to attend the end semester examination.
2. Any student who fails to maintain 80% and misses any lab experiment needs to appear for the compensation classes with regular evaluation process. Students attendance is compulsory for Viva Exam and end semester.
3. Students not having 80% minimum attendance with compensation at the end of the semester will have to REDO the course.

ASSESSMENT

1.Attending all theassessments are mandatory for every student.
2. Please refer to B.Tech Regulations for the letter grades and corresponding grades.
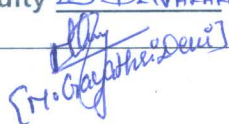
Plagiarism, academic honesty: The students are expected to follow institute rules.

ADDITIONAL COURSE INFORMATION

Queries may also be emailed to the Course faculty directly at deiva@nitt.edu.

FOR SENATE'S CONSIDERATION

Course Faculty _L.S. DEIVALAKSHMI_ CC-Chairperson _____ HOD _____
[M.Gayathri Devi]