TCET

DEPARTMENT OF INFORMATION TECHNOLOGY (IT)

Credit Based Grading Scheme(Revised - 2012) - University of Mumbai

CBGS-2012(R)

Estd. 2001

TCET/FRM/IP-02/09 | **Semester Plan (Theory)** | **Revision: A**

Semester: III | **Course: IT**

Subject: ITC-305 Principles of Communications | **Class: SE IT -B**

S.No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Analog And Digital Circuits	6 hours	Self Learning/ Revision	**Textbooks:** 1. Robert L. Boylestad, Louis Nashelsky, "Electronic devices and circuit Theory", PHI 2. R. P. Jain, "Modern Digital Electronics", Tata McGraw Hill.

Class Room Teaching

Sr. No.	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date		Resource Book Reference	Remarks
1	---	L1.1	Student Orientation Program -2017 Theory	Power point presentation, Chalk & Board	10/07/2017	10/07/2017		
2	----	L1.2	Student Orientation Program -2017 Theory	Power point presentation, Chalk & Board	11/07/2017	11/07/2017		
3	----	L1.3	Student Orientation Program -2017 -Tutorial	Power point presentation, Chalk & Board	12/07/2017	12/07/2017		
4	----	L1.4	Student Orientation Program -2017-OBE	Power point presentation, Chalk & Board	13/07/2017	13/07/2017		
5	Module 1	L2.1	Basics of analog communication systems (Block diagram), Sources of information, Baseband and bandpass signals,	Power point presentation, Chalk & Board	17/07/2017	17/07/2017	1.7.1 & 1.7.2	
6	Module 1	L2.2	Types of communication channels, Frequency / Spectrum allocations, Need for modulation and demodulation	Power point presentation, Chalk & Board	18/07/2017	18/07/2017	1.7.3 &1.7.4	
7	Module 3	L2.3	Analog Modulation and Demodulation (PART A) Amplitude modulation techniques and its types- DSBFC AM	Power point presentation, Chalk & Board	19/07/2017		3.7.1	

Sr. No.	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date		Resource Book Reference	Remarks
8	Module 3	L3.1	DSBSC-AM, SSB SC AM spectrum, waveforms, bandwidth	Power point presentation, Chalk & Board	25/07/2017		3.7.2 & 3.7.3	
9	Module 3	L3.2	Spectrum, waveforms, bandwidth Power calculations	Chalk & Board	26/07/2017		3.7.2 & 3.7.3	
10	Module 3	L3.3	Block diagram of TRFreceivers and Super heterodyne receiver.	Power point presentation, Chalk & Board	28//072017		3.7.4	
11	Module 3	L3.4	Receiver characteristics -Sensitivity, Selectivity, Fidelity, Image frequency& its rejection and double spotting	Power point presentation, Chalk & Board	29//072017		3.7.5	
12	Module 3	L4.1	Analog Modulation and Demodulation (PART B) FM transmission and reception: Principle of FM	Power point presentation, Chalk & Board	1/8/2017		3.7.6	
13	Module 3	L4.2	Pre- emphasis and de-emphasis in FM, FM noise triangle,	Power point presentation, Chalk & Board	2/8/2017		3.7.7	
14	Module 3	L4.3	Comparison of AM andFM systems, FM generation – Varactor diode modulator,	Power point presentation, Chalk & Board	4/8/2017		3.7.8	
15	Module 3	L4.4	Indirect method (Armstrong method)FM demodulator	Power point presentation, Chalk & Board	5/8/2017		3.7.9	
16	Module 3	L5.1	Foster Seely discriminator, Ratio detector	Power point presentation, Chalk & Board	8/8/2017		3.7.10	
17	Module 2	L5.2	Fourier Transform and Noise Introduction to Fourier Transform, its properties	Power point presentation, Chalk & Board	9/8/2017		2.7.1	
18	Module 2	L5.3	FT of unit step, delta and gate function.	Power point presentation, Chalk & Board	11/8/2017		2.7.2	

Sr. No.	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date		Resource Book Reference	Remarks
19	Module 2	L6.1	Correlated and uncorrelated sources of noise in communication system,	Power point presentation, Chalk & Board	16/8/2017		2.7.3	
20	Module 2	L6.2	Signal to noise ratio, Noise factor, Noise figure, Friis formula Equivalent noise temp.	Power point presentation, Chalk & Board	18/8/2017		2.7.4	
21	Module 4	L6.3	Pulse Analog Modulation Sampling theorem for low pass and bandpass signals with proof	Power point presentation, Chalk & Board	19/8/2017		4.7.1	
22	Module 4	L8.1	Anti aliasing filter, PAM	Power point presentation, Chalk & Board	30/8/17		4.7.2	
23	Module 4	L8.2	PWM generation and'degeneration	Power point presentation, Chalk & Board	1/9/2017		4.7.3	
24	Module 4	L9.1	PPM generation and'degeneration	Power point presentation, Chalk & Board	5/9/2017		4.7.4	
25	Module 5	L9.2	Digital Modulation Techniques Introduction to digital communication Quantization process	Power point presentation, Chalk & Board	6/9/2017		5.7.1	
26	Module 5	L9.3	Pulse code modulation,	Power point presentation, Chalk & Board	8/9/2017		5.7.2	
27	Module 5	L10.1	Delta modulation,Adaptive delta modulation	Power point presentation, Chalk & Board	12/9/2017		5.7.3	
28	Module 5	L10.2	Principle of time division multiplexing ,Frequency division multiplexing and its applications	Power point presentation, Chalk & Board	13/9/2017		5.7.4	
29	Module 5	L10.3	Bandpass Modulation Introduction to Line codes Intersymbol interference	Power point presentation, Chalk & Board	15/9/2017		5.7.5	

Sr. No.	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date		Resource Book Reference	Remarks
30	Module 5	L10.4	Binary phase shift keying	Power point presentation, Chalk & Board	16/9/2017		5.7.6	
31	Module 5	L11.1	Differentally encoded phase shift keying	Power point presentation, Chalk & Board	19/9/2017		5.7.7	
32	Module 5	L11.2	Quadrature phase shift keying	Power point presentation, Chalk & Board	20/9/2017		5.7.8	
33	Module 5	L11.3	M-ary phase shift keying	Power point presentation, Chalk & Board	22/9/17		5.7.9	
34	Module 5	L12.1	Quadrature amplitude shift keying	Power point presentation, Chalk & Board	26/9/17		5.7.10	
35	Module 5	L13.1	Binary frequency shift keying, M-ary frequency shift keying	Power point presentation, Chalk & Board	3/10/2017		5.7.11	
36	Module 6	L13.2	Electromagnetic radiation, Fundamentals, Types of propagation,	Power point presentation, Chalk & Board	4/10/2017		6.7.1 & 6.7.2	
37	Module 6	L13.3	Ground wave propagation , Sky wave propagation	Power point presentation, Chalk & Board	6/10/2017		6.7.3	
38	Module 6	L13.4	Troposphreric scatter propogation	Power point presentation, Chalk & Board	7/10/2017		6.7.4	
39	----	L14.1	Revison / Practice Session	Power point presentation, Chalk & Board	13/10/17		----	
40	----	L15.1	Revison / Practice Session	Power point presentation, Chalk & Board	16/10/17		----	

Sr. No.	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date		Resource Book Reference	Remarks
41	----	L15.2	Revison / Practice Session	Power point presentation, Chalk & Board	17/10/17		----	
Remark:		Syllabus Coverage:		Practice Session: 2			**Content Beyond Syllabus:** Case Study on OFDM	
Course:								
No. of (lectures planned)/(lecture taken): 41								
Advanced course: Digital Communication		20 Hours		Online NPTEL videos	**Web sources:** 1.http://nptel.ac.in/courses/117101051 2. www.tutorialpoint.com **Textbook reference:** 1. Digital communications: by Haykin ; Tata McGraw Hill Education private Ltd.			

Text Books:

1.1. Modern wireless communication systems: by Simon Haykin, Michael Moher, adapted by David Koilpillai; Pearson (Indian

1. Simon Haykin, Michael Moher, Introduction to Analog & Digital Communications, Wiley India Pvt. Ltd., 2nd Ed.

2. Herbert Taub, Donald L Schilling, Goutam Saha, Principles of Communication Systems, Tata McGraw Hill, 3rdEd.

3. V Chandrasekar, Communication Systems, Oxford University Press, Ist Ed.

References:

1. George Kennedy, Bernard Davis, SRM Prasanna, Electronic Communication Systems, Tata McGraw Hill, 5th Ed.

2. Wayne Tomasi, Electronic Communications Systems, Pearson Publication, 5th Ed.

3. BP Lathi,Zhi Ding, Modern Digital and Analog Communication Systems, Oxford University.

4. K Sam Shanmugam, Digital and Analog Communication Systems, Wiley India Pvt. Ltd, 1st Ed.

Sd/-	Sd/-	Sd/-
Name & Signature of Faculty	Signature of HOD	Signature of Principal /Dean (Academics)
Mr.Vikas Kaul		
Date:	Date:	Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non–digital / digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.