# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD ACADEMIC CALENDAR (2018-19) FOR NON-AUTONOMOUS CONSTITUENT& AFFILIATED COLLEGES B. TECH. II, III &IV YEARS I & II SEMESTERS

#### I SEM

S. No	EVENT	T	
1.	Commencement of Instruction	DATE	Duration
2.	First Mid Term Examinations	9 <sup>th</sup> July 2018	
3.	Submission of First Mid Term Exam Marks to	4 <sup>th</sup> to 6 <sup>th</sup> Sept. 2018	
<i>3</i> .	University on or before	15 <sup>th</sup> Sept. 2018	
4.	Parent-Teacher Meeting		-
5,	Dussehra recess	13 <sup>th</sup> Oct. 2018	
6.	Last date of Instruction	15 <sup>th</sup> to 20 <sup>th</sup> Oct. 2018	1 week
7.	Second Mid Term Examinations	10 <sup>th</sup> Nov. 2018	16 weeks
8.	Preparation Holidays and Practical Examinations	12 <sup>th</sup> to 14 <sup>th</sup> Nov. 2018	
0	Submission of Second Mid Term Exam Marks to	15 <sup>th</sup> to 24 <sup>th</sup> Nov. 2018	1 week
9.	University on or before	24 <sup>th</sup> Nov. 2018	
10.	End Semester / Supplementary Examinations		
11.	Semester Break	26 <sup>th</sup> Nov. to 8 <sup>th</sup> Dec. 2018	2 weeks
		10 <sup>th</sup> to 15 <sup>th</sup> Dec. 2018	I week

#### II SEM

S. No	EVENT	1	
1	Commencement of Instruction	DATE	Duration
2.	First Mid Term Examinations	17 <sup>th</sup> Dec. 2018	
2	Submission of First Mid Term Exam Marks to	11th to 13th Feb. 2019	- Hall
3.	University on or before	20 <sup>th</sup> Feb. 2019	
4.	Parent-Teacher Meeting		
5.	Last date of Instruction	9 <sup>th</sup> March. 2019	-
6.	Second Mid Term Examinations	13 <sup>th</sup> April 2019	16 weeks
7.	Preparation Holidays and Practical Examinations	15 <sup>th</sup> to 17 <sup>th</sup> April 2019	
8.	Submission of Second Mid Term Exam Marks to	18 <sup>th</sup> to 27 <sup>th</sup> April 2019	1 week
0.	University on or before	25 <sup>th</sup> April 2019	
9.	End Semester / Supplementary Examinations		2 <del>38</del> 0
10.	Summer Vacation	29th April to 11th May 2019	2 weeks
	No.	13 <sup>th</sup> May to 6 <sup>th</sup> July 2019	8 weeks

DIRECTOR
ACADEMIC & PLANNING, JNTUH





## Balaji Institute of Technology & Science

Laknepally, NARSAMPET, Warangal - 506331
Accredited By NAAC & ISO 9001:2015 Certified Institution
(Affiliated to JINTUIL Hyderabad and Approved by the AICTE, New Dellu)
Www.bitswgl.ac.in, email:principal@bitswgl.ac.in :: Ph. 98660 50044, Fax 08718-230521

### Department of Computer Science & Engineering

#### Academic Calendar 2018-19 (II SEM)

S.No	EVENT	DATE & DAY	Duration
1	Commencement of class work	17 <sup>th</sup> December 2018	
2	1 <sup>st</sup> Unit test Examinations		03 Days
3	Personal skills for Second years by TASK	January 2nd week	2 days
4	Workshop on MTA Software Development Fundamentals for Final years by TASK	January 4th week	05 Days
5	1 <sup>St</sup> Mid Term Examinations	11th to 13th February	03 Days
6	A&R Moocs for Final years by TASK	February 2nd week	01 day
7	Oracle Data Base Programming with SQL for 3 years by TASK	March 1st week	05 days
8	2 <sup>nd</sup> Unit test Examinations		3 days
9	Last date of instruction	13 <sup>th</sup> April 2019	
10	Second Mid Term Examinations	22 <sup>nd</sup> to24 <sup>th</sup> April 2019	3 days
11	Practical Examinations and preparation holidays	25 <sup>th</sup> April to 1 <sup>st</sup> May 2019	01 week
12	End Semester Examinations (Regular)& Supplementary Examinations	2 <sup>nd</sup> May to 16 <sup>th</sup> May 2019	02 Weeks
13	Summer Vacation	17 <sup>th</sup> May to 6 <sup>th</sup> July 2019	07 weeks

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www.bitswgl.ac.in, email:principal@bitswgl.ac.in :: Ph. 98660 50044, Fax 08718-230521

#### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING Academic Calendar 2018 – 2019 II – Semester

S.NO.	EVENT	DATE & DAY	DURATION
1	Commencement of instruction	24-12-2018	
2	Industrial visit(CPRI)-IV_EEE	January 3rd week	l day
3	Unit test-I	28 <sup>th</sup> Jan to 2 <sup>nd</sup> Feb'2019	1 week
4	Workshop on MEP III-EEE	February 1st week	2 days
5	First Mid Term Examinations	18th to 20th Feb'2019	3 days
6	A&R Moocs -IV EEE by TASK	February 2 <sup>nd</sup> week	1 day
7	Industrial visit(Hydel power plant)-III EEE	February 3 <sup>rd</sup> week	1 day
8	Parent teacher meeting	March 9th ,2019	1 day
9	Personal Skills for II-EEE by TASK	March 3 <sup>rd</sup> week	2 days
10	Unit test-II	25 <sup>th</sup> March to 30 <sup>th</sup> March '2019	lweek
11	Oracle java fundementals for III- EEE by TASK	March 3 <sup>rd</sup> week	5 days
12	Industrial visit(thermal power plant)-II EEE	March 3 <sup>rd</sup> week	l day
13	Last date of instruction	20 <sup>th</sup> April'2019	16 weeks
14	Preparation holidays and practical examinations	25 <sup>th</sup> April to 4 <sup>th</sup> May'2019	1 week
15	End semester/supplementary Examinations	6 <sup>th</sup> to 18 <sup>th</sup> May'2019	2 weeks,
16	Summer vacations	20 <sup>th</sup> May to 13 <sup>th</sup> July'2019	8 weeks

HoD

Principal Principal

Principal

Bulgji Institute of Technology & Science Laknepally (V), Narsampet (M) Warangal (Dt) - 506 331 (T.S)



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Laksepally, NARNANIPET, Warrangal = 506331

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(Amiliated to JNT39), Hyderabad and Approved by the ACCTF, New Delib)

www.bitswgl.ac.ln, email:principal@bitswgl.ac.ln;; Ph. 98660 50044, Fax 08718-230521

## Dept. of Electronics & Communication Engineering

ACADAMIC CALENDAR: 2018-2019

II- Semester

S.No	Activity Name	Conduction Date	
01	Commencement of Instruction	24.12.2018	
02	Workshop on Assembling and Disassembling the components in the computer system to II year ECE	09.01.2019 to 10.01.2019	2days
03	Workshop on digital design through Verilog to III years of ECE	11.01.2019 to 12.01.2019	2 days
04	Industrial visit to Nagarjuna Sagar II Years	12.01.2019	l day
05	Workshop on Micro Controllers to IV year ECE	17.01.2019 to 19.01.2019	3 days
06	A One day seminar on AWP to III year	18.01.2019	01 Day
07	Workshop on PCB design &fabrication to II year ECE	23.01.2019 to 24.01.2019	2 days
08	Workshop on Mentor graphics to III year	24.01.2019 to 25.01.2019	2 days
09	Unit test-1	28.01.2019 to 02.02.2019	5 days
10	Workshop on Electrical circuit design and Trouble Shooting to IV year	30.01.2019 to 31.01.2019	2 days
11	Alumni Meet	14.02.2019	1 day
12	1-Mid examination	18.02.2019 to 20.02.2019	3 days
13	Workshop on Simulink &GUI in matlab graphics to III year	21.02.2019 to 22.02.2019	2 days
14	Industrial visit to CPRI, Hyd IV Year	23.02.2019	1 day
15	Workshop on MATLAB to II year	25.03.2019 to 26.03.2019	2 days
16	Workshop on Digital Signal Processing to IV year	27.02.2019 to 01.03,2019	3 days
17	A One day Guest Lecture on mobile Adhoc Networks to IV year	02.03.2019	1 days
18	Industrial Visit to RTTC, Hyd	02.03.2019	1 day
19	Parent –Teacher meeting	09.03.2019	1 day
21	Guest Lecture on Higher Studies to IV year	15.03.2019	1 day
22	Workshop on IOT by Department faculty to III year	20.03.2019 to 21.03.2019	2 days
23	Guest Lecture on Career Guidance to IV year	23.03.2019	l day
20	Unit test-II	25.03.2019 to 30.03.2019	5 days
24	Last date of Instruction	20.04.2019	***
25	II Mid Examination	22.04.2019 to 24.04.2019	3 days
26	College Day Event		

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## DEPARTMENT OF CIVIL ENGINEERING

Academic Calendar for year 2015-16 (1- Semester)

S.No.	Name of the Activity	Date(s)
1	Commencement of Class work	29-06-2015
2	1 Spell of Instructions	29-06-20145 to 22-08-2015
3	Guest Lecture	1 <sup>st</sup> week of August
4	1 Mid Examinations	24-08-2015 to 29-08-2015
5	One Day Seminar	1st week of September
6	Engineers' Day Celebrations	15-09-2013
7	II Spell of Instructions	31-08-2015 to 17-10-2015
8	Dussehra Holidays	19-10-2015 to 24-10-2015
9	II Mid Examinations	26-10-2015 to 31-10-2015
10	Preparation & Practical Examinations	02-11-2015 to 07-11-2015
11	End Semester examinations	09-11-2015 to 21-11-2015
12	Supplementary Examinations	23-11-2015 to 05-12-2015
13	Commencement of II Sem class work	07-12-2015

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<a href="https://www.bitswgl.ac.in">www.bitswgl.ac.in</a> email:principal@bitswgl.ac.in :: Ph. 98660 50044, Fax 08718-230521

#### **ELECTRONICS AND COMMUNICATION ENGINEERING**

#### **COURSE DESCRIPTION FORM**

Course Title	Digital Communications				
Academic Year	2017-18				
Course Code	A60420	A60420			
Regulation	R15				
Year & Sem	III Year & II Se	III Year & II Sem			
Course structure	Lectures	Tutorial	Practicals	Credits	
Course structure	4	0	0	4	
Course Faculty	Dr. Uday Chandran, Mrs. Asiya Sulthana				

#### I. OVERVIEW

The aim of this course is to provide students with a thorough understanding of sampling, quantizing and coding to convert the analog signals in to digital form. Various analog to digital conversion techniques like PCM and Delta Modulation along with the refined forms like DPCM and ADM are also discussed. In addition to baseband transmission of digital data over the channel, carrier modulation schemes like ASK, FSK, PSK, DPSK and QPSK are also covered.

This course focuses on how information theory relates to the design of digital communications systems and to provide the knowledge and skills to perform design calculations on these systems. This course also concentrates on Spread Spectrum Modulation concepts. This course aims at developing statistical techniques and skills needed to evaluate the performance of Digital communication systems in the presence of noise.

#### II. PREREQUISITE(S)

- Signals & Systems.
- Probability theory & Stochastic Processes.
- Analog Communications.

## III. MARKS DISTRIBUTION

For theory subjects, during a semester, there shall be two mid-term examinations. Each mid-term examination consists of one objective paper, one descriptive paper and one assignment. The objective paper and the descriptive paper shall be for 10 marks each with a total duration of 1 hour 20 minutes (20 minutes for objective and 60 minutes for descriptive paper). The objective paper is set with 20 bits of multiple choice, fill-in the blanks and matching type of questions for a total of 10 marks. The descriptive paper shall contain 4 full questions out of which, the student has to answer 2 questions, each carrying 5 marks. While the first mid-term examination shall be conducted on 50% of the syllabus, the second mid-term examination shall be conducted on the remaining 50% of the syllabus. Five marks are allocated for assignments (as specified by the subject teacher concerned). The first assignment should be submitted before the conduct of the first mid examination, and the second assignment should be submitted before the conduct of the second mid-examination. The total marks secured by the student in each mid-term examination are evaluated for 25 marks, and the average of the two mid-term examinations shall be taken as the final marks secured by each student in internals/sectionals. If any student is absent from any subject of a mid-term examination, an on-line test will be conducted for him by the university. The details of the question paper pattern are as follows.

The end semester examinations will be conducted for 75 marks consisting of two parts viz. i) Part-A for 25 marks, ii) Part - B for 50 marks.

Part-A is compulsory question which consists of ten sub-questions. The first five sub-questions are from each unit and carry 2 marks each. The next five sub-questions are one from each unit and carry 3 marks each.

Part-B consists of five questions (numbered from 2 to 6) carrying 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

#### IV. EVALUATION SCHEME

S. No	CO	MPONENT	DURATION	MARKS
	2 20 2	Theory	One Hour	10
1	Mid –I Examination	Quiz	20 Minutes	10
	Examination	Assignment - 1		05

2	NC 1 TO	Theory	One Hour	10
	Mid –II Examination	Quiz	20 Minutes	10
		Assignment - 2	124	05
3	Semester End Examination		3 Hours	75

#### V. COURSE OBJECTIVES

By learning this course, the students will be able to:

- To understand the functional block diagram of Digital Communication System.
- To understand the need for source and channel coding.
- To study various source and channel coding techniques.
- To understand a mathematical model of Digital Communication System for bit error rate analysis of different digital communication systems.

#### VI. COURSE OUTCOMES

By the end of this course, Students should be able to:

- 1. Analyse various methods of digital modulation and demodulation techniques
- Design PCM and DM Systems.
- Analyse error performance of digital modulation techniques, different Source Coding techniques and their efficiency
- Compare Generation and correction of Coding sequences for different error control codes
- 5. Summarize spread spectrum techniques

#### VII. HOW PROGRAM OUTCOMES (POs) ARE ASSESSED

	PROGRAM OUTCOMES	LEVEL	ASSESSED BY
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	Н	Lectures, Assignments, Exercises

PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of reaching substantiated conclusions and engineering sciences.	н	Assignments Hands on Practice
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with components or processes that meet the specified needs with the spec	Н	Design Exercises
PO4	and the cultural, societal, and environmental Conduct investigations of complex problems: Use research-based knowledge and research methods including analysis and interpretation of data,	Н	Exercises, Assignments
PO5	and synthesis of the information to provide valid conclusions.  Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	N	-
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities	Н	Oral Discussions
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	N	-
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	N	-
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	N	-
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear	N	-

	instructions.		
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	N	-
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	Н	Development of Projects

## VIII. HOW PROGRAM SPECIFIC OUTCOMES (PSOs) ARE ASSESSED

	PROGRAM OUTCOMES	LEVEL	ASSESSED BY	
PSO1	Students shall have knowledge on specific problems in Industrial and Domestic automation and ability to provide prototype solutions Using (i) Advanced Micro Controllers/Processors & DSP processor, (ii) Software Tools.	N	13 V20	
PSO2	Developing student's ability to <b>Design and Simulate Architectures</b> in VLSI domain using Xilinx and FPGA, thereby, evaluating and analyzing the performance of them by EDA Tools.	N	-	

N- None

S- Supportive

H- Highly Related

#### IX. SYLLABUS

#### A60420: Digital Communications

B.Tech. III Year II Sem.

LTPC 4004

#### UNIT -I:

Elements of Digital Communication Systems: Advantages of Digital Communication Systems, Bandwidth-S/N Trade-off, Hartley Shannon Law and Sampling Theorem.

Pulse Code Modulation: PCM Generation and Reconstruction, Quantization Noise, Non Uniform Quantization and Companding, DPCM, Adaptive DPCM, DM and Adaptive DM, Noise in PCM and DM.

#### UNIT -II:

**Digital Modulation Techniques:** Introduction, ASK,ASK Modulator, Coherent ASK Detector, Non-Coherent ASK Detector, FSK, Bandwidth and Frequency Spectrum FSK, Non Coherent FSK Detector, Coherent FSK Detector, FSK Detection using PLL, BPSK, Coherent PSK Detection, QPSK, Differential PSK.

#### UNIT -III:

Baseband Transmission and Optimal Reception of Digital Signal: Pulse Shaping for Optimum Transmissions, A Baseband Signal Receiver, Probability of Error, Optimum Receiver, Optimal of Coherent Reception, Signal Space Representation and Probability of Error and Eye Diagrams for ASK, PSK, FSK, Cross Talk.

**Information Theory:** Information and entropy, conditional entropy and redundancy, Shannon Fano coding, Mutual Information, Information loss due to noise, source codings – Huffman Code, variable length coding, Source coding to Increase average Information per bit, Lossy source coding.

#### **UNIT-IV:**

#### **Error Control Codes**

Linear Block Codes: Matrix Description of Linear Block Codes, Error Detection and Error Correction Capabilities of Linear Block Codes. Cyclic Codes: Algebraic Structure, Encoding, Syndrome Calculation, Decoding.

Convolution Codes: Encoding, Decoding using State, Tree and Trellis Diagrams, Decoding using Viterbi Algorithm, Comparison of Error Rates in Coded and Uncoded Transmission.

#### UNIT -V:

**Spread Spectrum Modulation:** Use of Spread Spectrum, Direct Sequence Spread Spectrum (DSSS), Code Division Multiple Access, Ranging using DSSS, Frequency Hopping Spread Spectrum, PN - Sequences: Generation and Characteristics, Synchronization in Spread Spectrum Systems

#### TEXT BOOKS:

- 1. Principles of Communication Systems Herbert Taub, Donald L Schiling, Goutam Saha, 3rd Edition, Mcgraw-Hill, 2008.
- 2. Digital and Analog Communication Systems Sam Shanmugam, John Wiley, 2005.
- 3. Digital Communications John G. Proakis, Masoud Salehi 5th Edition, Mcgraw-Hill, 2008.

#### REFERENCE BOOKS:

- 1. Digital Communication Simon Haykin, John Wiley, 2005.
- 2. Digital Communications Ian A. Glover, Peter M. Grant, 2nd Edition, Pearson Edu., 2008.
- 3. Communication Systems B.P. Lathi, BS Publication, 2006.

- 4. A First course in Digital Communications -Nguyen, Shewedyh, Cambride.
- 5. Digital Communication- Theory, Techniques, and Applications \_ R. N. Mutagi, 2nd Ed. 2013.

## X. COURSE PLAN

S.No.	Topic	Remarks
1	Unit - 1: Elements of Digital Communication Systems	Kemarks
2	Wodel of Digital Communication Systems	
	Digital representation of an Analog signal	
3	Certain issues in Digital transmission, Advantages of Digital Communication System	
4	Sampling and Reconstruction theorem, Types of Sampling	
5	introduction to Baseband sampling	
6	Waveform Coding Techniques: PCM Generation and Reconstruction	
7	Quantization process, Classification of Quantizers, Mean Square Value of Quantization process	
8	Coding, Digital Formats, Bandwidth requirements in PCM	
9	SNR calculations in PCM, Problems	
10	Companding in PCM	
11	Differential Pulse Code Modulation(DPCM), Comparison between PCM and DPCM	
12	Adaptive DPCM	
13	Concept of Delta Modulation DM Modulator and Demodulator	
14	Limitations of DM, SNR in DM	
15	Adaptive Delta Modulation, Noise in PCM and DM, Comparison between PCM and DM	
16	Unit – 2: Information Theory Basic concepts of Information theory, Measure of Information: Entropy	
17	Properties of Entropy, Information Rate, Problems	
18	Measure of information for 2-dimensional case, Problems	
19	Mutual Information, Channel Capacity, Efficiency, Redundancy	
20	Entropy of Gaussian R.V, Shannon Hartley Channel Capacity Theorem	
21	Channel Capacity of Gaussian channel, BW-S/N trade off	
22	Information loss due to noise, Need and Advantages of Source Coding, variable length coding, Source coding to increase average information per bit.	
23	Shannon Fano coding	
24	Huffman Coding	
25	Lempel-Ziv Coding, Lossy source coding	
26	Error Control Codes Introduction to Error Control Coding	
27	Matrix description of LBCs, Error detection and error Correction capabilities of linear block codes	
28	Linear Block Codes(Encoding)	
29	Syndrome Calculation in LBC	
30	Non-symmetric and Symmetric forms of Cyclic codes	

31	Encoder using (n-k) bit shift register	
32	Problems	
22	Introduction to Convolution Codes	
33	Time domain Approach of Convolution Codes	
34	Transform Approach of Convolution Codes	
35	Graphical approach: State and Tree diagrams	
36	Graphical approach: Trellis diagram	
37	Decoding using Viterbi Algorithms	
38	Problems	
39	Unit – 3: Baseband Pulse Transmission Introduction, Matched Filter	
40	Error Rate due to noise, Inter symbol Interference	
41	Nyquist criterion for distortion less baseband binary transmission	
42	Correlation level coding	
43	Baseband M-ary PAM transmission, Digital Subscriber Lines	
44	Optimal Linear Receiver	
45	Adaptive equalizers, Eye Patterns	
46	Digital Pass band Transmission: Pass band transmission model	
47	Gram-Schmidt Orthogonalization procedure	
48	Geometric interpretation of signals, Coherent detection of signals in noise	
49	Probability of error	
50	Correlation receiver	
51	Unit – 4: Digital Modulation Techniques Introduction, ASK, ASK Modulator	
52	ASK detection: Coherent & Non coherent	2
53	FSK, Bandwidth and Frequency spectrum of FSK	+
54	FSK Detection: Coherent & Non coherent	*
55	BPSK: Generation & Detection	-
56	DPSK	
57	QPSK	
58	8-PSK, 16-PSK	
59	QAM	
59	Unit – 5: Spread Spectrum Modulation Use of Spread Spectrum	
60	Direct Sequence Spread Spectrum (DSSS)	
61	PN - sequences: Generation and Characteristics	
62	Code Division Multiple Access	
63	Ranging using DSSS	
64	Frequency Hopping Spread Spectrum	
65	Synchronization in Spread Spectrum Systems	

## XI. MAPPING OF COURSE OUTCOMES WITH POS AND PSOS

Course	Program Outcomes(POs)	Program Specific
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Outcome													Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POH	PO12	PSO1	PSO2	
CO1	2	2	2			2	-	-		-		2	-	-	
CO2	-	-	2	-	-	2	_	-	K#1	-	-	2	-	-	
CO3	3	3	2	3		-	7.7	1.5	3( <del>4</del> )	-	•	2	12	-	
CO4	2	2	3	2	74.1			12	-	-	-	1	( <b></b> )	=8	
CO5	2	-	-	-		-	# 1	•		-	-	2	2	<b>!</b> •	
Avg.	2.25	2.33	2.25	2.5	-	2	<b>=</b>	12	-	-		1.8		-	

Sign. Of the HOD

Head of the Department Electronics and Comm. Engg BITS Laknepally-506, 331.

Principal

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## LECTURE SCHEDULE

Subject : EMTL

Year & Branch: III B.Tech. ECE - A & B

No. of Periods per Week: 5

Acadamic Year: 2019-20

Regulation: R 16

Lecture No.	Name of the Unit/Topic	Regulation: K 16  Remarks
	UNIT - I : Electrostatics	
1	1.1 Introduction ElectroMagnetic Theory 1.2 Vector analysis 1.2.1 Defination Of Vector 1.2.2 Addition & Substraction Of Vector 1.2.3 Dot Product 1.2.4 Vector Product 1.2.5 Problems	
2	1.3 Orthogonal Coordinate systems 1.3.1 Cartesian Coordinate system 1.3.2 Cyllindrical Coordinate system 1.3.3 Spherical Coordinate system	
3	1.4 Differential Operator 1.4.1 Gradient Of Scalar 1.4.2 Problems 1.4.3 Divergent Of Vector 1.4.4 Problems	500 
4	1.4.5 Curl Of Vector 1.4.6 Problems 1.4.7 Laplacian Of Scalar 1.4.8 Problems	e.
5	<ul> <li>1.5 Differential Length</li> <li>1.5.1 in Cartesian Coordinate systems</li> <li>1.5.2 in Cyllindrical Coordinate system</li> <li>1.5.3 in Spherical Coordinate system</li> <li>1.6 Diffrential Area</li> <li>1.6.1 in Cartesian Coordinate systems</li> <li>1.6.2 in Cyllindrical Coordinate system</li> <li>1.6.3 in Spherical Coordinate system</li> <li>1.7 Differential Volume</li> <li>1.7.1 in Cartesian Coordinate systems</li> <li>1.7.2 in Cyllindrical Coordinate system</li> <li>1.7.3 in Spherical Coordinate system</li> <li>1.7.3 in Spherical Coordinate system</li> </ul>	

6	1.8 Vector Identities 1.9 Charge Distribution 1.9.1 Point Charge 1.9.2 Line Charge 1.9.3 Sheet Chrage 1.9.4 Volume Charge 1.10 Current Distribution 1.10.1 Line Current 1.10.2 Sheet Current 1.10.3 Volume Current	
7	1.11 Coulomb's law 1.11.1 Defination 1.11.2 Force On Point Charge Due to one Point Charge 1.11.3 Force On Point Charge Due to Many Point Charges	
8	1.12 Electric Field Intensity 1.12.1 Defination 1.12.2 Electric Field Intensity at a Point Due to Point Charge	
9	1.12.3 Electric Field Intensity at a Point Due to Infinite Line Charge	
10	1.12.4 Electric Field Intensity at a Point Due to Infinite Sheet Charge	
11	1.12.5 Electric Field Intensity at a Point Due to Spherical Volume Charge	
12	1.13 Electric Flux density 1.13.1 Defination 1.13.2 Electric Flux Intensity at a Point Due to Point Charge 1.13.3 Electric Flux Intensity at a Point Due to Infinite Line Charge 1.13.4 Electric Flux Intensity at a Point Due to Infinite Sheet Charge 1.13.5 Electric Flux Intensity at a Point Due to Spherical Volume Charge	
13	1.14 Gauss Law 1.14.1 Defination 1.14.2 Applications of Gauss's Law For Symetric Charge Distributions 1.14.2.1 Electric Flux Intensity at a Point Due to Symetric Infinite Line Charge	

14	1.14.2.2 Electric Flux Intensity at a Point Due to Symetric Infinite Sheet Charge 1.14.2.3 Electric Flux Intensity at a Point Due to Symetric Spherical Volume Charge	
15	1.15 Electric potential 1.15.1 Defination 1.15.2 Electric Potential Due to Point Charge 1.15.3 Electric Potential Due to sheet Charge 1.15.4 Electric Potential Due to Volume Charge	## E
16	1.16 Relation between E and V 1.17 Maxwell's two equations of electrostatic fields	
17	1.18 Energy density	
18	1.19 Materials 1.20 Convection Current 1.21 Conduction Current	
19	1.22 Dielectric constant 1.22.1 Defination 1.22.2 Isotropic Dielectrics 1.22.3 Homogeneous Dielectrics 1.22.4 Linear Dielectrics	
20	1.23 Continuity equation1.24 Relaxation time	81
21	1.25 Poisson's and Laplace's Equations 1.26 Capacitance 1.26.1 Defination 1.26.2 Parallel plate Capacitance	
22	1.26.3 Coaxial Capacitance 1.26.4 spherical capacitance	
T	UNIT II : Magnetostatics, Maxwell Equations (Time Vary	ing Fields)
23	2.1 Revision Of Current Distributions 2.2 Biot - Savart's Law 2.2.1 Defination 2.2.2 Magnetic Field Intensity Due to Line Current 2.2.3 Magnetic Field Intensity Due to Sheet Current 2.2.4 Magnetic Field Intensity Due to Volume Current	2 2
24	2.3 Magnetic Flux density 2.4 Ampere's Circuital Law 2.4.1 Defination	
25	2.4.2 Application Of Amperes Law for Line Current 2.4.3 Application Of Amperes Law for Sheet Current	
26	2.5 Maxwell's two equations for Magnetostatic Fields . 2.6 Magnetic scalar potential	il .

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27	2.7 Magnetic vector potential	
28	2.8 Force due to magnetic fields 2.8.1 Force On Charged Particle 2.8.2 Force On Current Element 2.8.3 Force Between Current Elements 2.9 Ampere's Force Law	
29	2.10 Inductance 2.11 Magnetic Energy	
30	2.12 Faraday's Law 2.13 Trasformer and Motional emf 2.13.1 Transformer emf	
31	2.13.2 Motional emf 2.13.3 Transformer emf and Motional emf	
32	2.14 Inconsistency of Ampere's Law and Displacement current density	
33	2.15 Maxwell Equations in Final Forms 2.15.1 Point Form 2.15.2 Integral Form 2.15.3 Statement Form	
34	2.16 Conditions at a Boundary surface 2.16.1 Electrostatics 2.16.1.1 Dielectric - Dielectric Boundary Surface	
35	2.16.1.2 Conductor - Dielectric Boundary Surface 2.16.1.3 Conductor - Freespace Boundary Surface	
36	2.16.2 Magnetostatics 2.16.2.1 Dielectric - Dielectric Boundary Surface	
	UNIT - III : EM Wave Characteristics - I & II	
37	3.1 Introduction	
38	3.2 Wave Equation in Homogeneous Medium 3.2.1 Wave Equations for Perfect Dielectric(Free Space)	
39	3.2.2 Wave Equations for Conducting medium 3.3 Time Hormonic Wave Equation ( Phasor Notation)	
40	3.4 Uniform Plane Wave Propagation 3.5 Solution for the Uniform Plane wave Equation in lossless Medium 3.5.1 Phase Velocity 3.5.2 Wavw Velocity	
41	3.6 Charecteristic Impedence in lossless Medium	
42	3.7 Solution for the Uniform Plane wave Equation in lossy(Conducting) Medium 3.8 Charecteristic Impedence in lossy Medium	

43	3.9 Wave Propagation in 3.9.1 Perfect Dielectric 3.9.2 Conducting Medium	
44	3.9.3 Good Conducting Medium 3.9.4 Good Dielectric Medium 3.10 Depth of Penetration(Skin Depth)	
45	3.11 Polarization 3.11.1 Defination 3.11.2 Linear Polarization 3.11.2.1 Vertical Polarization 3.11.2.2 Horizantal Polarization 3.11.3 Circular Polarization 3.11.4 Eliptical Polarization	
46	3.12 Reflection and Refraction Of Uniform Plane Wave 3.13 Reflection of plane waves by Perfect Conductor with Normal incidence	82
47	3.14 Reflection of plane waves by Dielectric with Normal incidence	
48	3.15 Reflection Of Plne Wave - Oblique Incidence 3.16 Reflection of Horizantally Polarized Wave by a Perfect Conductor - Oblique Incidence	
49	3.17 Reflection of Vertically Polarized Wave by a Perfect Conductor - Oblique Incidence 3.18 Reflection By Perfect Dielectric - Oblique Incidence	ie.
50	3.19 Brewster Angle 3.20 Critical Angle 3.21 Total internal reflection	
51	3.22 Surface Impedance 3.23 Poynting Vector and Poynting theorem	
	UNIT - IV : Transmission Lines - I	
52	4.1 Introduction 4.2 Types Of Transmission Lines 4.2.1 Transmission Line Parameters 4.2.2 Equivalent Network In Line Parameters	Y
53	4.3 Transmission line Equations 4.4 Primary and Secondary Constants	
54	4.5 Expressions for Charecteristic Impedence 4.6 Expressions for Propagatio Constant	
55	4.7 Phase and Group velocities	
56	4.8 Infinte Line Concepts 4.9 Losslessness/ Low loss Characterization	
57	4.10 Condition for Distortionlessness and Minimum . Attenuation.	

58	4.11 Loading - Types of Loading	
59	4.12 Illustrative problems	
3.88	UNIT V: Trasmission Lines - II	
60	5.1 Input Impedance Relations 5.2 SC and OC Lines	
61	5.3 Reflection Coefficient 5.4 VSWR	
62	5.5 UHF Lines as circuit elements	
63	5.6 Impedance Trasformations	
64	5.7 Significance of Zmin and Zmax	
65	5.8 Smith Chart	
66	5.9 Configuration and Applications	
67	5.10 problems	
68	5.11 Single stub matching	
69	5.12 Double stub matching	
70	5.13 Problems	

#### **Text Books**

- 1. Elements of Electromagnetics Matthew N. Sadiku 4ed, Oxford Univ
- 2. Electromagnetic Waves and Radiating Systems E.C.Jordan and Balmain 2ed, PHI
- 3. Transmission Lines and Networks Umesh Sinha, Satya Prakashan

#### Reference Books

- 1. Engineering Electromagnetics Nathan Ida, Springer
- 2. Engineering Electromagnetics William H.Hayt, TMH.
- 3. Networks, Lines and Fields John D. Ryder, 2ed, PHI

Signature of HOD Head of the Depa

Electronics and Comm. Engl) BITS, Laknepally-506 331

Principal

Balaji Institute of Technology & Science Lakriepally (V), Narsampet (M) Warangal (Dt) - 506 331 (T.5)

Estd.: 2001



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#### MINUTES OF MEETINGS WITH DEPT STAFF

Location: R.NO:204/B Date: 08-10-2018 Time: 10:30 a.m

Agenda: Syllabus coverage.

- Counsellors are required to inform students to get a letter duly signed by parent for not attending parent

   teacher meeting on 6-10-2018.
- 2. The letter should be collected on 11/10/2018 and the counsellor should cross verify the reason by calling parent .If it is verified the letter will be accepted otherwise bring it to the notice of HOD.
- 3. All faculty are required to submit the attendance registers along with the onedu updation if any pending in posting of the attendance are required to update it today.
- 4. Faculty are requested visit the office in turn wise, which HOD is giving the order list for the profile updation.
- 5. Today meeting in the main seminar Hall at 3:45 pm regarding the Wednesday Panchayat Raj exam.
- 6. On Wednesday college buses will start from the points at 7:30 am
- Faculty are requested to follow the lab procedure which is discussed in the departing meeting for many times.
  - Day today evaluation of the record observation books
  - Updating the marks in the attendance registers.
  - List of experiments should be written in observation book by the students in circulation process
  - Submit the viva marks of every week on Thursday with proof.
- 8. Unit test II is scheduled during the dates 22/10/2018 to 24/10/2018 to II &IV B.Tech students on 23-10-2018 to 25-10-2018.
- 9. Faculty are adviced to plan for the syllabus completion within the last working day.
- 10. Faculty are suggested to plan for the class test on the important topics for making the students for the practice on the topics.
- 11. Pass percentage is the responsibility of the subject teacher.
- 12. Faculty are adviced to take measures in improving the pass percentage.
- 13. A guest lecture is planned on 22-10-2018 on security issues in communications by Mrs.N.Siva Priya , Asst.Prof in CSE department. Cauvery College for women, Trichy, Tamilnadu.
- 14. A two workshop is planned for III B.Tech ECE students on Programming in VERILOG & VHDL using Xilinx software on 26-10-2018 & 27-10-2018.

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Warangal (Dt) - 506 331 (T.S)

- 15. A three day workshop for the ECE students on Aurdino board and its applications on 29-10-2018 to 31-10-2018 with the registration amount of Rs.150\-.
- 16. Discussion with the department staff regarding the suggestions/Complaints given by the parents on the parent teacher meeting held on 6-10-2018.
  - Faculty are requested not to stress the students with more no.of assignments.
  - ii. Study hours for the II/III/IV B. Tech students for clearing the doubts.
  - iii. Guest lecture on the Awareness about the jobs and higher education.
  - Drinking water facility problem by arranging water cans for every class and maintenance by the department attender.
  - v. During exam time no study hours in the college for the HOSTEL students
  - vi. In the mathematics subject many students are having he problems.
  - vii. No information was given to the parents when the students were in the I B.Tech regarding attendance, marks and many more in the similar way.
  - viii. Parents requested to give considerations to the students regarding the submission of works , punishment depending upon health conditions of the students
- 17. Counsellors and class teachers are required to sign the letter with a comment after the verification with the parent on call and then forward the letter to HOD.

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18. Faculty are requested to update the personal files by today i.e., 8/10/2018

19. Faculty are requested to submit the course files today i.e., 8/10/2018 by 3:45 pm

Head Dept of ECE artment Plean of Electronics and Comm. Engo BITS, Laknepally-506 331

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्	SYLLABUS COVERAGE REPORT						SYLLABUS COVERAGE REPORT					
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#### SYLLABUS COVERAGE REPORT

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## Balaji Institute of Technology & Science

Laknepally, NARSAMPET, Warangal - 506331

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Date: 22-07-2019

#### NOTICE

ATTENTION: II, III & IV B.Tech. I Sem. Students

All the II, III & IV B.Tech I-Semester Students are hereby informed to pay I Year II

-Sem-(R18 & R16) Advanced Supplementary Exams August-2019, Examination Fee in Examination

Branch from 23-07-2019 (Tuesday) to 29-07-2019 (Monday) (on working days only).

Fee Collection Timings:

10:30 am to 1:00 pm & 2:00 pm to 3:30 pm

**Examination Fee Structure:** 

THE TOTAL TO STRUCTURE TO						
ADVANCED SUPPLEMENTARY	(R16 REGULATIONS)					
FOR WHOLE EXAMINATION (ALL SUBJECTS)						
FOR ONE SUBJECT (THEORY/PRACTICAL)						
CAL/BOTH)	Rs.500/-					
FOR THREE SUBJECTS (THEORY/PRACTICAL/BOTH) FOR FOUR SUBJECTS & ABOVE (THEORY/PRACTICAL/BOTH)						
						EXAM REGISTRATION START DATE
^ 22-07-2019	29-07-2019					
30-07-2019	30-07-2019					
With Late Fee of Rs. 100/- 30-07-2019 With Late Fee of Rs. 1000/- 31-07-2019						
01-08-2019	02-08-2019					
	ECTS) AL) CAL/BOTH) TICAL/BOTH) RY/PRACTICAL/BOTH) START DATE 22-07-2019 30-07-2019 31-07-2019					

NOTE:

The detained student has to come along with parent to college and fill the undertaking form specified by JNTUH before paying the examination fee in examination

branch.

I/c Examinations

Copy to: All Notice Boards

All HOD's for classroom circulation

Examination File Onedu In charge Account Section Scholarship

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#### DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.

Date: 13.08.2019

#### CIRCULAR

All the staff members are hereby informed that  $\underline{UNIT\ TEST-I}$  is scheduled from 19.08.2019(Monday) to 23.08.2019(Friday).

Date	Subject					
	II ECE	III ECE	IV ECE			
19.08.2019	EDC		AI			
20.08.2019.	NATL	LDIC	VLSI Design			
21.08.2019	DSD ·	DC .	CN			
22.08.2019	S&S	EMTL	RS			
23.08.2019	PTSP	DBMS& FOM(P7)	MWE			

In this connection all the faculty members who are handling the subjects are informed to submit 4 questions from your concerned subject according to bloom taxonomy level on or before 16.08.2019.

Note: - Faculty members are informed to keep file in department system.

My Computer > D Drive > A.Y.2019-20 > EXAMS

Dept.Coordinator

Head, Dept. E

Head of the Department Electronics and Comm. Engg BITS, Laknepally-508-331.

Principal

Balaji Institute of Technology & Science Lakriepally (V), Narrampet (M) Warangal (Dt) - 506 331 (T.5)

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY - HYDERABAD - 500085

E X A M I N A T I O N B R A N C H

II YEAR B.TECH I SEMESTER R18 REGULATION II -MID TERM EXAMINATIONS NOVEMBER -2019

TI M E T A B L E

TIME→ FN: 10.00 AM TO 11.30 AM AN: 02.00 PM TO 03.30 PM

	DATE, SESSION AND DAY							
BRANCH	21-11-2019 FN 21-11-2019 AN THURSDAY THURSDAY		22-11-2019 FN FRIDAY	22-11-2019 AN FRIDAY	23-11-2019 FN SATURDAY			
CIVIL ENGINEERING (01-C E)	Surveying and Geomatics	Engineering Geology	Strength of Materials - I	Probability and Statistics	Fluid Mechanics			
ELECTRICAL AND ELECTRONICS ENGINEERING (02- EEE)	Engineering Mechanics (Substitute subject: FMHM)	Electrical Circuit Analysis	Analog Electronics	Electrical Machines - I	Electromagnetic Fields			
MECHANICAL ENGINEERING (03- ME)	Probability and Statistics & Complex Variables	Mechanics of Solids	Material Science and Metallurgy	Production Technology	Thermodynamics			
ELECTRONICS & COMMUNICATIONS ENGINEERING (04- ECE)	Probability Theory and Stochastic Processes	Network Analysis and Transmission Lines	Digital System Design	Signals and Systems	Electronic Devices and Circuit			
COMPUTER SCIENCE & ENGINEERING (05- CSE)	Analog and Digital Electronics	Data Structures	Computer Oriented Statistical Methods	Object Oriented Programming using C++	Computer Organization and Architecture			

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Principal

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## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

KUKATPALLY - HYDERABAD - 5000 85 EXAMINATION BRANCH

#### III YEAR B.TECH - I SEMESTER- R16 REGULATION II - MID TERM EXAMINATIONS NOVEMBER-2019

TIME→ FN: 10.00 AM TO 11.30 AM AN: 02.00 PM TO 03.30 PM

BRANCH	21-11-2019 FN THURSDAY	21-11-2019 AN THURSDAY	22-11-2019 FN FRIDAY	22-11-2019 AN FRIDAY	23-11-2019 FN SATURDAY
CIVIL ENGINEERING (01-CE)	Fundamentals of Management	Concrete Technology	Design of Reinforced Concrete Structures	Water Resources Engineering	(Open Elective-I) Fundamentals of Mechanical Engineering
ELECTRICAL AND ELECTRONICS ENGINEERING (02-EEE)	Fundamentals of Management	Electrical Measurements & Instrumentation	Microprocessors and Microcontrollers	Power Systems – II	(Open Elective-I) Database Management Systems
MECHANICAL ENGINEERING 03-ME)	Fundamentals of Management	Thermal Engineering-I	Metrology and Machine Tools	Design of Machine Members –I	(Open Elective-I) Database Management Systems
ELECTRONICS AND COMMUNICATI ON ENGINEERING (04-ECE)	Fundamentals of Management	Digital Communications	Electromagnetic Theory and Transmission Lines	Linear and Digital IC Applications	(Open Elective-I) Database Management Systems
COMPUTER SCIENCE AND ENGINEERING (05-CSE)	Fundamentals of Management	Design and Analysis of Algorithms (Substitute subject: Operating Systems)	Software Engineering	Data Communication and Computer Networks	(Open Elective-I) Disaster Management

Officer Incharge
Examination Branch (C3

RITS, Noisember

Principal

Balaji Institute of Technology & Science
Lakriepally (V), Narsampet (M)

Warangal (Dt) - 506 331 (T.S)

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Balaji Institute of Tech & Science LAKNEES - January and American



#### **BALAJI INSTITUTE OF TECHNOLOGY & SCIENCE**

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING SYLLABUS COVERAGE As Per Lecture Schedule) 2019-20 (I Sem) Date: 29-10-2019

				II ECE - A				
S.N o	Subject Name	Name of the Faculty	No. of Classes Handled	Syllabus Covered	Signature	No. of Classes Handled	Syllabus Covered	Signature
1	EDC	Dr.N.Venu/Mr.Karthik Kuamar	58	32 units completed	10	58	4 units completed	Har
2	NATL	Mr.M.Sandeep Rao/Mrs.E.Padmaja	SK	3 units completed	製	73	3 units completed	-( ह)
3	S&S	Mrs.K.Manasa/Mr.M.Sandeep Rao	15 AS: 75011 HON	3 vnils worpheled	101	84	4th 2011 Completed	
4	PTSP	Mr.P.Kiran Kumar	69,	4 hunit 50% completed	PW	83	4thunit 50% competed	(W)
5	DSD	Mrs.K.Manasa/Ms.S.Mounika	80	4th unit 251. completed	W	75	4th unit storiter	Souther .
6	EDC LAB	Mr.K.Radha Krishna/Mr.V.Karthik	B-1 B-2	3-1 -> 7 completed	Marcy	14/148	DI-8 3x 2 Conflicted	· · •
7	DSD LAB	Mrs.K.Manasa	12 KB 10X3	10 experiments 3 complete	18-1 8-2 tox3 11x3	• 1	10 experiments completed	m
8	BS LAB	Mr.A.Sanyasi Rao/Mrs.E.Padmaja	11X3 12X3	B-1 > 13 Experiments Complete B-2 > 15 Experiments Complete	Cooler	1183	B7 - B experiments completed	(E)
S. No	Subject Name	Name of the Faculty	No. of Classes Handled	. III ECE - A' Syllabus Covered	Signature	No. of Classes	III ECE - B Syliabus Covered	Signature
NO	Name		Handled	Market Control of the		Handled		
1	EMTL	Mr.M. Devsingh/Mr.P.Kiran Kumar	52	3rd Unit 90% completed	1 Denie	-59	4thunet 50% completed	(MA)
2	LDIC	Dr.N.Venu/Mr.B.Nagaraju	53	3 unit Completed	6	69	4th unit 50% completed	Region -
3	DC	Mr.A.Sanyasi Rao	66	un 80 completed	100	60	uth unit your completed	20
4	FOM	Mrs.J.Karuna Sree	49	4 unit Completed.	Cont	50	5th unit 50% Completed	Wy
5	DBMS	Mr.P.Rajesh/Mrs.Hymavathi	42	GUNIT 25% COMPLIES.	PR-1756	52	the most completed	100
6	PE	Mrs.J.Karuna Sree		I with 25% Complet	Out		15 Unit 25% Completed	Month
7	LDIC LAB	Dr.N.Venu/Mr.B.Nagaraju	11 Labs (B1) 08 Labs (B2)	11 Experiments completed	Dogwi	10 (B2)	11 Experiments completed	Dogan
8	DICA LAB	Ms.Rubeena/Mr.K.Srikanth	7x3=21 10x1	B-1 -> 8 Exp completed B-2 -> 11 EXP completed	all	BI: 1(X3+33	-12 Experiment Completed	Start
9	DC LAB	Mr.K.Pradeep/Mrs.B.Mounika	B3:- 1973-36	82 > 14 Exp ampleted.	Conduct	81:9×3 82:10×3	-12 Experiments Completed -12 Exp Completed	Sololog
10	DBMS LAB	Mr.P.Rajesh/Mrs.S.Hymavathi	36	-> 12-40 complete	Br-rig	1 49	_ 4th wint 50%. completed	mit.

I/C. Syllabus Coverage Mr. M.Sandeep Rao O. Tradellane

Bulgii Institute of Technology & Science Lakdepally (V), Narsampet (M) Warangal (Dt) - 506 331 (T.5) Head, Dept. of ECE Dr. R. Mohan Das

## **BALAJI INSTITUTE OF TECHNOLOGY & SCIENCE**

# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING SYLLABUS COVERAGE As Per Lecture Schedule) 2019-20 (I Sem) Date: 29-10-2019

		Al .		IV ECE - A	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100		
S. No	Subject Name	Name of the Faculty	No. of Classes Handled	Syllabus Covered	Signature	No. of Classes Handled	Syllabus Covered	Signature
1	MWE	Mr.K.Pradeep/ Mr.M.Sandeep Rao	1142=33.	commence		1242	800 A 2nd wait completed	ACC I
2	VLSI	Mrs.E.Padmaja/Ms.Rubeena	61	80% of 4th unit complete	<b>P</b> -	49	30% of IV unit completed	Rubas
3	CN	Ms.G.Manasa / Mr.K.Pradeep	66	3 units completed	harvey	49	Would Fox. Completed	pareley h
4	RS	Dr.R.Mohan Das	47	20% of 4th Unit	SE SE	,52	IV unit 80%.	- Some
5	AI	Mr.K.Radha Krishna	54	4 unit 30.1. Completed	del	54	Elt with 30%-Completed	Agy .
6	MWE LAB	Mr.K.Pradeep/Mr.M.Sandeep Rao	155	IV wuit 40%. Completed	proley	10/8=	o 11 Expresiment commes	Ord
	VLSLLAB	Mr.P.Kiran Kumar/Mrs.E.Padmaja	36	B-1 11 execompleted B-2-10 exp. Complete	D CO	36	B-1 11 exp completed B-2 10 exp completed	<b>1</b>

I/C. Syllabus Coverage Mr. M.Sandeep Rao

Head, Dept. of ECE epartment,
Dr. R. Mohan Das Comm. Engger
Electronics Das Comm. Engger
BITS, Laknepally 508, 331

Principal

Balaji Institute of Technology & Science Lakriepally (V), Narsampet (M) Warangal (Dt) - 506 331 (T.S)