

Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)
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Approved by AICTE

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XXXV Academic Council - Annexure 2.10

Date: 23/05/2022

Department of Electronics and Communication Engineering

Minutes of 22nd Board of Studies Meeting

The Department BOS Meeting held on May 23rd 2022 through Online Mode from 11.00 AM onwards.

Following members are present

- 1. Dr. M. Suman, Professor & HoD, BoS Chair
- 2. Dr. Vinay Kumar Mittal, Professor and Dept. Chair, Member
- 3. Dr. L. Koteswara Rao, Professor & Principal, KLH, Member
- 4. Dr. M. Goutham, Assoc. Professor, HOD-ECE, KLH, Member
- 5. Dr. Habibullah Khan, Professor & Dean Student Affairs, Member
- 6. Dr. V Rajesh, Professor & Dean P & D, Member
- 7. Dr. K.Sarat Kumar, Professor, Member
- 8. Dr. A.S.C.S.Sastry, Professor & COE, Member
- 9. Dr. K.Ch.Sri Kavya, Professor, Member
- 10. Dr. M Venkata Narayana, Professor & DHOD, Member
- 11. Dr. Madhukar Deshmukh, Professor & DHOD, Member
- 12. Dr. Lakshman Pappula, Assoc. Professor & DHOD, Member
- 13. Dr. I.Govardhani, Professor & RPAC, Member
- 14. Dr. M.Siva Ganga Prasad, Professor & HOD ECM, Member
- 15. Dr. P. Satya Srinivas Babu, Professor, Member
- 16. Dr. P Satyanarayana, Professor, Member
- 17. Dr. PVV Kishore, Professor, Member
- 18. Dr. M Sridhar, Professor, HOD-BES, Member
- 19. Dr. S Koteswara rao, Professor, Member
- 20. Dr. G V Subbarao, Professor & RPAC, Member
- 21. Dr. M Venugopal Rao Professor & Assoc. Dean IQAC, Member
- 22. Dr. BTP Madhav, Professor & Assoc. Dean R&D, Member
- 23. Dr. D Venkat Ratnam, Professor, Member
- 24. Dr. K Srinivas Rao, Professor, Member
- 25. Dr. K Kumar Naik, Professor, Member
- 26. Dr. V. S. V. Prabhakar, Professor & Director IC, Member
- 27. Dr. K.S.Ramesh, Professor, Member
- 28. Dr. K.Hari Kishore, Professor & Assoc, Dean, Member
- 29. Dr. Md.Z Rehman, Professor, Member
- 30. Dr. P.Pardhasaradhi, Professor, Member
- 31. Dr. B.Polaiah, Professor, Member
- 32. Dr. Fazal Noorbasha, Assoc. Professor & Assoc. Dean, Member
- 33. Dr. Arun Metha, Assoc. Professor, Member
- 34. Dr. M. Ravi Kumar, Asst. Professor, Member

Following member is absent

Dr.M. SUMAN Professor & Head Professor & Head Department of ECE Department of ECE Organ Fields, Vaddeswaran. Organ Fields, Vaddeswaran.



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Nil

AGENDA and RESOLUTIONS

AGENDA ITEM - 1

Approval of DAC minutes of meeting

Resolution Passed

The minutes of the DAC meeting held on 21-05-2022 were discussed among the members. The minutes were approved.

[Annexure I]

AGENDA ITEM - 2

Discussion on feedback analysis and action taken report.

Resolution Passed

BOS Members discussed the recommendations from the DAC minutes and the status is given in the Annexure II.

[Annexure II]

AGENDA ITEM - 3

Approval of Course and Semester Structure for Y22 Regulation

Resolution Passed

- All the BoS members approved the Y22 course and semester structure, as per the AICTE guidelines and it is forwarded to Dean Academics for further approval.
- The members approved the list of Flexi core courses, professional electives

[Annexure III & IV]

AGENDA ITEM - 4

Approval of Y22 Advanced (Honors) and Minor Courses for Y22

Resolution Passed

- Regulation
 - All the BoS members approved the Y22 Honors and Minor course structure, as per the university guidelines and it is forwarded to Dean Academics for further approval.
 - The members approved the list of honor and minor courses.
 - Introduced two new minor courses on space technologies and electronics and communication. All
 the BoS members approved the newly introduced minor courses.

[Annexure III]

AGENDA ITEM - 5

Approval on menaming the title of specialization "Signal Processing" as "Machine Learning and Digital Media Processing" in Y20 and Y21

Resolution Passed

All the BoS members approved the renaming of the title of specialization "Signal Processing" as "Machine Learning and Digital Media Processing" in Y20 and Y21 and it is forwarded to Dean Academics for further approval.

Dr. M. SUMAR Professor & Head Professor & Head Department of ECE Department of ECE W. L. E. F. Green Fields, Vaddeswaran. Green Fields, P. PIN. 522 507 Cuntur Dist., A.P. PIN. 522 507



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AGENDA ITEM - 6

Approval on Y22 Employability, Entrepreneurship, Skill Development	Resolution Passed
Courses	

Employability, Entrepreneurship, Skill (EES) Development based Y22 regulations courses are presented to BoS members and all the BoS members approved the ESS based Y22 structure

[Annexure III]

AGENDA ITEM - 7

41	
Approval Work-in lieu courses proposal	Resolution Passed

All the BoS members approved the work-in lieu proposal for the fast learners, and it is forwarded to Dean Academics for further approval.

Course Code	Course Name	Name of the Industry
21EC3063	VLSI Subsystem Design and Design for Testability	Tessolve Semiconductor Pvt. Ltd.,
21EC3064	ASIC & FPGA Chip Design	Tessolve Semiconductor Pvt. Ltd.,
21EC3062	Analog VLSI Design	Entuple Technologies Pvt. Ltd.,
21EC3052	Embedded Systems for IoT	Tessolve Semiconductor Pvt. Ltd., C-DAC, Bangalore
21EC3053	Embedded and Real-time systems	C-DAC, Bangalore

AGENDA ITEM - 8

To revise the syllabus for the courses of B. Tech ECE 2020-21 admitted	Resolution Passed
batch based on the stakeholder feedback.	

Resolved to approve the modifications of syllabus for the B.Tech. ECE elective course offered in AY 2020-21 odd and Even semester for 3rd year student.

Based on the feedback received from Mr. Raghu Agira, Pike Corporation, specialization elective courses "20EC4051: Information Theory & Coding" is revised for B.Tech. (ECE) with added the topic "Transmission of Random variable through LTI System, Miscellaneous: Error Types, Burst/Random Error". Information theory and coding are closely tied to advancements in communication systems, data storage, and information processing technologies. Updating the syllabus ensures that students are exposed to the latest algorithms, coding techniques, and protocols relevant to modern communication systems.

Based on the feedback received from Dr. V. Rajesh, Professor, KLEF, specialization elective courses "20EC4065: IP Multimedia Sub-System & Emerging Technologies" is revised for B. Tech (ECE) with added the topic "Next Generation Networks, Trends of IPM based Mobile Phones- Personal Digital Assistants (PDAS)". The field of IP Multimedia Sub-System and emerging technologies is dynamic, with rapid advancements occurring in areas such as telecommunications, networking, and

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multimedia. Updating the syllabus allows for the inclusion of the latest technologies, protocols, and standards to reflect the current state of the industry.

- Based on the feedback received from Dr. Anil Vuppala, Asst. Prof., IIIT Hyderabad specialization elective courses "20EC3081: Speech Signal Processing" is revised for B.Tech. (ECE) with added the topic "CNN for Automatic speech and speaker recognition". The field of speech signal processing is continuously evolving, with ongoing advancements in signal processing algorithms, machine learning techniques, and hardware. Updating the syllabus ensures that students are exposed to the latest technologies and methodologies, preparing them for contemporary challenges in the field.
- Based on the feedback received from Dr. Sakthivel Kogularasu, Assistant professor, National Cheng Kung University, Taiwan, specialization elective courses "20EC4064: Cloud-Computing & Network Security" is revised for B.Tech. (ECE) with added the topic "Web-DNS Security: Overview of DNS, Fundamentals of DNS, DNS Transactions". The field of cloud computing is continuously evolving with the introduction of new technologies, services, and deployment models. Modifying the syllabus allows for the inclusion of the latest advancements, ensuring that students are exposed to cutting-edge tools and practices in cloud computing.
- Based on the feedback received from Dr. Anil Vuppala, Asst. Prof., IIIT Hyderabad, specialization elective courses "20EC4082: Natural Language Processing & Applications" is revised for B.Tech. (ECE) with added the topic "Sequence-to-sequence models and attention. Text Classification Application pipeline building." Natural Language Processing (NLP) is a rapidly evolving field, with continuous advancements in machine learning, deep learning, and natural language understanding. Updating the syllabus allows students to be exposed to the latest techniques, models, and tools used in NLP, ensuring that they are well-prepared for the current state of the industry.
- ▶ Based on the feedback received from Dr. Anil Vuppala, Asst. Prof., IIIT Hyderabad, specialization elective courses "20EC4062: VOIP and Broadband Networks" is revised for B.Tech. (ECE) with added the topic "Trends in Broadband Services, Optical Broadband services, Fiber to neighbourhood (FTTX) Architecture". Telecommunications and networking technologies are rapidly evolving. Updates to the syllabus can ensure that students are exposed to the latest developments in Voice over Internet Protocol (VOIP) and broadband networks, including new protocols, standards, and emerging technologies such as 5G.
- Based on the feedback received from Mr. N. Venkateswara Rao, Director, Vazhraa Nirmaan Prathik, Hyderabad, Telangana open elective courses "OEEC0011: Image Processing" is revised for B.Tech. (ECE) with added the topic "The Haar Transform, and Slant Transform, Sharpening Frequency Domain Filters". The applications of image processing are expanding into new areas such as healthcare, autonomous vehicles, augmented reality, and more. Modifying the syllabus enables the inclusion of topics related to these emerging applications, providing students with a broader and more relevant skill set.

	S. No.	Course Code	Course Title	% of syllabus revised	Year of offering
	1.	20EC3081	SPEECH SIGNAL PROCESSING	50	3 rd (II Sem)
10	2.	20EC4051	INFORMATION THEORY & CODING	25	3 rd (II Sem)
Bi inger Somet Learn	3.	20EC4062 5	VOIP SYSTEMS & BROAD BAND NETWORKS	25	3 rd (II Sem)
- 900 and - 1	4.	20EC4064	CLOUD-COMPUTING & NETWORK-SECURITY	25	3 rd (II Sem)
er	5.	20EC4065	IP MULTIMEDIA SUB-SYSTEM & EMERGING TECHNOLOGIES	25	4 th (1 st Sem)





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6,	20EC4082	NATURAL LANGUAGE PROCESSING & APPLICATIONS	25	3 rd (I Sem)
7.	OEEC0011	IMAGE PROCESSING	25	4 th (1 st Sem)

The detailed syllabus is shown in Annexure V.

[Annexure-V]

AGENDA ITEM - 9

Approval of Value-Added Courses.	Resolution Passed
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Resolved to approve the value-added courses

[Annexure VI]

AGENDA ITEM - 10

Recommendation to approve BOS minutes in Academic Council.	Resolution Passed
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The members had a brainstorming discussion and interaction among themselves. Based on the suggestions given by the members, BoS resolved to recommend the following to the Academic Council for further approval.

AGENDA ITEM - 11

Any other matter Resolution Passed	Any other matter	Resolution Passed
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- 1. Dr. Anil Kumar, suggested to introduce more skill-based courses in M. Tech VLSI specialization.
- 2. Suggested to offered Block Chain and Cyber Security under ESS8 and ESS6.
- 3. Suggested M. Tech. course structure: five courses with two laboratories.



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Annexure I **DAC Minutes**

Annexure II

Stakeholder Feedback Analysis

Sl.No.	Name of the resource person	Designation & Affiliation	Recommendation on Curriculum during DAC meeting	Approval by Remark BOS committee	KS
		Stude	- W		
1.	Mr. Jammula Eswar	190040621, Student, KLEF, Vijayawada	suggested to include some more topics of Image Processing for Bio Medical Applications in the course IMAGE PROCESSING	Approved	
		Alun	ıni		
2.	Mr. Raghu Agira,	Pike Corporation, Director of Information Technology, 4721 Hargrove Road, Raleigh, NC	recommended to do some modifications in the syllabus of INFORMATION THEORY & CODING by adding coding projects and applications	Approved	
3.	Mr. N. Venkateswarao,	Director, Vazhraa Nirmaan Prathik, Hyderabad, Telangana	recommended to add applications on Speech Signal Processing in the course-SPEECH SIGNAL PROCESSING	Approved	
		Industry I			
4.		Associate Director, CDAC, Bengaluru	suggested to include a course on CLOUD ARCHITECTURE IN IOT which covers the basics of	Approved	4
5.	Dr. Sakthivel Kogularasu,	Research Assistant professor, National Cheng	recommended to add CLOUD-COMPUTING & NETWORK	Approved	

Professor & Head
Professor & Head
Professor & Head
Professor & FECE
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		Kung University, Taiwan	SECURITY in the curriculum	
		Academic	Peers	
6.	Dr. Anil Vuppala,	Asst. Prof., IIIT Hyderabad	recommended to include a course on NATURAL	Approved
			LANGUAGE PROCESSING & APPLICATIONS	
7.	Dr. Anil Vuppala,	Asst. Prof., IIIT Hyderabad	recommended to include a course on VOIP SYSTEMS & BROAD BAND NETWORKS in the curriculum	Approved
		Facu	lty	11
8.	Dr. V. Rajesh	Professor, Emp ID: 2979, KLEF,	Recommended to add syllabus new technology and	Approved
		Vijayawada	mobile network in IP MULTIMEDIA SUB-SYSTEM &	
			EMERGING TECHNOLOGIES	

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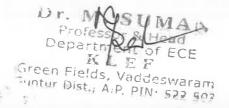
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Annexure III

Y22 Course structure of B. Tech.

		DEPARTMENT OF ELEC	TRONI	CS A	ND C	OMM	UNIC	ATION ENGIN	NEERING			
	, 7	Y22 REGUL	ATION	B. TE	сн с	COUR	SE ST	RUCTURE			1	
SI No	Course Code	Course Title	L	Т	P	S	Cr	Pre-Req.	Activities / Content with direct bearing on Employability / Entrepreneur ship/ Skill development	Course Category	New Course (Yes/No)	Remarks
		Total	BA	SIC S	SCIEN	ICES		1	r	Practice		ĺ
1	22MT1101	MATHEMATICS FOR COMPUTING	2	2	0	2	4.5	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	based learning, Problem Solving	No	
2	22UC1203	DESIGN THINKING AND INNOVATION	1	0	0	4	2	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No	
3	22PH1008	SCIENCE ELECTIVE -1 (PHYSICS FOR ELECTRONIC ENGINEERS)	3	0	2	0	4	NIL	EMPLOYABIL ITY	Practice based learning	No	
4	22MT2007	RANDOM VARIABLES AND STOCHASTIC PROCESSES	2	2	0	0	4	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No	





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5	22MT2006	OPTIMIZATION IN ENGINEERING	2	2	0	0	4	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
6	22CY1001	SCIENCE ELECTIVE-2 (ENGINEERING CHEMISTRY)	3	0	2	0	4	NIL	EMPLOYABIL ITY	Practice based learning	No
7	22MT2202	MATHEMATICS FOR ENGINEERS	2	1	0	0	3	NIL	EMPLOYABIL ITY	Practice based learning	No
			ENGIN	EERI	NG S	CIEN	CES				
8	22SC1101	COMPUTATIONAL THINKING FOR STRUCTURE DESIGN	3	0	2	6	5.5	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
9	22ME1103	DESIGN TOOLS WORKSHOP	0	0	4	0	2	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
10	22EC1101	DIGITAL LOGIC AND PROCESSORS	3	0	2	0	4	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
11	22SC1209	-IOT WORKSHOP	0	0	4	0	2	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
12	22SC1202	DATA STRUCTURES	3	0	2	4	5	CTSD	EMPLOYABIL ITY / SKILL	Practice based	No



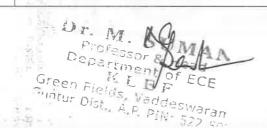


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		PCT							DEVELOPME NT	learning, Problem Solving	
13	22EC1202	COMPUTER ORGANIZATION AND ARCHITECTURE	2	0	0	0	2	NIL	EMPLOYABIL ITY	Practice based learning	No
14	22UC3108	PROBLEM SOLVING AND REASONING SKILLS - 1	0	0	0	4	1	NIL	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
15	22UC3209	PROBLEM SOLVING AND REASONING SKILLS - 2	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
16	22EC1203	DESIGN OF BASIC ELECTRONIC CIRCUITS	3	0	0	0	3	NIL	EMPLOYABIL ITY	Practice based learning	No
		HUMA	ANITH	ES &	SOCI	AL SO	CIENC	CES			
17	22ÚC1101	INTEGRATED PROFESSIONAL ENGLISH	0	0	4	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
18	22UC1202	ENGLISH PROFICIENCY	0	0	4	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
19	22UC2103	ESSENTIALS SKILLS FOR EMPLOYABILITY	0	0	4	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
20	22UC2204	CORPORATE READINESS SKILLS	0	0	4	0	2	NIL	ENTREPRENE URSHIP	Case Studies	No





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	- 21									based learning	
21 =	22UC0021	SOCIAL IMMERSIVE LEARNING - 1	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No -
22	22UC0022 ⁵	SOCIAL IMMERSIVE LEARNING - 2	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
23	22UC0023	SOCIAL IMMERSIVE LEARNING - 3	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
24	22UC0024	SOCIAL IMMERSIVE LEARNING - 4	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
25	22UC0025	SOCIAL IMMERSIVE LEARNING - 5	0	0	0	4	1	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
26		MANAGEMENT ELECTIVE	2	0	0	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
27	18	FOREIGN LANGUAGE ELECTIVE	2	0	0	0	2	NIL	ENTREPRENE URSHIP	Case Studies	No

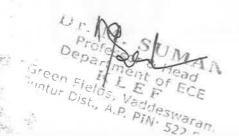
SUMAN Professor & Head Pepartment of ECE ----

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		484.516								based learning	
28		INNOVATION MANAGEMENT	0	0	4	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
29	22UC0010	UNIVERSAL HUMAN VALUES AND PROFESSIONAL ETHICS	2	0	0	0	2	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
		PRO	FESSI	ONA	L CO	RE CC	URSE	ES			
30	22EC2104	ANALOG ELECTRONIC CIRCUIT DESIGN	3	0	2	2	4.5	BEEC	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
31	22EC2105-	SIGNALS AND COMMUNICATION SYSTEMS	3	0	0	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No
32	22EC2106	PROCESSORS AND CONTROLLERS	3	0	2	2	4.5	DDCA	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
33	22AD2001	DATA DRIVEN ARTIFICIAL INTELLIGENT SYSTEMS	2	0	2	0	3	CTSD	EMPLOYABIL ITY	Practice based learning	No
34	22EC2209	ELECTOMAGNETIC WAVES AND TRANSMISSION LINES	3	0	0	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No





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35	22EC2208	DIGITAL COMMUNICATION	3	0	2	2	4.5	SCS	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
36	22EC2210	NETWORK PROTOCOLS AND SECURITY	3	0	2	0	4	DDCA	EMPLOYABIL ITY	Practice based learning	No
37	22EC2211	VLSI DESIGN	3	0	2	2	4.5	AECD	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
38	22EC3107	OBJECT ORIENTED PROGRAMMING	3	0	2	0	4	CTSD	EMPLOYABIL ITY	Practice based learning	No
39	22EC3112	DISCRETE TIME SIGNAL PROCESSING	3	0	2	0	4	DC	EMPLOYABIL ITY	Practice based learning	No
				FLEX	I-CO	RE					
40		FLEXI CORE-1	2	0	2	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No
41		FLEXI CORE-2	2	0	2	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No
42		FLEXI CORE-3	2	0	2	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No
43	22EE3107	CONTROL SYSTEMS	3	0	0	0	3	BEEC	EMPLOYABIL ITY	Practice based learning	No



Green Fields, Vaddeswarers Suntur Dist., A.P. PIN: 522



Green Fields, Jaddeswaran, PIN 522 50

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		PF	ROFES	SION	AL E	LECT	IVES				
44		PROFESSIONAL ELECTIVE-1	2	0	2	4	4	RELEVENT COURSE	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
45		PROFESSIONAL ELECTIVE-2	2	0	2	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	Yes (Highlight ed)
46		PROFESSIONAL ELECTIVE-3	2	0	2	4	4	RELEVENT COURSE	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	Yes (Highlight ed)
47		PROFESSIONAL ELECTIVE-4 (M)	3	0	0	0	3	RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	Yes (Highlight ed)
48		PROFESSIONAL ELECTIVE-5 (SPEC/HONR)	2	0	2	0		RELEVENT COURSE	EMPLOYABIL ITY	Practice based learning	No
		77	ERM I	PAPE	R & 1	PROJI	ECT				
49	22IE3041	TECHNICAL INTERNSHIP	0	0	0	8	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
50	22IE2040	SOCIAL INTERNSHIP	0	0	0	4	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning,	No



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										Problem Solving	
51	22IE4042	INDUSTRY INTERNSHIP	0	0	0	4	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
52	22IE3043	TERM PAPER	0	0	2	4	2	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
53	22IE4048	CAPSTONE PROJECT-1	0	0	0	24	6	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
54	22IE4150/ 22IE4051	PRACTICE SCHOOL/INTERNSHIP-I	0	0	0			NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
55	22IE4049	CAPSTONE PROJECT-2	0	0	0	24	6	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
56	22IE4150/22 IE4052	PRACTICE SCHOOL/INTERNSHIP-II	0	0	0			NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
		1 H H H	SKI	LLIN	G CO	URSE	S				





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63	4 -	VALUE ADDED COURSE -1	0	0	0	8	0	NIL	EMPLOYABIL ITY/SKILL	Practice based learning,	No
		PE	VALUE	ADI	ED (COUR	SES				
62	22TBEC02	TOOL BASED LEARNING -2	0	0	0	4	0	NIL	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
61	22TBEC01	TOOL BASED LEARNING -1	0	0	0	4	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
60	22SDEC04	SKILL DEVELOPMENT PROJ ECT - 4 (SPECIALIZATION ORIENTED SKILLING)	0	0	2	4		NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
59	22SDEC03	SKILL DEVELOPMENT PROJ ECT - 3 (SPECIALIZATION ORIENTED SKILLING)	0	0	2	4	2	NIL	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
58	22SDEC02	SKILL DEVELOPMENT PROJ ECT - 2 (Electronic System Automation)	0	0	2	4	2	NIL	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
57	22SDEC01	SKILL DEVELOPMENT PROJECT - 1 (ELECTRONIC SYSTEM DESIGN WORKSHOP)	0	0	2	4	2	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No



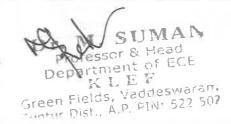


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	4.81 ×	Al	UDIT	COU	RSES					
70	OPEN ELECTIVE-3	3	0	0	0	3	NIL	EMPLOYABIL ITY	Practice based learning	No
69	OPÉN ELECTIVE-2	3	0	0	0	3	NIL	EMPLOYABIL ITY	Practice based learning	No
58	OPEN ELECTIVE-1	3	0	0	0	3	NIL	EMPLOYABIL ITY	Practice based learning	No
	(1) 产。 (1)	OP	EN E	LECT	IVES					
67	SPORTS / YOGA CERTIFICATION	0	0	0	8	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
66	VÁLUE ADDED COURSE - 4 (HONOR)	0	0	0	8	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
55	VALUE ADDED COURSE -3	0	0	0	8	0	NIL	EMPLOYABIL ITY / SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
54	VALUE ADDED COURSE -2	0	0	0	8	0	NIL	EMPLOYABIL ITY/SKILL DEVELOPME NT	Practice based learning, Problem Solving	No
	· 有生							DEVELOPME NT	Problem Solving	



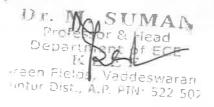


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72	22UC0006	AUDIT COURSE - 2(ESSENCE OF INDIAN KNOWLDGE TRADITION)	2	0	0	0	0	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
73	22UC0008	AUDIT COURSE - 3 (INDIAN CONSTITUTION)	2	0	0	0	0	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
74	22UC0007	AUDIT COURSE - 4 (ECOLOGY and ENVIRONMENT)	2	0	0	0	0	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
75	22UC0020	AUDIT COURSE - 5 (INDIAN KNOWLEDGE SYSTEMS - ENGINEERING ELECTIVE)	2	0	0	0	0	NIL	ENTREPRENE URSHIP	Case Studies based learning	No
		Total Credits	101	7	78	192	166				

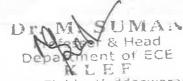
Spec	alisation wise Courses for Y22 Regulation		
SPECIALIZATIONS	B. Tech Honors with Spec.	B. Tech Spec.	B. Tech Honors, Minors, B.Tech Regular, Honors with Minor
	EMBEDDED SYSTEMS & IoT		





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SI No	_Category- PC, FC, PE	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
1	FC - 1	22EC2015	Embedded System Design	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
2	FC,	22EC3015	Wireless Sensor Networks	R/P	2_	0	2	0	3	2	0	2	0	3 1	2	0	2	0	3
3	PB1	22EC3051	Advanced Embedded Systems	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
4	PE-2	22EC3052	Embedded Systems for IoT	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
5	PE-3	22EC3053	Embedded and Real-time systems	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
6	PE-4	22EC3054	Cloud Architecture in IoT	M	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
7	PE-5	22EC3055	Edge Computing & Data Analytics in IoT	R	2	0	2	0	3	2	0	2	0	3					
				LSI															
Sl No	Category- PC, FC, PE	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	s	Cr
1	FC - 1	22EC2016	Digital VLSI Design	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	_3
2	FC	22EC3016	Low Power VLSI Circuits	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
3	FC	22EC3017	ASIC and FPGA Design	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
4	PE-1	22EC3063	Analog VLSI Design	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
5	PE-2	22EC3064	Testing and Verification of VLSI Circuits	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
6	PE-3	22EC3066	VLSI Physical Design Automation	M	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
7	PE-4	22EC3065	System-on-Chip	R	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
8	PE-5	22EC3067	Mixed Signal IC Design	R	2	0	2	0	3	2	0	2	0	3					
	** W.S		ROBOTICS &	AUTO	MAT	TIO	V						_					_	
SI No	Category-	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr



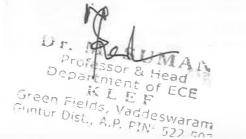
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230																		
FC÷9	:22EC2017	Introduction to Robotics	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
FC	22EC3018	Electronics Instruments & Automation	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
FC	22EC3026	Control Systems	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-1	22EC3071	Autonomous mobile Robot systems	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-2	22EC3072	Autonomous Vehicles & Automotive Electronics	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-3	22EC3073	Advanced Robotics	M	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-4	22EC3074	Human Machine Interface & Brain Machine Interface	R	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
PE-5	22EC3075	Computer Vision & Applications	R	2	0	2	0	3	2	0	2	0	3					
		INTELLIGENT MUL	TI MED	IA P	RO	CESS	SING											
Category- PC, FC, PE	Course Code	Course Title	Mode	L	T	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
FC-1	22EC2018	Deep Network Architectures	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
FC	22EC3019	Deep learning for computer vision applications	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-1	22EC3081	Natural Language Processing & Applications	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-2	22EC3082	Data Engineering	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-3	22EC3083	Bio medical Signal and Image Analysis	R	3	0	4	4_	6	2	0	2	4	4	2	0	2	4	4
PE-4	22EC3084	Data Visualization	M	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
PÉ-5	22EC3085	Multimedia processing	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
1. 肾能力	22EC3086	Introduction to quantum computing												2	0	2	0	3
2.5	22EC3087	Full Stack Development												2	0	2	0	3
	FC	FC-3 22EC2017 FC 22EC3018 FC 22EC3026 PE-1 22EC3071 PE-2 22EC3072 PE-3 22EC3073 PE-4 22EC3074 PE-5 22EC3075 Category-PC, FC, PE Code FC-1 22EC2018 FC 22EC3019 PE-1 22EC3081 PE-2 22EC3082 PE-3 22EC3083 PE-4 22EC3084 PE-5 22EC3086	FC-2 22EC3018 Electronics Instruments & Automation FC 22EC3026 Control Systems PE-1 22EC3071 Autonomous mobile Robot systems Autonomous Vehicles & Automotive Electronics PE-2 22EC3072 Electronics PE-3 22EC3073 Advanced Robotics Human Machine Interface & Brain Machine Interface PE-5 22EC3075 Computer Vision & Applications INTELLIGENT MUL Category- PC, FC, PE Code Course Title FC-1 22EC3019 Deep Network Architectures Deep learning for computer vision applications Natural Language Processing & Applications PE-2 22EC3081 Applications PE-3 22EC3082 Data Engineering PE-4 22EC3084 Data Visualization PE-5 22EC3085 Multimedia processing 22EC3086 Introduction to quantum computing 22EC3087 Full Stack Development	FC+3	PC-3 22EC2017 Introduction to Robotics R/P 2	PC1	PC	FC 3 22EC2017 Introduction to Robotics R/P 2 0 2 0	FC 22EC2017 Introduction to Robotics R/P 2 0 2 0 3	FC	FC	FC-3 22EC2017 Introduction to Robotics R/P 2 0 2 0 3 2 0 2	FC-3 22EC2017 Introduction to Robotics R/P 2 0 2 0 3 2 0 2 0 E C C C C C C C C C	FC-3 22EC2017 Introduction to Robotics R/P 2 0 2 0 3 2 0 2 0 3 3 2 0 2 0 3 3 3 5 0 2 0 3 3 5 5 5 5 5 5 5 5	FC	FC	FC S 22EC2017	FC 3





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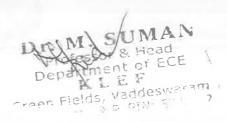
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FC!-1	22EC2019		Mode	L	T	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
FC		Radiating Systems & Wave Propagation	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
	22EC3018	RF System Design	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-1	22EC3091	Microwave Engineering	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-2	22EC3092	Advanced Antenna Design for wireless and 5G applications	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-3	22EC3093	Modern Radar systems & Navigational Aids	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-4	22EC3094	RF and millimeter-Wave Circuit Design	M	4	0	0	0	4	3	0_	0	0	3	3	0	_0_	0	3
PE-5	22EC3095	Satellite Design	R	2	0	2	0	3	2	0	_2	0	3					
		DATA COM	MUNIC.	ATIC	ONS													
Category- PC, FC, PE	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
EC-1	22EC2020	Wireless Communications	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
FG-2	22EC3021	Radio Wave Propagation	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-1	22EC4051	4G Wireless Technologies and Cellular Communication	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-2	22EC4052	Modern Satellite Communication Systems	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
PE-3	22EC4053	5G Wireless Technologies	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
PE-4	22EC4054	Optical Wireless Communications	M	4_	0	0	0	4	3	0	0	0	3	3	0	0	0	3
PE-5	22EC4055	Machine Learning for Wireless Communication	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
100	PE-3 PE-4 PE-5 Category-PC, FC, PE FC-1 FG-2 RE-1 PE-2 PE-3 PE-3	PE-3 22EC3093 PE-4 22EC3094 PE-5 22EC3095 Category- PC, FC, PE Code FC-1 22EC2020 FC-2 22EC3021 PE-1 22EC4051 PE-3 22EC4053 PE-4 22EC4054	PE-2 22EC3092 and 5G applications Modern Radar systems & Navigational Aids PE-4 22EC3094 RF and millimeter-Wave Circuit Design PE-5 22EC3095 Satellite Design Category- PC, FC, PE Code Course Title FC-1 22EC2020 Wireless Communications FC-2 22EC3021 Radio Wave Propagation 4G Wireless Technologies and Cellular RE-1 22EC4051 Communication Modern Satellite Communication Systems PE-3 22EC4052 Systems PE-4 22EC4054 Optical Wireless Communications Machine Learning for Wireless Communication Machine Learning for Wireless Communication	PE-2 22EC3092 and 5G applications R Modern Radar systems & Navigational R PE-3 22EC3093 Aids R PE-4 22EC3094 RF and millimeter-Wave Circuit Design M PE-5 22EC3095 Satellite Design R Category- PC, FC, PE Code Course Title Mode FC-1 22EC2020 Wireless Communications R/P FC-2 22EC3021 Radio Wave Propagation R 4G Wireless Technologies and Cellular Communication R PE-3 22EC4051 Communication R PE-3 22EC4052 Systems R PE-3 22EC4053 5G Wireless Technologies R PE-4 22EC4054 Optical Wireless Communications M Machine Learning for Wireless Communication R	PE-2 22EC3092 and 5G applications R 2 PE-3 22EC3093 Aids R 3 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 PE-5 22EC3095 Satellite Design R 2 DATA COMMUNICATION Category-PC, FC, PE Code Course Title Mode L FC-1 22EC2020 Wireless Communications R/P 2 FC-2 22EC3021 Radio Wave Propagation R 2 FC-2 22EC4051 Communication R 3 Modern Satellite Communication R 3 Modern Satellite Communication R 2 PE-3 22EC4053 5G Wireless Technologies R 3 PE-4 22EC4054 Optical Wireless Communications M 4 Machine Learning for Wireless Communication R 2	PE-2 22EC3092 and 5G applications R 2 0 PE-3 22EC3093 Aids R 3 0 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 PE-5 22EC3095 Satellite Design R 2 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T FC-1 22EC2020 Wireless Communications R/P 2 0 FC-2 22EC3021 Radio Wave Propagation R 2 0 RE-1 22EC4051 Communication R 3 0 Modern Satellite Communication R 3 0 PE-3 22EC4052 Systems R 2 0 PE-3 22EC4053 5G Wireless Technologies R 3 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 Machine Learning for Wireless <t< td=""><td>PE-2 22EC3092 and 5G applications R 2 0 2 PE-3 22EC3093 Aids R 3 0 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 PE-5 22EC3095 Satellite Design R 2 0 2 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P FC-1 22EC2020 Wireless Communications R/P 2 0 2 FC-2 22EC3021 Radio Wave Propagation R 2 0 2 RE-1 22EC4051 Communication R 3 0 4 PE-2 22EC4052 Systems R 2 0 2 PE-3 22EC4053 5G Wireless Technologies R 3 0 4 PE-4 22EC4054 Optical Wireless Communication M 4 0</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 PE-3 22EC3093 Aids R 3 0 4 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S FC-1 22EC2020 Wireless Communications R/P 2 0 2 0 FC-2 22EC3021 Radio Wave Propagation R 2 0 2 0 RE-1 22EC4051 Communication R 3 0 4 4 Modern Satellite Communication R 2 0 2 0 PE-3 22EC4052 Systems R 2 0 2 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 0 0 <td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 </td><td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 </td><td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-6 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3096 Course Title Mode L T P S Cr L T PE-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 PE-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 PE-1 22EC4051 Communication R 3 0 4 4 6 2 0 PE-2 22EC4052 Signification R 3 0 4 4 6 2 0 PE-3 22EC4053 SG Wireless Technologies R 3 0 4 4 6 2 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 0 0 4 3 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-6 22EC4055 Communication R 2 0 2 0 3 2 0 PE-7 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 </td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 DATA COMMUNICATIONS Category- Code Course Title Mode L T P S Cr L T P FC-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 2 FC-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 2 Wireless Technologies and Ce</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 <t< td=""><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 6 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3</td><td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 4 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 3 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 0 3 3 PE-6 Course Cou</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 2 0 PE-3 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 2 0 2 0 3 3 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S Cr L T P S Cr L T T P S Cr L T T P S Cr L T T P S Cr L<td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 3 0</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 4 4 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 0 0 3 2 0 2 0 3 0</td></td></t<></td></td></t<>	PE-2 22EC3092 and 5G applications R 2 0 2 PE-3 22EC3093 Aids R 3 0 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 PE-5 22EC3095 Satellite Design R 2 0 2 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P FC-1 22EC2020 Wireless Communications R/P 2 0 2 FC-2 22EC3021 Radio Wave Propagation R 2 0 2 RE-1 22EC4051 Communication R 3 0 4 PE-2 22EC4052 Systems R 2 0 2 PE-3 22EC4053 5G Wireless Technologies R 3 0 4 PE-4 22EC4054 Optical Wireless Communication M 4 0	PE-2 22EC3092 and 5G applications R 2 0 2 0 PE-3 22EC3093 Aids R 3 0 4 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S FC-1 22EC2020 Wireless Communications R/P 2 0 2 0 FC-2 22EC3021 Radio Wave Propagation R 2 0 2 0 RE-1 22EC4051 Communication R 3 0 4 4 Modern Satellite Communication R 2 0 2 0 PE-3 22EC4052 Systems R 2 0 2 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 0 0 <td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 </td> <td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 </td> <td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-6 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3096 Course Title Mode L T P S Cr L T PE-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 PE-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 PE-1 22EC4051 Communication R 3 0 4 4 6 2 0 PE-2 22EC4052 Signification R 3 0 4 4 6 2 0 PE-3 22EC4053 SG Wireless Technologies R 3 0 4 4 6 2 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 0 0 4 3 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-6 22EC4055 Communication R 2 0 2 0 3 2 0 PE-7 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 </td> <td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 DATA COMMUNICATIONS Category- Code Course Title Mode L T P S Cr L T P FC-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 2 FC-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 2 Wireless Technologies and Ce</td> <td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 <t< td=""><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 6 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3</td><td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 4 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 3 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 0 3 3 PE-6 Course Cou</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 2 0 PE-3 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 2 0 2 0 3 3 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S Cr L T P S Cr L T T P S Cr L T T P S Cr L T T P S Cr L<td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 3 0</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 4 4 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 0 0 3 2 0 2 0 3 0</td></td></t<></td>	PE-2 22EC3092 and 5G applications R 2 0 2 0 3	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-6 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3095 Satellite Design R 2 0 2 0 3 2 0 PE-7 22EC3096 Course Title Mode L T P S Cr L T PE-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 PE-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 PE-1 22EC4051 Communication R 3 0 4 4 6 2 0 PE-2 22EC4052 Signification R 3 0 4 4 6 2 0 PE-3 22EC4053 SG Wireless Technologies R 3 0 4 4 6 2 0 PE-4 22EC4054 Optical Wireless Communications M 4 0 0 0 4 3 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-5 22EC4055 Communication R 2 0 2 0 3 2 0 PE-6 22EC4055 Communication R 2 0 2 0 3 2 0 PE-7 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-8 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0 3 2 0 PE-9 22EC4055 Communication R 2 0 2 0	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 DATA COMMUNICATIONS Category- Code Course Title Mode L T P S Cr L T P FC-1 22EC2020 Wireless Communications R/P 2 0 2 0 3 2 0 2 FC-1 22EC3021 Radio Wave Propagation R 2 0 2 0 3 2 0 2 Wireless Technologies and Ce	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 <t< td=""><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 6 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3</td><td> PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 4 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 3 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 0 3 3 PE-6 Course Cou</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 2 0 PE-3 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 2 0 2 0 3 3 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S Cr L T P S Cr L T T P S Cr L T T P S Cr L T T P S Cr L<td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 3 0</td><td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 4 4 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 0 0 3 2 0 2 0 3 0</td></td></t<>	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 4 6 2 0 2 4 4 6 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 PE-3 22EC3093 Aids R 3 0 4 4 6 2 0 2 4 4 2 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 3 PE-5 22EC3095 Satellite Design R 2 0 2 0 3 2 0 2 0 3 3 PE-6 Course Cou	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 4 4 2 0 PE-3 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 3 2 0 2 0 3 3 0 DATA COMMUNICATIONS Category-PC, FC, PE Code Course Title Mode L T P S Cr L T P S Cr L T T P S Cr L T T P S Cr L T T P S Cr L <td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 3 0</td> <td>PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 4 4 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 0 0 3 2 0 2 0 3 0</td>	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 3 0	PE-2 22EC3092 and 5G applications R 2 0 2 0 3 2 0 2 0 3 2 0 2 0 3 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 4 4 2 0 2 4 PE-4 22EC3094 RF and millimeter-Wave Circuit Design M 4 0 0 0 4 3 0 0 0 0 0 3 2 0 2 0 3 0

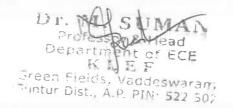




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Sl No	Casegory- PCFFC, PE	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
1	7 FCF1	22EC2021	Communication Networks	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
2	FC-2	22EC3022	Network Security	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
3	FC-2	22EC3023	Peer to Peer Networks	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
4	FC-2	22EC3024	WLAN's	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
5	57 PE-1	22EC4061	TCP/IP & Other Protocol Suite	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
6	PE-2	22EC4062	Cloud Computing and Networks Security	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
7	PE-3	22EC4063	VoIP and Broadband Networks	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
8	PE-4	22EC4064	5G Mobile and IEEE standards	M	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
9	PE-5	22EC4065	IP Multimedia Sub-System & Emerging Technologies	R	2	0	2	0	3	2	0	2	0	3					
10	PE-5	22EC4066	IT Security: Defense against the digital dark arts																
	800 1		BIO-MEDICAL I	NSTRUM	MEN	TA	TION	N						,					
Sl No	Category- PC, FC, PE	Course Code	Course Title	Mode	L	Т	P	S	Cr	L	Т	P	S	Cr	L	Т	P	S	Cr
1	FC-1	22EC2022	Biomedical Electronics & IOT for Healthcare	R/P	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
2	FC-2	22EC3025	Electronic Circuits for Medical Instrumentation	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
3	PE-1	22EC4072	Biomedical Signal and Image Processing	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
4	PE-2	22EC4073	Advanced Biomedical signal processing	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3
* 5	PE-3	22EC4074	Materials for Bio-Medical Applications	R	3	0	4	4	6	2	0	2	4	4	2	0	2	4	4
6	PE-4	22EC4075	Nanotechnology and Nanosensors	M	4	0	0	0	4	3	0	0	0	3	3	0	0	0	3
7	PE-5	22EC4076	Biosensing and Bioelectronics	R	2	0	2	0	3	2	0	2	0	3	2	0	2	0	3





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Percentage of Syllabus Revision = (8/75) * 100 = 10.67 %

Percentage of Courses focusing on Employability = (62/75) * 100 = 82.67 %

Percentage of Courses focusing on Entrepreneurship = (13/75) * 100 = 17.33 %

Percentage of Courses focusing on Skill Development = (40/75) * 100 = 53.33 %

Dr. M. SUMAN

Professor & Head

Professor & Head

Professor & Head

Department of ECE

Department E F

Green Fields, Vaddeswaram



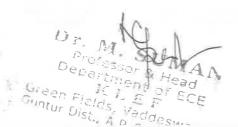
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Annexure IV

Y22 Course structure of M. Tech.

		DEP/	ARTIV	1ENT	OF E	. C. E.				
	Name of the program:	M	. Tec	:h -VI	.SI		for A.Y. :2	22-24	1 2	
Course Code	Course Title	L	Т	P	S	Cr	Activities / Content with direct bearing on Employability / Entrepreneurship/ Skill development	Course Category	New Course (Yes/No)	Remarks
		Pr	ofessi	onal C	ore (F	C)				
22EC5128	MOS CIRCUIT DESIGN	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5128	DIGITAL VLSI DESIGN	3	0	2	0	4	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5130	LOW POWER VLSI SYSTEM DESIGN	3	1	0	0	4	EMPLOYABILITY	Practice based learning	No	
22EC5104	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	3	0	2	0	4	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5232	ANALOG IC DESIGN	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5233	TESTING OF VLSI CIRCUITS	3	1_	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	





in figure

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22EC5234	ALGORITHMS FOR VLSI DESIGN AUTOMATION	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No
22EC5235	ASIC AND FPGA DESIGN	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
	Market Comments	Pro	fessio	nal Ele	ective	PE)			
22EC51Q2	SYSTEM ON CHIP DESIGN	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51R2	INTERNET OF THINGS ARCHITECTURE -AND -PROTOCOLS	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51S4.	MEMORY DESIGN AND TESTING	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51T3	MEMS SYSTEM DESIGN	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
		Skill De	velop	ment (Course	s (SD	C)		
22TS51V1	TECHNICAL SKILLING-I	0	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22TS52V2	TECHNICAL SKILLING-II	0	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
	SIR THE STATE OF T	Pı	roject	Cour	ses (I	R)			
22IE5149	SÉMINAR	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE5250	TERM PAPER	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE6050	PROJECT DISSERTATION-PART-1 AND PART-2	0	0	72	0	36	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No

Dr. M. SUMAN

Professor & Head

Department of ECE

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N. N							
Total							
Credits	36	4	92	16	90		

Percentage of Syllabus Revision = (0/17) * 100 = 0 %

Percentage of Courses focusing on Employability = (17/17) * 100 = 100 %

Percentage of Courses focusing on Entrepreneurship = (0/17) * 100 = 0 %

Percentage of Courses focusing on Skill Development = (10/17) * 100 = 58.82 %

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1 431	8.5	DE	PART	MEN	T OF	E. C.	E.			
au to D	Name of the progra	am:	M. 1	ech-	ОТ		for A.Y. :	22-24	k	
7,57									3	
Course Code	Teles Course Title	L	Т	P	S	Cr	Activities / Content with direct bearing on Employability / Entrepreneurship/ Skill development	Course Category	New Course (Yes/No)	Remarks
			Profes	sional	Core	(PC)				
22EC51R2	INTERNET OF THINGS ARCHITECTURE AND PROTOCOLS	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No	
22IN5101	EMBEDDED CONTROLLERS & SOCS	3	11	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5101	WIRELESS COMMUNUICATION AND DATA NETWORKS	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22EC5104	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No	
22IN5202	WÎRELESS SENSOR NETWORK AND SECURITY	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22IN5203	LOT CLOUD COMPUTING	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No	
22IN5204.	BIG DATA ANALYTICS FOR IOT	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No	
22IN5205	TOT SYSTEM DESIGN TECHNIQUES	3	1	2	0	5	EMPLOYABILITY	Practice based learning	No	

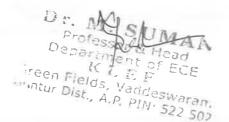




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	75	P	rofess	ional l	Electiv	e (PE)			
22IN51A2	ENERGY HARVESTING TECHNOLOGIES FOR IOT	3	0_	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51B3	COMPUTER VISION & APPLICATIONS	_ 3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22IN51C2	5G NR - NEXT GENERATION WIRELESS TECHNOLOGIES	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51D4	BLOCKCHAIN & CYBER SECURITY	3	0	-0	0	3	EMPLOYABILITY	Practice based learning	No
	1316	Skill	Devel	opmen	t Cou	rses (S	DC)		
22TS5111	TECHNICAL SKILLING-I	0	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22TS52I2	TECHNICAL SKILLING-II	0_	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
			Proje	ct Co	urses	(PR)			
22IE5149	SEMINAR	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE5250	TERM PAPER	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE6050	PROJECT DISSERTATION-PART-1 AND PART-2	0	0	72	0	36	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No





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Total +	The state of the s							
Credits		36	4	92	16	90		

Percentage of Syllabus Revision = (0/17) * 100 = 0 %

Percentage of Courses focusing on Employability = (17/17) * 100 = 100 %

Percentage of Courses focusing on Entrepreneurship = (0/17) * 100 = 0 %

Percentage of Courses focusing on Skill Development = (8/17) * 100 = 47.06 %

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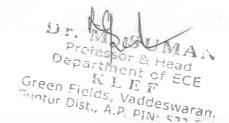
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Name of the program: M. Tech. - Robotics & Automation for A.Y.:22-24

Course Code	Course Title	L	Т	P	S	Cr	Activities / Content with direct bearing on Employability / Entrepreneurship/ Skill development	Course Category	New Course (Yes/No)	Remarks
14 1	Pro	fessio	nal (Core	(PC))				
22RA5141	NON-LINEAR SYSTEMS AND CONTROL OPTIMIZATION FOR ROBOTICS	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No	
22RA5142	ROBOTICS: CYBER PHYSICAL SYSTEMS	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No	
22RA5143	IIOT 4.0 FOR AUTOMATION AND ROBOTIC SYSTEMS	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No	
22EC5104	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No	
22RA5244	ADVANCED ROBOTIC WIRELESS SENSOR NETWORKS	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	- No	
22RA5245	AUTONOMOUS MOBILE ROBOTS AND AUTOMOTIVE ELECTRONICS	3	1	2	0	5	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning,	No	

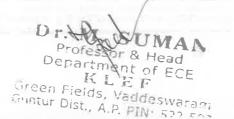




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7	Pro	ject (cour	ses ((PR)				
22TS52A2	TECHNÍCAL SKILLING-II	0	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22TS51A1	TECHNICAL SKILLING-I	0	0	0	8	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
	Skill Deve	lopm	ent	Cou	rses (SDC)		
22RA51D1	OPTIMIZATION ALGORITHMS FOR AUTONOMOUS SYSTEMS	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22RA51C3	SIGNAL PROCESSING FOR ROBOTICS	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22EC51B1	LIDAR & RADAR SYSTEM CONTROL	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22RA51A1	ROBOTICS: DESIGN OF SENSORS, DRIVES AND ACTUATORS	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
	Profes	sion	al El	ectiv	e (Pl	E)			
22RA5247	ALGORITHMS FOR ROBOTICS SENSOR FUSION	3	0	0	0	3	EMPLOYABILITY	Practice based learning	No
22RA5246	MEROELECTROMECHANICAL SENSORS AND ACTUATORS FOR ROBOTICS	3	0	2	0	4	EMPLOYABILITY	Practice based learning	No
	FUE							Problem Solving	





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Total Credits	(#2	36	3	94	16	90			
22IE6050	PROJECT DISSERTATION-PART-1 AND PART-2	0	0	72	0	36	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE5250	TERM PAPER	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No
22IE5149	SEMINAR	0	0	4	0	2	EMPLOYABILITY / SKILL DEVELOPMENT	Practice based learning, Problem Solving	No

Percentage of Syllabus Revision = (0/17) * 100 = 0 %

Percentage of Courses focusing on Employability = (17/17) * 100 = 100 %

Percentage of Courses focusing on Entrepreneurship = (0/17) * 100 = 0 %

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Dr. M. SUMAN
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Annexure V

Revised and New Courses

I. Program structure (with all Courses) containing the following categorization

		1	T	T	1	1	T	1	The state of	7	
Course Code	Course Name	Course Category	L	Т	P	S	CR	Pre- Requisite	New / Revised / Retained	Stakeholder Category	Justification for considering the feedback
20EC4064	CLOUD- COMPUTING & NETWORK SECURITY	Project Based Learning	3	0	0	0	3	Nil	Revised	Dr. Sakthivel Kogularasu, Research Assistant professor, National Cheng Kung University, Taiwan	The field of cloud computing is continuously evolving with the introduction of new technologies, services, and deployment models. Modifying the syllabus allows for the inclusion of the latest advancements, ensuring that students are exposed to cutting-edge tools and practices in cloud computing.
OEEC0011	IMAĞE PRÖĞESSINĞ	Project Based Learning	3	0	0	0	3	Nil	Revised	Mr. N. Venkateswara Rao, Director, Vazhraa Nirmaan Prathik, Hyderabad, Telangana	The applications of image processing are expanding into new areas such as healthcare, autonomous vehicles, augmented reality, and more. Modifying the syllabus enables the inclusion of topics related to these emerging applications, providing students with a broader and more relevant skill set.
20EC4051	INFORMATION THEORY & CODING	Practice based learning	3	0	0	0	3	NIL	Revised	Mr. Raghu Agira, Pike Corporation	Information theory and coding are closely tied to advancements in communication systems, data storage, and information processing technologies. Updating the syllabus ensures that students are exposed to the latest algorithms, coding techniques, and protocols relevant to modern communication systems.

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20EC4065	IP MULTIMEDIA SUB-SYSTEM & EMERGING TECHNOLOGIES	based	3	0	0	0	3	Nil	Revised	Dr. V. Rajesh, Emp ID: 2979, Professor, KLEF, Vijayawada	The field of IP Multimedia Sub-System and emerging technologies is dynamic, with rapid advancements occurring in areas such as telecommunications, networking, and multimedia. Updating the syllabus allows for the inclusion of the latest technologies, protocols, and standards to reflect the current state of the industry.
20EC4082	NATURAL LANGUAGE PROCESSING & APPLICATIONS	Practice based learning	3	0	4	4	6	Nil	Revised	Dr. Anil Vuppala, Asst. Prof., IIIT Hyderabad	Natural Language Processing (NLP) is a rapicly evolving field, with continuous advancements in machine learning, deep learning, and natural language understanding. Updating the syllabus allows students to be exposed to the latest techniques, models, and tools used in NLP, ensuring that they are well-prepared for the current state of the industry.
20EC3081	SPEECH SIGNAL PROCESSING	Practice based learning	3	0	0	0	3	Nil	Revised	Mr. Venkateswara Rao, Vazhraa Nirmaan Pvt Ltd	The field of speech signal processing is continuously evolving, with ongoing advancements in signal processing algorithms, machine learning techniques, and hardware. Updating the syllabus ensures that students are exposed to the latest technologies and methodologies, preparing them for contemporary challenges in the field.
20EC4062	VOIP AND BROADBAND NETWORKS	Practice based learning	3	0	0	0	3	Nil	Revised	Dr. Anil Vuppala, Asst. Prof., IIIT Hyderabad	Telecommunications and networking technologies are rapidly evolving. Updates to the syllabus can ensure that students are exposed to the latest developments in Voice over Internet Protocol (VOIP) and broadband networks, including new protocols, standards, and emerging technologies such as 5G.

Course wise Syllabus revision of approved structure as mentioned in point 1(Program structure (with all Courses) containing following categorization).

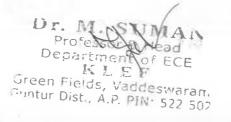
Dr. M. U.M. A. Professor & Head Department of ECE K.L. E. F. Green Fields, Vaddeswaram antur Dist., A.P. PIN 523 503



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Course Code	urse Name	Course Category	Existing Syllabus	New Syllabus	Topics Added / Removed / Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
FFC0011	IMAGE OCESSING	based	Processing, Fields that uses Digital Image Processing, Fundamental steps in Digital Image Processing, Components of an Image Processing System. Digital Image Fundamentals: Elements of Visual perception, Image sampling and Quantization, Basic relationships between Pixels, Linear and Nonlinear operations. Image	of Digital Image Processing, Fields that uses Digital Image Processing, Fundamental steps in Digital Image Processing, Components of an Image Processing System. Digital Image Fundamentals: Elements of Visual perception, Image sampling and Quantization, Basic relationships between Pixels, Linear and Non- linear operations. Image Transforms – The Discrete Fourier Transform, The FFT, Walsh, Hadamard, Discrete Cosine Transform, and Slant Transform. CO-2: Image Enhancement in Spatial Domain: Some basic Gray transformations, histogram processing, enhancement	CO1: The Haar Transform, and Slant Transform CO2: Sharpening Frequency Domain Filters CO4: Image Representations and Description: Representation schemes, Boundary Descriptors, Regional Descriptors	CO4: Comprehend image segmentation, representations, and description	Open elective course helps better employment	25%

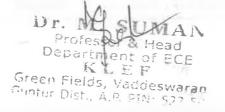




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1.28	Spatial Filters. Image operations, Smoothing	
	Enhancement in Frequency Spatial Filters, Sharpening	
	Domain: Introduction to Spatial Filters. Image	
	Fourier Transform and the Enhancement in	
	Frequency Domain, Frequency Domain:	154
1-3- 1	Smoothing Frequency Introduction on Fourier	
9	Domain Filters. CO-3: Transform and the	
31-3	Image Restoration: Noise Frequency Domain,	
4 1 2 2	models, Restoration in the Smoothing Frequency	
9-45	presence of Noise, only Domain Filters,	
V 7 4-	Spatial Filtering, Periodic Sharpening Frequency	
- I-78:1	Noise reduction by Domain Filters. CO-3:	
50 3. 0 F	Frequency Domain Image Restoration: Noise	
	Filtering, Linear, Position-models, Restoration in the	
2 KC-1840 3	Invariant Degradations, presence of Noise, only	
3.97	Inverse Filtering, Wiener Spatial Filtering, Periodic	
	Filtering, least mean Noise reduction by	
	square Filtering. Image Frequency Domain	
	Compression: Filtering, Linear, Position-	
	Fundamentals – Image Invariant Degradation,	
	Compression models – Inverse Filtering, Wiener	
258 1 2	Error-Free Compression, Filtering, least mean	
- 615	Lossy Compression. CO-4: square Filtering. Image	
12300	Image Segmentation: Compression:	
5.18	Detection of Fundamentals – Image	
41	discontinuities, Compression models –	
	Thresholding, Edge-based Error-Free Compression,	
	Segmentation, and Region-Lossy Compression. CO-	
	based Segmentation. 4: Image Segmentation:	
3 å	Detection of	
	discontinuities,	

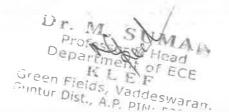




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TEV SECTION OF THE PROPERTY OF		į3		Thresholding, Edge-based Segmentation, and Region-based Segmentation. Image Representations and Description: Representation schemes, Boundary Descriptors, Regional Descriptors				
0EC4051 THE	MATION ORY & DING	based learning	mark-off, statistical model, Shannon's Theorem: Introduction to Random Variables, Stationary Process, Mean, Correlation and Covariance Functions,	Shannon's Theorem: Introduction to Random Variables, Stationary Process, Mean, Correlation and Covariance Functions,	CO1: Transmission of Random variable through LTI System CO4: Miscellaneous: Error Types,	CO4: Interpreting circuit implementation by using cyclic codes and convolution codes.	Professional elective course helps better employment	25%





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Mutual Information for	information, Channel
Continuous ensembles,	Coding theorem,
Information Capacity	Differential entropy and
theorem and its	Mutual Information for
implications, Information	Continuous ensembles,
capacity theorem of	Information Capacity
colored noise, Rate	theorem and its
distribution theory.	implications, Information
Measure of Information,	capacity theorem of
Mark-off Statistical Mode	el colored noise, Rate
for Information Sources,	distribution theory.
and Shannon-theorem.	Measure of Information,
Encoding: Shannon	Mark-off Statistical Model
Algorithms, Channels,	for Information Sources,
Source/Huffman coding,	and Shannon-theorem.
Error Detection &	Encoding: Shannon
Correction: Shannon's	Algorithms, Channels,
Noiseless Coding	Source/Huffman coding,
Theorem, Fano Coding,	Error Detection &
Huffman Coding,	Correction: Shannon's
Arithmetic coding, Basic	Noiseless Coding
of Error detection &	Theorem, Fano Coding,
Corrections, Channels:	Huffman Coding,
Symmetric Lossless,	Arithmetic coding, Basics
Deterministic, Useless,	of Error detection &
Binary Symmetric (BSE)	, Corrections, Channels:
Binary Erase (BEC),	Symmetric Lossless,
Cascade and non-	Deterministic, Useless,
symmetric channels Error	
Detection and Correction	
Types, Linear/Block code	es, Cascade and non-

Professor Head
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KLEF Green Fields, Vaddeswaran, Guntur Dist., A.P. PiN 522 507



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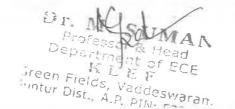
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IP MULTIMEDIA SUB-SYSTEM & EMERGING TECHNOLOGIES	network and Acc network Archited reference models Components and Control Plane and plane in IMS, IM Interface referen User identities IN Protocol Stacks Operation: H248 RTP, RTCP, IM Call/Flow Opera	IMS Architectures: Next- Gen NWs, IMS Standards, IMS Architectures, IMS Story of ization- ony on of the IMS Standardization- Trends for telephony on of the IMS Architecture, Co1: Next Generation Netwo CO1: Next Generation Netwo CO4: Trends of IP based Mobile Pho- Personal Digital Assistants (PDAS Desktops/Laptops Digital Subscriber Line (DSL)-Cable Set-Top Box, to IMS IMS Interface reference Magcao, points, User identities IMS Protocol Stacks & IMS Operation: H248, Magcao, Protocol, RTP, RTCP, IMS to IMS Call/Flow Operation:	Mobile Phones- Personal Digital Assistants (PDAS)- Desktops/Laptops Digital	Professional elective course helps better employment	25%





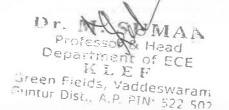
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RTCP, IMS service path. IMS Layer mapping. IMS and the DNS, IMS session setup, IMS registration, IMS call flow examples, IMS to IMS call, IMS Charging, IMS Security, IMS Scenarios, Role of application servers, Examples. IMS-PSTN, Web-Msg, Voice Video, VoLTE, RCS: Interoperability between PSTN and IMS, Comparison of PSTN, GSM and IMS networks, Establishing a call with the PSTN. Layer 2 and 3 Messages for call flow. Web Messaging-Voice- Video-VoLTE-Rich Communication Services (RCS) Access Mebile access Wireless access Emerging Tech. of IMS & Applications: Cloud, IoT Assertice path H.248/Megaco, RTP and H.248/Megaco, RTS H.MS Courties, H.248/Megaco, RTS H.248/Megaco, RTS H.248/Megaco, RTS H.248/Megaco,				
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		Applications: Cloud, IoT		



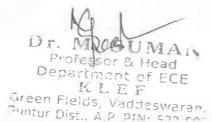




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	+ 1			Applications, NFV, SDN, PDAS, DSL, Cable-Set- Top Box: Trends of IPM based Mobile Phones- Personal Digital Assistants (PDAS)-Desktops/Laptops				
				Digital Subscriber Line (DSL)-Cable Set-Top Box				
20EC3081	SPEECH SIGNAL ROCESSING	Practice based	Sounds; Acoustic Phonetics – Vowels, diphthongs, fricatives etc., Speech parameters-Speech production, Labelling. TRANSFORMATIONS FOR SPEECH SIGNAL PROCESSING: Fourier Transformation, Design of Filters- Wide band and Narrow Band- Hilbert transform- Auto correlation and Hilbert	SPEECH FUNDAMENTALS: Production and Classification of Speech Sounds; Acoustic Phonetics – Vowels, diphthongs, fricatives etc., Speech parameters-Speech production, Labelling. TRANSFORMATIONS FOR SPEECH SIGNAL PROCESSING: Fourier Transformation, Design of Filters Wide band and Narrow Band- Hilbert transform- Auto correlation and Hilbert huang transforms for pitch estimation- STFT- STFT representation of speech - Z transform and Pole Zero concepts, LTI, Modelling	CO4: CNN for Automatic speech and speaker recognition	Nil	Professional elective course helps better employment	0%

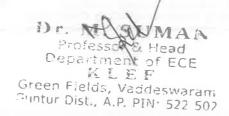




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Pole zero, Z transform	filtering, Pole zero, Z		
ANALYSIS AND	transform ANALYSIS		
SYNTHESIS OF	AND SYNTHESIS OF		
SPEECH: Speech	SPEECH: Speech		
Analysis: Time domain:	Analysis: Time domain:		
Analysis and Synthesis of	Analysis and Synthesis of		
Pole-Zero Speech Models;	Pole-Zero Speech Models;		
Aliasing, Spectral: Short	Aliasing, Spectral: Short		
Time Fourier analysis -	Time Fourier analysis -		
	filter bank design - speech		
coding - sub-band coding	coding - sub-band coding		
of speech - transform	of speech - transform		
coding - channel vocoder -	coding - channel vocoder -		
vector quantizer coder.	vector quantizer coder.		
introduction to LPC.	introduction to LPC.		
Speech synthesis - Pitch	Speech synthesis - Pitch		
extraction algorithms,	extraction algorithms,		
MFCC- autocorrelation	MFCC- autocorrelation		
pitch trackers -	pitch trackers -		
10100.011.01000	voice/unvoiced detection -		
homomorphic speech	homo morphic speech		
processing - homomorphic	processing - homomorphic		
	systems for convolution -		
complex cepstrum - pitch	complex cepstrum - pitch		
extraction using	extraction using		
homomorphic speech	homomorphic speech		
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vowel synthesis Advanced			
Topics and applications of			
ANN, AL and ML	and APPLICATIONS OF		
Introduction to Hidden	ANN, AI and ML.		
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			segmentation and labelling of speech based on HMM-speaker verification systems – speaker identification Systems - ANN, CNN, ANN and Introduction to Text to speech and Speech to text,	Introduction to Hidden Markov Modelling- Application of HMM: making a digit recognition system -Automatic segmentation and labelling of speech based on HMM- speaker verification systems -speaker identification Systems - ANN, CNN, ANN and CNN for Automatic speech and speaker recognition- Introduction to Text to speech and Speech to text, Introduction of AI and ML based applications in speech domain.			, ×	
20EC4064	CLOUD- COMPUTING & NETWORK SECURITY	Practice based learning	Software; Data Center	Networking: Basics of Computer Networking and Cloud Networking; Characteristics of Cloud Networking: Ethernet usage, Virtualization,	DNS, DNS Transactions, Threats to the DNS, DNSSEC [RFC 2535], Security aware DNS Servers, Security Aware	CO4: Analysis of various Network Security issues	Professional elective course helps for better employment	25 %

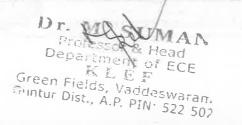




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		Cloud data center	Cloud data center	
1		networks; Cloud types,	networks; Cloud types,	
		Public cloud services,	Public cloud services,	
		Cloud Data Center	Cloud Data Center	
		Networking Topologies:	Networking Topologies:	
1		Data Center Network	Data Center Network	
1		Switch Types, Flat Data	Switch Types, Flat Data	
		Center Networks, Rack	Center Networks, Rack	
1	3	Scale Architectures;	Scale Architectures;	
1	i	Virtualization and	Virtualization and	
1		Networking: VMware,	Networking: VMware,	
1		Edge Virtual Bridging,	Edge Virtual Bridging,	
1		VM Migration; Network	VM Migration; Network	
1		Virtualization: Traditional	Virtualization: Traditional	
1		Network Tunneling	Network Tunneling	
1		Protocols, Virtual	Protocols, Virtual	
ı		Extensible LAN	Extensible LAN	
1		(VXLAN),Network	(VXLAN),Network	
ı		Virtualization using	Virtualization using	
1		Generic Routing	Generic Routing	
1		Encapsulation (NVGRE).	Encapsulation (NVGRE).	
1		Cloud based Big-Data	Cloud based Big-Data	
1		Computing: Big Data and	Computing: Big Data and	
ı		Cloud Computing	Cloud Computing	
		Relationship Model:	Relationship Model:	
			Infrastructure as a Service	
		(IAAS),Platform as a	(IAAS),Platform as a	
1			Service (PAAS), Software	
			as a Service (SAAS),	
			Cloud Computing Role for	
		Big Data: IAAS in Public	Big Data: IAAS in Public	

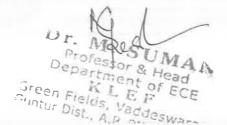




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Cloud, PAAS in Private	Cloud, PAAS in Private			
Cloud, SAAS in Hybrid	Cloud, SAAS in Hybrid			
Cloud.(4hours)Software	Cloud.(4hours)Software			
Fabric Architecture: Data	Fabric Architecture: Data			
Fabric Architecture	Fabric Architecture			
Fundamentals, basic of	Fundamentals, basic of			
Fabric computing,	Fabric computing,		- 1	
Topology and Key	Topology and Key			
characteristics of Fabric	characteristics of Fabric			
computing, Laying the	computing, Laying the			
Foundation for a Data	Foundation for a Data			
Fabric, Building Data	Fabric, Building Data			
Fabric Capabilities Up and	Fabric Capabilities Up and			
Out, Ecosystem Integration	Out, Ecosystem			
Layer Cloud Data Center	Integration Layer Cloud			
Networks and Standards:	Data Center Networks and			
Cloud Data Center	Standards: Cloud Data			
Network (CDCNs)	Center Network (CDCNs)			
Architectures, standards of	Architectures, standards of			
Data Center Network,	Data Center Network,			
Blueprint components of	Blueprint components of			
CDCNs, Performance	CDCNs, Performance			
Analysis of CDCNs,	Analysis of CDCNs,			
Structural robustness and	Structural robustness and			
Connectivity of DCNs,	Connectivity of DCNs,			
Energy efficiency of	Energy efficiency of			
DCNs, Throughput and	DCNs, Throughput and			
	average packet delay,			
Cloud data center reference				
design. Data Center	reference design. Data			
security: Physical Security	Center security: Physical			





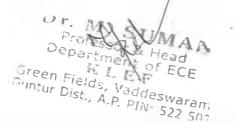
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of DC, Restricting Access	Security of DC,			
Applications of Cloud-	Restricting Access			
Computing (ACC):	Applications of Cloud-			
Applications of Cloud	Computing (ACC):			
Computing: Infrastructure	Applications of Cloud			
as a service (IaaS) and	Computing: Infrastructure			
platform as a service	as a service (IaaS) and			
(PaaS), Private cloud and	platform as a service			
hybrid cloud, Test and	(PaaS), Private cloud and			
development, Big data	hybrid cloud, Test and			
analytics, File storage,	development, Big data			
Disaster recovery, Backup.				
	Disaster recovery, Backup.			
(CCS): Security issues;	Cloud Computing Security			
CCS Controls; Dimensions				
&Privacy Cloud	CCS Controls;			
Vulnerability and	Dimensions &Privacy			
Penetration Testing;	Cloud Vulnerability and		9	
Encryption Algorithm:	Penetration Testing;			
Attribute-based encryption				
(ABE), Ciphertext-policy	Attribute-based encryption			
ABE (CP-ABE), Key-	(ABE), Ciphertext-policy			
policy ABE (KP-ABE),	ABE (CP-ABE), Key-			
Legal and contractual	policy ABE (KP-ABE),			
issues. Network	Legal and contractual			
Virtualization (NV):	issues. Network			
Components, External &	Virtualization (NV):			
Internal Virtualization,	Components, External &			
Performance of Wireless	Internal Virtualization,			
Network Virtualization	Performance of Wireless	-		
 (WNV)Network Security:	Network Virtualization			

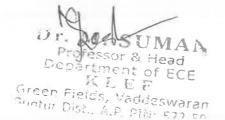




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	Risk.		Spoofing, Denial of service, Malicious Code, Social Engineering, Rouge Access Points, Cell Phone Security, Wireless Hacking and Hackers, RFID, QoS: QoS Overview and Background, QoS schemes at the Data Link Layer, QoS Schemes at the Network Layer, QoS Routing Schemes	Social Engineering, Rouge Access Points, Cell Phone Security, Wireless Hacking and Hackers,				
	- 20			THE TOTAL CONTROL OF THE PARTY				
20EC4082	NATURAL LANGUAGE PROCESSING & APPLICATIONS	Practice based learning	building blocks. Wolds,	NLP: Overview and Motivation. Human Language from computers View point and language building blocks. Words, text and speech models. A	Sequence-to-sequence models and attention. Text Classification Application pipeline building.	CO4: Apply machine learning models for finding solutions for problems in NLP and judge	Professional elective course helps better employment	25





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		Chat bot NLP pipeline.	Chat bot NLP pipeline.	their	
		Word tokenization,	Word tokenization,	performance.	
		Building vocabulary with	Building vocabulary with		
e el a loreal		tokenizer and sentiment.	tokenizer and sentiment.		
		Challenges in NLP.	Challenges in NLP.		
		Approaches in NLP. NLP	Approaches in NLP. NLP		
ar Law		Pipeline: Data Acquisition,	Pipeline: Data		
		Text Extraction and	Acquisition, Text		
2		Cleanup, Pre-Processing,	Extraction and Cleanup,		
2.31 (2)		Feature Engineering,	Pre-Processing, Feature		
384.5		Modeling. Evaluation,	Engineering, Modeling.		
44		Post-Modeling Phases. TF-	Evaluation, Post-Modeling		
		IDF vectors, Bag of words,			
	4	Bag of N-Grams, One-Hot	Bag of words, Bag of N-		
		Encoding, Vectorizing,	Grams, One-Hot		
		Zipf's Law, Topic	Encoding, Vectorizing,		
		modeling. Word	Zipf's Law, Topic		
		Embeddings Finding	modeling. Word		
		meaning in word counts	Embeddings Finding		
		(semantic analysis): From	meaning in word counts		
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		word counts to topic	(semantic analysis): From		
4.34		scores, Latent semantic	word counts to topic		
- 4		analysis, Singular value	scores, Latent semantic		
		decomposition, Principal	analysis, Singular value		
		component analysis, Latent			
		Dirichlet allocation	component analysis,		
		(LDiA), Distance and	Latent Dirichlet allocation		
e the cost		similarity, Steering with	(LDiA), Distance and		
		feedback, Topic vector	similarity, Steering with		
		power. Deeper learning	feedback, Topic vector		
		(neural networks):	power. Deeper learning		

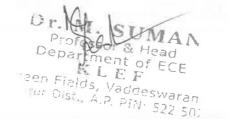




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1 2	And the second s		Learning meaning, Convolutional neural nets, RNNs, LSTMs, Transformers Models for Text and speech processing.	(neural networks): Semantic queries and analogies, Word vectors, Learning meaning, Convolutional neural nets, RNNs, LSTMs, Transformers Models for Text and speech processing. Sequence-to-sequence models and attention. Text Classification Application pipeline building.				
20EC4062 &	BROAD BAND	Practice based learning	Side/Trunk Side switching, Isochronous Transport, PSTN Signalling, PCM, digital channel & bandwidth constraints, SS7, Services. IP Networking Review (simple): Protocol layering, encapsulation, Ethernet, QoS at layer 2, IP, UDP, TCP, IP Addressing (network,	Classical Telephony: Line Side/Trunk Side switching, Isochronous Transport, PSTN Signalling, PCM, digital channel & bandwidth constraints, SS7, Services. IP Networking Review (simple): Protocol layering, encapsulation, Ethernet, QoS at layer 2, IP, UDP, TCP, IP Addressing (network, subnet, NAT), IP Routing	Trends in Broadband Services, Optical Broad band services, Fiber to neighbourhood (FTTX) Architecture, ITU-T PON standards, PON Technology background.	CO4: Apply NAT techniques and the quality of service for networks with SIP protocol	Professional elective course helps better employment	25

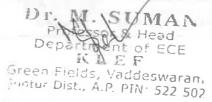




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SIP: Signalling Protocol Components (RFC 3261), SIP language elements, call flows. Broadband Access Technologies: An Overview of Broadband Services and Emerging Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband PON- Ethernet PON- next- SIP: Signalling Protocol Components (RFC 3261), SIP language elements, call flows. Broadband Access Technologies: An Overview of Broadband Services and Emerging Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband PON- Ethernet PON-				0 0		
call flows. Broadband Access Technologies: An Overview of Broadband Services and Emerging Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Call flows. Broadband Access Technologies: An Overview of Broadband Services and Emerging Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband	11					4.0
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Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband			Overview of Broadband	Overview of Broadband		
Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband Technologies, Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband			Services and Emerging	Services and Emerging		
Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband Passive Optical Networks: PON Architectures-PON Standards History and Deployment-Broadband					55	
PON Architectures-PON PON Architectures-PON Standards History and Deployment-Broadband Deployment-Broadband					141	
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Standards History and Deployment-Broadband Deployment-Broadband			1			
Deployment-Broadband Deployment-Broadband						
Deployment-Broadband Deployment-Broadband	1.1		Standards History and	Standards History and		
						21 ±
			Deployment-Broadband			
PON- Ethernet PON- next- PON- Ethernet PON-			Deployment-Broadband	Deployment-Broadband		
PON- Ethernet PON- next-PON- Ethernet PON-						
PON- Ethernet PON- next-PON- Ethernet PON-						
PON- Ethernet PON- next-PON- Ethernet PON-						
LOM- Effether LOM- next-LOM- Effether LOM-						
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			- PON- Ethernet PON-	PON- Ethernet PON- next-		
			-IPON- Ethernet PON-	1		
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generation broadband next-generation broadband			1	la announción de la constitución		
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optical Access networks. optical Access networks.			next-generation broadband	generation broadband		
			next-generation broadband		-	The second second
			next-generation broadband			
Fiber-to-the-Home Fiber-to-the-Home			next-generation broadband optical Access networks.	optical Access networks.		
I TOUT OF THE TANK			next-generation broadband	optical Access networks.		





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Broadband, Hybrid Fiber-	Broadband, Hybrid Fiber-		
Coaxial (HFC) Networks.	Coaxial (HFC) Networks.		
Broadband Optical NWs	Broadband Optical NWs		
and Broadband and	and Broadband and		
Multimedia: Broadband	Multimedia: Broadband		
optical Access	optical Access		
Introduction, Evolution of	Introduction, Evolution of		
optical technology.	optical technology, Trends		
	in Broadband Services,		
	Optical Broad band		
	services, Fiber to		
	neighbourhood (FTTX)		
	Architecture, ITU-T PON		
	standards, PON		
	Technology background.		

Dr. M. SUMAN
Professor & Head
Department of ECE
KLEF reen Fields, Vaddeswaran intur Dist., A.P. PIN 522 50.



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Annexure VI

List of Value-Added Course

Name of the value-added courses offered (with 30 or more contact hours)	Year of offering	No. of times offered during the same year
NI CLAD	II	1
ARC ROBOTICS	III	1
CDAC - IoT Technologies;	III	1
Embedded System Application & IOT Programming	III	1
Embedded System Applications & IOT Concepts	III	1
FUNDAMENTALS OF UVM (UNIVERSAL VERIFICATION METHODOLOGY)	m	1
Huawei Certified ICT Associate Artificial Intelligence (HCIA-AI)	III	1
INDUSTRIAL ROBOTICS & AUTOMATION	III	1
IOT & INDUSTRIAL AUTOMATION	III	1
IOT ANALYTICS AND DATA SCIENCE	Ш	1
IOT AND DATA SCIENCE FOR SMART GRID	III	1
Medical Equipment	III	1
PHYSICAL DESIGN & VERIFICATION	III	1
Synthesis and Timing analysis	III	1
Tessolve - Embedded System Applications & IoT	III	1
Verification using system verilog	III	1
VLSI Design and Verification	III	1
ADVANCED IOT ANALYTICS WITH MACHINE LEARNING	IV	1
Huawei Certified ICT Associate Routing and Switching (HCIA-R&S)	IV	1
HUAWEI CERTIFIED ICT CLOUD COMPUTING	IV	1
PEGA	IV	1
SERVICE NOW;	IV	1
VLSI-ADVANCED DESIGN & VERIFICATION- SYSTEM VERILOG AND UVM	IV	1
MICROSOFT - AZURE AI FUNDAMENTALS	IV	1
MICROSOFT AZURE	IV	1
Microsoft Azure Data Fundamentals	IV	1
Microsoft Azure Data Fundamentals - 19CC3321	IV	1
Microsoft Certified: Azure - AI -Fundamentals;	IV:	1
MICROSOFT CERTIFIED: AZURE AI FUNDAMENTALS	- IV	1
Microsoft certified: Azure Fundamentals	IV	1
Microsoft Certified: Azure-Fundamentals;	IV	1

professor & Head
professor & Head
professor & Head
Department of ECE
Department of ECE
Sintur Dist., A.P. PIN' 522 507



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PCCET: Palo Alto Networks Certified Cybersecurity	IV	
Entry-level Technician;		1
WTN	IV	1

Green Fields N. P. Pilli Sandrander C. Intur Dist.