Course c	ode	Course Name	L-T-P - Credit		Year of troduction
EC209	9	Analog Electronics	3-1-0-4		2016
Prerequis	sites :Ni	1	I		
Course O	bjective	es			
	• To	familiarize basic electronic elements an	nd their characterist	ics	
	• To	develop understanding about BJT and I	FET circuits		
	• To	understand the concept of power ampli	fier and differential	amplifier	S
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Syllabus		FOUNDIO	CICA	Ĭ.	
		a circuit element-diode clipping circu	1 0	0	•
		oint of a BJT-thermal runaway-h paran			
		: Construction and characteristics of JI			
-	-	sitive feedback-Power Amplifiers- Cla		-	-
	-	lifiers:- The BJT differential pair- I fier- Large and small signal operation-U	U U	<b>U</b>	ration-MOS
umerentia	ai ampin	ner- Large and small signal operation-C	JI- 333 IIIIeI IC,	r LL.	
Expected	outcom				
-		nowledge on electronic elements and the	eir characteristics.		
Text Bool	_				
1. Allen M	Mottershe	ead, <i>Electronic Devices and <mark>C</mark>ircuits:</i> A			of India.
1. Allen M 2. V. Boy	Mottershe lestad ar	nd Nash <mark>e</mark> lsky, <i>Electronic De<mark>vi</mark>ces and C</i>	Circuits, Pearson Ed	ucation	
1. Allen M 2. V. Boy	Mottershe lestad ar		Circuits, Pearson Ed	ucation	
<ol> <li>Allen N</li> <li>V. Boy</li> <li>Ramaka</li> </ol>	Mottersho lestad ar ant A Ga	nd Nash <mark>e</mark> lsky, <i>Electronic De<mark>vi</mark>ces and C</i>	Circuits, Pearson Ed	ucation	
1. Allen M 2. V. Boy 3. Ramaka	Mottersho destad ar ant A Ga	nd Nashelsky, <i>Electronic Devices and C</i> ayakwad, <i>Op- Amps and Linear Integra</i>	<i>Circuits</i> , Pearson Ed ted Circuits, Prenti-	ucation	
<ol> <li>Allen M</li> <li>V. Boy</li> <li>Ramaka</li> </ol> Reference <ol> <li>Schilling</li> </ol>	Mottersho lestad ar ant A Ga es: ng and B	nd Nashelsky, <i>Electronic Devices and C</i> ayakwad, <i>Op- Amps and Linear Integra</i> elove, Electronic Circuits, McGraw Hil	<i>Circuits</i> , Pearson Ed ted Circuits, Prentic	ucation	
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<ol> <li>Allen M</li> <li>V. Boy</li> <li>Ramaka</li> </ol> <b>Reference</b> <ol> <li>Schillir</li> <li>Theodo</li> <li>Coughl</li> </ol>	Mottersho lestad ar ant A Ga es: ng and B ore F. Bo lin and D	nd Nashelsky, <i>Electronic Devices and C</i> ayakwad, <i>Op- Amps and Linear Integra</i> elove, Electronic Circuits, McGraw Hil	<i>Circuits</i> , Pearson Ed ted Circuits, Prenti- 1	ucation ce Hall of	
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FIRST INTERNAL EXAMINATION						
III	<b>FET</b> Construction and characteristics of JFET and MOSFET, biasing a JFET and MOSFET, JFET and MOSFET small signal model - CS and CD amplifiers. feedback: - Concepts – negative and positive feedback feedback -feedback connection types - practical feedback circuits	9	15%			
IV	<b>Power Amplifiers</b> Class A, B, AB, C, D & S power amplifiers - harmonic distortion efficiency -wide band amplifier - broad banding techniques - low frequency and high frequency compensation -cascode amplifier - broad banding using inductive loads - Darlington pairs.	10	15%			
SECOND INTERNAL EXAMINATION						
V	OSCILLATORS & MULTI VIBRATORS Classification of oscillators – Barkhausen criteria- operation and analysis of RC phase shift – Hartely and Colpitts oscillators – Multi vibrators – astable, mono stable and bi stable multi vibrators	9	20%			
VI	UJT-construction -working-UJT oscillator-UPS-brief overview of online UPS &off line UPS-SMPS-operation Timer IC 555: Functional diagram- astable and monostable modes Phase Locked Loops: Principles – building blocks of PLL- VCO-lock and capture ranges - capture process - frequency multiplication using PLL	10	20%			
END SEMESTER EXAM						

## **QUESTION PAPER PATTERN**

Maximum Marks : 100 Exam Duration:3 hours

## PART A: FIVE MARK QUESTIONS

PART A: FIVE MARK QUESTIONS 8 compulsory questions –1 question each from first four modules and 2 questions each from  $(8 \times 5 = 40 \text{ marks})$ last two modules

## PART B: 10 MARK QUESTIONS

5 questions uniformly covering the first four modules. Each question can have maximum of three sub questions, if needed. Student has to answer any 3 questions

(3 x10 = 30 marks)

## PART C: 15 MARK QUESTIONS

4 questions uniformly covering the last two modules. Each question can have maximum of four sub questions, if needed. Student has to answer any two questions

(2 x 15 = 30 marks)