

# (Autonomous)

(Approved by A.I.C.T.E., New Delhi & Permanently Affiliated to JNTU-GV, Vizianagaram)

NAAC Accredited with A+ grade

Tamaram (V), Makavarapalem, Narsipatnam (RD), Anakapalle Dist., Pin-531113. www.avanthienggcollege.ac.in, mail: principal@avanthienggcollege.ac.in

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Minutes of the 2<sup>nd</sup> Board of Studies Meeting on Curriculum and Syllabus Approval

Mode: Through Hybrid Mode

Venue: Conference Hall

# Link:

https://us06web.zoom.us/j/9030986321?pwd=YbCxwrCJ0uwgScGEnI3ynQEd85PU3M.1&omn=8 1950181269

Date: 24/05/2025

# **Meeting Proceedings:**

### 1. Welcome and introduction:

- BoS chairman (Dr. E. Govinda) welcomed the BoS members.
- 2. Agenda 1: Discussion, review, and approval of the proposed curriculum for II B.Tech I Semester (ECE), effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following courses:

- 1. Probability Theory and Stochastic Process.
- 2. Universal Human Values-Understanding Harmony and Ethical Human Conduct
- 3. Signals and Systems
- 4. Electronic Devices and Circuits
- 5. Digital Electronics and Logic Design
- 6. Electronic Devices and Circuits Lab
- 7. Digital Logic Design & Signal Simulation Lab
- 8. Python programming
- 9. Quantitative Aptitude & Logical reasoning
- 10. Environmental Science.
- Dr. B.K.N. Srinivas suggested renaming "Digital Electronics and Logic Design" to "Digital Logic Design"
- Dr. B.K.N. Srinivas suggested renaming "Digital Logic Design & Signal Simulation Lab" to "Digital Logic Design & Signal Processing Lab".
- Dr. B.K.N. Srinivas recommended emphasizing FETs over BJTs in the Electronic Devices and Circuits (EDC) course.



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- Dr. M. Subrahmanyam also agreed with Dr.B.K.N. Srinivas, highlighting that CMOS is becoming obsolete with emerging FET technologies.
- The BoS members unanimously approved the curriculum, incorporating recommended changes of a course "Digital Electronics and Logic Design" to "Digital Logic Design" and a laboratory course "Digital Logic Design & Signal Simulation Lab" to "Digital Logic Design & Signal Processing Lab".
- 3. Agenda 2: Discussion, review, and approval of the proposed curriculum for II B.Tech II Semester (ECE), effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following courses:

- 1. Managerial Economics and Financial Analysis
- 2. Digital Signal Processing
- 3. EM Waves and Transmission Lines
- 4. Analog Circuits Design
- 5. Analog and Digital Communications
- 6. Analog Circuits Design Lab
- 7. Analog and Digital Communications Lab
- 8. Soft Skills and Verbal Ability
- 9. Design Thinking and Innovation
- 10. Indian Traditional Knowledge
- The BoS members reviewed and accepted the proposed syllabus.
- 4. Agenda 3: Discussion, review, and approval of the curriculum for II M.Tech I & II Semester (VLSID), effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following course structure:

# **Professional Electives:**

- 1. Scripting Languages for VLSI
- 2. Digital System Design & Verification
- 3. Hardware Software Co-design

# **Open Electives:**

- 1. Business Analytics
- 2. Industrial Safety



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- 3. Operations Research
- 4. Cost Management of Engineering Projects
- 5. Composite Materials
- 6. Waste to Energy
- 7. Dissertation Phase I and operational procedure for Dissertation Phase II
- The BoS members approved the curriculum, ensuring industry relevance and research focus.
- 5. Agenda 4: Discussion, review, and approval of the curriculum for II M.Tech I & II Semester (DECS), effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following course structure:

## **Professional Electives:**

- 1. Detection & Estimation Theory
- 2. Advanced Digital Signal Processing
- 3. Coding Theory and Applications

# **Open Electives:**

- 1. Business Analytics
- 2. Industrial Safety
- 3. Operations Research
- 4. Cost Management of Engineering Projects
- 5. Composite Materials
- 6. Waste to Energy
- 7. Dissertation Phase I and operational procedure for Dissertation Phase II.
- The BoS members approved the curriculum, ensuring academic and practical relevance.
- 6. Agenda 5: Discussion, review, and approval of B.Tech Honors program, effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following streams:



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STI	REAM1: VLSI Design STREAM2: EMBEDDED SYSTEMS		STREAM3: ADVANCED COMMUNICATION SYSTEMS				
S.NO	COURSE NAME	S.NO	.COURSE NAME	S.NO	COURSE NAME		
1	Advanced VLSI Design		1 Advanced Embedded systems		Modern Communication systems		
2	Introduction to CAD for VLSI	2	2 Real time Operating systems		RF and Microwave design		
3	Design for testability	3	Advanced Microcontrollers	3	mm Wave Technology		
4	VLSI Physical Design	4	Embedded LINUX	4	GPS and Navigation system		
5	NPTEL	/MOOC	Course-I (12 Weeks course/ exc	luding t	he above subjects)		
6	NPTEL/MOOC Course-II (12 Weeks course/ excluding the above subjects)						

- The BoS members reviewed and approved the Honors program.
- 7. **Agenda 5:** Discussion, review, and approval of B.Tech Minors program, effective from Academic Year 2025–2026.

Resolution: The BoS Chairman proposed the following streams:

STRI	EAM-1: DIGITAL ELECTRONICS IN MODERN APPLICATIONS	STREAM-2: IoT BASED EMBEDDED SYST DESIGN			
S.No	Course	S.No	Course		
1	Fundamentals of Digital Electronics	1	Digital Electronics		
N=3	Digital Electronics Lab		Digital Electronics Lab		
2	Fundamentals of Signal Processing	2	Microprocessor and its applications		
3	Fundamentals of VLSI Design	3	Microcontroller and its interfacing		
J	VLSI Design Lab		Microcontroller and interfacing Lab		
4	Digital Design with Verilog	4	Introduction to IoT and Embedded systems		
5	NPTEL/MOOC Course-I (12 Weeks course/ excluding the above subjects)				



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- Dr. M. Satya Prasad suggested sharing the IoT syllabus with industry experts to validate its industrial applications and relevance to Industry 4.0.
- Mr. L. Chandrasekhar mentioned he would provide further suggestions via email.
- The BoS members reviewed and approved the Minors programs.

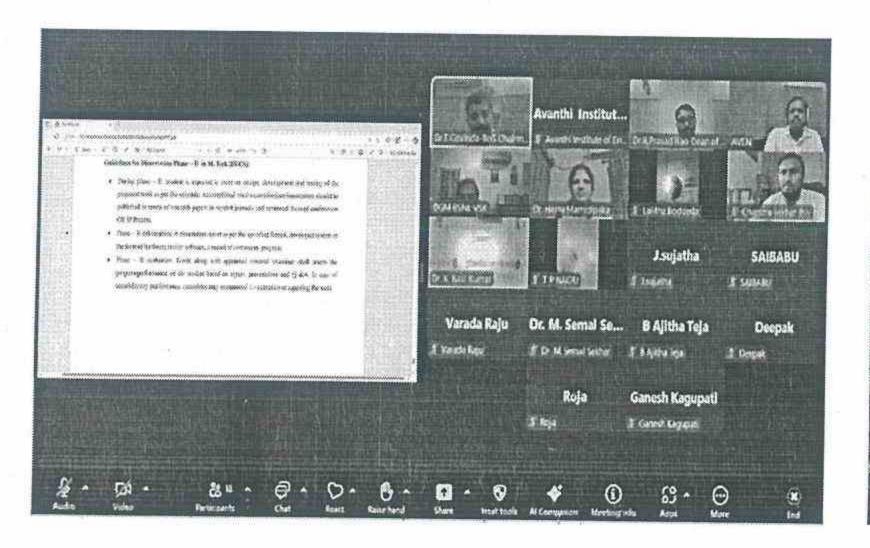
# Conclusion:

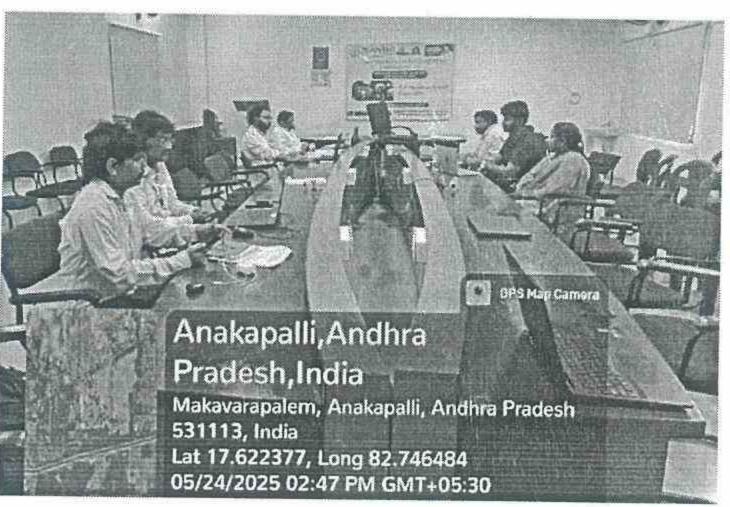
- The meeting is successfully concluded, the BoS members accepted and adopted the proposed programs, incorporating resolutions where necessary.
- It is agreed to forward the final version of the course structure and the syllabus to all the members through email.
- BoS Chairperson Dr. E. Govinda expressed gratitude to all members for their contributions.
- The next BoS meeting is planned to take up discussion and review of III &IV B.Tech (ECE) course structure and syllabus for various courses.

Chairperson

Boardrof Stroivind (FCE)

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Minutes of the 2nd Board of Studies Meeting on Curriculum and Syllabus Approval,
Department of Electronics and Communication Engineering.

# OCULTY OF

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING 2<sup>nd</sup> Board of Studies Meeting

BoS Members-Academic Year: 2025-2026 to 2026-2027

Dt: 24-05-2025

S.No	NAME OF THE MEMBER & AFFILIATION	NOMINATION	SIGNATURE
1	Dr. M. Hema Department of Electronics and Communication Engineering Asst. Professor, JNTU-GV (CEV) A, VZM. e-Mail: mhema.ece@jntugvcev.edu.in Mobile: 9246660360	Expert member nominated by University (JNTU-GV)	الم الم
2	Dr. M. Subrahmanyam Department of Electrical Engineering Assistant professor, IIT Palakkad e-Mail: svmula@iitpkd.ac.in Mobile: 9880080048	Expert member nominated by Academic Council	ONLINE HODE
3	Dr. B. K. N. Srinivas  Department of Electronics and Communication Engineering  Assistant Professor, NIT Warangal  e-Mail: srinu.bkn@nitw.ac.in  Mobile: 9800296596	Expert member nominated by Academic Council	ONLINE MODE
4	Dr. M Satya Prasad DGM Enterprise business, transmission and training BSNL Visakhapatnam E-Mail: spmalla31@gmail.com Mobile: 9490000137	Nominated from Industry	ONLINE MODE
5	Mr. L. Chandra Sekhar FOUNDER & CEO, INV Technologies e-Mail: director@invtechnologies.in Mobile: 9704808143	Nominated from Alumni	ONLINE MODE

Dr. E. Govinda

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# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

# Board of Studies (Internal): Faculty Signatures

S.NO	NAME OF THE MEMBER	SIGNATURE
1.	Dr. RAYAVARAPU PRASADA RAO	melle
2.	Dr. KOLAKALURI RAVIKUMAR	See.
3.	Dr. MUMMINA SEMAL SEKHAR	M.Sper
4.	Mr. YADLA RAMAKRISHNA	Y. Lander
5.	Mr. TAMARANA PATTALA NAIDU	T.P. Naidy
6.	Ms. POLAKI RAGHAVA KUMARI	P. Reghara Kunan
7.	Mr. SISTU PHANI VARA PRASAD	pley.
8.	Ms. BODHIREDDY SANDHYA	and the same of th
9.	Ms. DEVARAPALLI PAVANA KUMARI	DE
10.	Mr. DOGGA SREENIVASA RAO	PSn.
11.	Ms. BONDLA MAHA LAKSHMI	mahari
12.	Mr. ADIRAJU VARAHA SANTHOSH DEEPAK	A
13.	Mr. VARADA RAJU	CORP .
14.	Mr. KAGUPATI VENKATA SIVA GANESH	
15.	Ms. NADISETTI LEELA BHARATHI	Leela
16.	Ms. JAKKA VANDANA	Laura
17.	Ms. KANDRAKOTA SANDHYA	183
18.	Ms. PADATHALA KALPANA	Lalpeng
19.	Mr. KINTHADA UMA SHANKAR	Umarhankars.
20.	Mr. PANDIPATI PRASANTH KUMAR	Prat.
21.	Ms. BELLAPUKONDA TEJA AJITHA	B. Slithaleja
22.	Ms. DOKKARA ANUSHA	Augh
23.	Mr. ADIGARLA RAMANA BABU	A. Rameral
24.	Ms. THOTA SOWJANYA	Solviany
25.	Mr. GUDALA PRADEEP BABU	100
26.	Mr. CHENNA PRATAP	C. Burgel
27.	Ms. RONGALI SIREESHA	P.S.

# CATION BY SERVICE STATES OF THE SERVICE STAT

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28.	Ms. GORLI UMA DEVI	6. vmadelw
29.	Mr. BONDA RAMESH KUMAR	BRames Kumos
30.	Ms. JAKKALA SUJATHA	-18y
31.	Mr. SANKABATHULA VENKATA ANAND	A
32.	Ms. POLAMARASETTY LALITHA	13 balilla
33.	Mr. MAKKAPATI SARAT RANGANATH SARATH	Sanob
34.	Ms. VUDIMUDI BHARATHI ROJA	O ABI.
35.	Ms. NATHALA NAGAMANI	Ment

Dr. E. Govinda

Head and BoS, Chairperson

Chairperson

Board of Studies (ECE)

Avanthi Inst. of Engg. & Tech. (Autonomous)

Makavarapalem (V), Anakanalle (Dist)-531113

Dr. QP V N J Mohan Rao

Principal rincipal

Avanthi Institute of Engg. & Technology Tamaram, Makavarapalern Md., Anakapalli District., Pin: 531 113

**Regulation: R24** 



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#### **Department of ELECTRONICS AND COMMUNICATION ENGINEERING**

Program: B. Tech Electronics and Communication Engineering

#### **II Year I Semester- Course Structure**

S. No	<b>C</b> .		Course Title		Hours p	er Week	
5.110	Category	Course Code	Course Title	L	T	P	Credits
1	BS	R24BS07	Probability theory and Stochastic Process	3	0	0	3
2	HS	R24HS03	Universal Human Values- Understanding Harmony and Ethical Human Conduct	2	0	0	2
3	ES	R24ES09	Signals and Systems	3	0	0	3
4	PC	R24PC03	Electronic Devices and Circuits	3	0	0	3
5	PC	R24PC04	Digital Logic Design	3	0	0	3
6	PC	R24PC05	Electronic Devices and Circuits Lab	0	0	3	1.5
7	PC	R24PC06	Digital Logic Design & Signal Processing Lab	0	0	3	1.5
8	SC	R24SC01	Python Programming	0	1	2	2
9	HS	R24HS04	Quantitative Aptitude & Logical reasoning	0	1	2	2
10	MC	R24MC03	Environmental Science	2	0	0	-
	Total			16	02	10	21

Category	Courses	Credits
BS- Basic Sciences Course	1	3.0
ES-Engineering Science Courses	1	3.0
HS-Humanities and Management Sciences Courses	2	4.0
PC-Professional Core Courses	4	9.0
MC-Mandatory Course	1	0
SC- Skill Enhancement course	1	2.0
Total	10	21

**Regulation: R24** 



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#### Department of ELECTRONICS AND COMMUNICATION ENGINEERING

Program: B. Tech Electronics and Communication Engineering

#### **II Year II Semester- Course Structure**

		Course	C THE		Но	urs per V	Veek
S. No	Category	Code	Course Title	L	T	P	Credits
1	HS	R24HS05	Managerial Economics and Financial Analysis	2	0	0	2
2	PC	R24PC07	Digital signal processing	3	0	0	3
3	PC	R24PC08	EM Waves and Transmission Lines	3	0	0	3
4	PC	R24PC09	Analog Circuits Design	3	0	0	3
5	PC	R24PC10	Analog and Digital Communications	3	0	0	3
6	PC	R24PC11	Analog Circuits Design Lab	0	0	3	1.5
7	PC	R24PC12	Analog and Digital Communications Lab	0	0	3	1.5
8	SC	R24SC02	Soft Skills & Verbal Ability	0	1	2	2
9	HS	R24HS06	Design Thinking and Innovation	0	1	2	2
10	MC	R24MC04	Indian Traditional Knowledge	2	0	0	-
	Total				2	10	21

Summer internship 2 months (Mandatory) after second year (to be evaluated during III year I Semester)(community service project)

Category	Courses	Credits
HS-Humanities and Management Sciences Courses	2	4
PC-Professional Core Courses	6	15
SC-Skill Enhancement Course	1	2
MC- Mandatory course	1	0
Total	10	21



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#### Department of ELECTRONICS AND COMMUNICATION ENGINEERING

Program: M.Tech- VLSI Design Regulation: R24

#### **II Year I Semester- Course Structure**

S No	Catagory Course	Subject		achi chem	Credits		
S. No. Catego	Category	Type/Code	Subject		T	P	Credits
1	PE	R2457PE05.1 R2457PE05.2 R2457PE05.3	<ul><li>a) Scripting Languages for VLSI</li><li>b) Digital System Design &amp; Verification</li><li>c) Hardware Software co-design</li></ul>	3	0	0	3
2	OE	R2457OE01.1 R2457OE01.2 R2457OE01.3 R2457OE01.4 R2457OE01.5 R2457OE01.6	<ul> <li>a) Business Analytics</li> <li>b) Industrial Safety</li> <li>c) Operations Research</li> <li>d) Cost Management of Engineering Projects e) Composite Materials f) Waste to Energy</li> </ul>	3	0	0	3
3	DP	R2457DP01	Dissertation Phase – I	0	0	20	10
			Total	6	0	20	16

Category	Courses	Credits
PE- Professional Elective	1	3
OE- Open Elective	1	3
<b>DP- Dissertation Phase-I</b>	1	10
Total	3	16

#### **II Year II Semester- Course Structure**

S.No.	Category	Course Code	Course Code Subject Teaching Scheme		_	Credits	
			, and the second	L	T	P	
1	DP	Dissertation	Dissertation Phase – II		1	32	16
		Total Credits				32	16



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#### **Department of ELECTRONICS AND COMMUNICATION ENGINEERING**

Program: M.Tech- DECS Regulation: R24

#### **II Year I Semester- Course Structure**

S. No.	Category	Course Type/Code	Subject		Teachin Scheme	Credits	
		Type/code		L	T	P	
1	PE	R2438PE05.1 R2438PE05.2 R2438PE05.3	<ul><li>a) Detection &amp; Estimation Theory</li><li>b) Advanced Digital Signal Processing</li><li>c) Coding Theory and Applications</li></ul>	3	0	0	3
2	OE	R2438OE01.1 R2438OE01.2 R2438OE01.3 R2438OE01.4 R2438OE01.5 R2438OE01.6	<ul> <li>a) Business Analytics</li> <li>b) Industrial Safety</li> <li>c) Operations Research</li> <li>d) Cost Management of Engineering Projects</li> <li>e) Composite Materials</li> <li>f) Waste to Energy</li> </ul>	3	0	0	3
3	DP	R2438DP01	Dissertation Phase – I	0	0	20	10
		Total 6			0	20	16

Category	Courses	Credits
PE- Professional Elective	1	3
OE- Open Elective	1	3
DP- Dissertation Phase-I	1	10
Total	3	16

#### **II Year II Semester- Course Structure**

S. No.	Category	Course Type/Code	Subject		Ceachin Schem	Credits	
110.		Type/Code		L	T	P	
1	DP	R2438DP02	Dissertation Phase – II	0	0	32	16
		Total 0 0 32					16



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# College offering B.Tech Honors Degree in the following domains, and the student can take any one of domain to get B.Tech Honors by satisfying eligibility criteria.

S.No	Specialization	Offered By	Honors (For Students)
1	VLSI DESIGN	ECE	ECE
2	EMBEDDED SYSTEMS	ECE	ECE
3	ADVANCED COMMUNICATION SYSTEMS	ECE	ECE

#### 1. VLSI DESIGN

S.No	Subject Code	Year of Study	Subject		Т	P	С
1	R24ECVH201	II-II	Advanced VLSI Design	3	0	0	3
2	R24ECVH302	III-I	Introduction to CAD for VLSI	3	0	0	3
3	R24ECVH303	III-II	Design for testability	3	0	0	3
4	R24ECVH404	IV-I	VLSI Physical Design		0	0	3
5	R24ECVH405		NPTEL/MOOC Course-I (12 Weeks course/excluding the above subjects)	0	0	0	3
6	R24ECVH406		NPTEL/MOOC Course-II (12 Weeks course/ excluding the above subjects)	0	0	0	3
			Total	12	0	0	18

#### 2. EMBEDDED SYSTEMS

S.No	Subject Code	Year of Study	Subject	L	Т	P	С
1	R24ECEH201	II-II	Advanced Embedded systems	3	0	0	3
2	R24ECEH302	III-I	Real time Operating systems	3	0	0	3
3	R24ECEH303	III-II	Advanced Microcontrollers	3	0	0	3
4	R24ECEH404	IV-I	Embedded LINUX	3	0	0	3
5	R24ECEH405		NPTEL/MOOC Course-I (12 Weeks course/excluding the above subjects)	0	0	0	3
6	6 R24ECEH406 NPTEL/MOOC Course-II (12 Weeks course/ excluding the above subjects)		0	0	0	3	
			Total	12	0	0	18



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#### 3. ADVANCED COMMUNICATION SYSTEMS

S.No	Subject Code	Year of Study	Subject	L	Т	P	С
1	R24ECAH201	II-II	Modern Communication systems	3	0	0	3
2	R24ECAH302	III-I	RF and Microwave design	3	0	0	3
3	R24ECAH303	III-II	mm Wave Technology	3	0	0	3
4	R24ECAH404	IV-I	GPS and Navigation system	3	0	0	3
5	R24ECAH405		NPTEL/MOOC Course-I(12 Weeks course/excluding the above subjects)	0	0	0	3
6	R24ECAH406		NPTEL/MOOC Course-II(12 Weeks course/ excluding the above subjects)	0	0	0	3
	Total				0	0	18



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# College offering B.Tech Minors Degree in the following Specialization, and the student can take any one of Specialization to get B.Tech Minors by satisfying eligibility criteria.

S.No	Specialization	Offered By	Minors (For Students)
1	Digital Electronics in Modern Applications	ECE	CSE/CSE(AIML)/CSE(DS)/MECH
2	IoT based Embedded system Design	ECE	CSE/CSE(AIML)/CSE(DS)/MECH

#### SPECIALIZATION-1: DIGITAL ELECTRONICS IN MODERN APPLICATIONS

S.No	Subject Code	Year of Study	Subject	L	T	P	C
1	R24DEM201	II-II	Fundamentals of Digital Electronics	3	0	0	3
1	R24DEM202	II-II	Digital Electronics Lab	0	0	3	1.5
2	R24DEM301	III-I	Fundamentals of Signal Processing	3	0	0	3
3	R24DEM302	III-II	Fundamentals of VLSI Design	3	0	0	3
3	R24DEM303	III-II	VLSI Design Lab	0	0	3	1.5
4	R24DEM401	IV-I	Digital Design with Verilog	3	0	0	3
5	R24DEM001		NPTEL/MOOC Course-I (12 Weeks course/excluding the above subjects)	0	0	0	3
			Total	15	0	0	18

#### SPECIALIZATION-2: IoT BASED EMBEDDED SYSTEM DESIGN

S.No	Subject Code	Year of Study	Subject	L	Т	P	C
1	R24IEM201	II-II	Digital Electronics	3	0	0	3
1	R24IEM202	II-II	Digital Electronics Lab	0	0	3	1.5
2	R24IEM301	III-I	Microprocessor and its applications	3	0	0	3
3	R24IEM302	III-II	Microcontroller and its interfacing	3	0	3	3
3	R24IEM303	III-II	Microcontroller and interfacing Lab	0	0	3	1.5
4	R24IEM401	IV-I	Introduction to IoT and Embedded systems	3	0	0	3
5	R24IEM001		NPTEL/MOOC Course-I (12 Weeks course/ excluding the above subjects)	0	0	0	3
	•	•	Total	15	0	0	18