

Dr. Vasanthaodada Patil Shetkari Shikshan Mandal's
Padmabhooshan Vasanthaodada Patil Institute of Technology,
Budhgaon, Sangli (MS) – 416304

(An Autonomous Institute)

Affiliated to
Dr. Babasaheb Ambedkar Technological University,
Lonere, Raigad

(Accredited by NAAC)



Department of Electronics and Computer Science

Curriculum Structure for Undergraduate Degree Programme

B. Tech. in Electronics and Computer Science

In accordance with National Education Policy (NEP – 2020)

w. e. f.

Academic Year: 2026-27



Institute Vision

To be a premier autonomous institute known for academic excellence, research innovation, and transformative engineering education.

Institute Missions

Mission1: Academic Excellence

Providing quality engineering education through an outcome-based curriculum, effective teaching–learning processes, and continuous academic improvement.

Mission 2: Research and Innovation


Promoting a strong research and innovation culture by encouraging faculty and students to engage in research projects, publications, patents, and interdisciplinary collaborations.


Mission 3: Industry-Oriented learning

Strengthening industry–institute collaboration through internships, industry-supported laboratories, expert lectures, and real-world engineering projects to enhance employability.


Mission 4: Holistic and Ethical Development

Developing competent engineers with professional ethics, leadership qualities, lifelong learning ability, and commitment to societal and sustainable development.


Dr. K. K. Pandeyaji
H.O.D. ECS


Dr. K. K. Pandeyaji
Dean Academics




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Director

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Department of Electronics and Computer Science
Curriculum Structure and Evaluation Scheme
(Academic Year 2026-27 Onwards)

Department Vision

To be a well-known department recognized for pioneering research innovation and academic excellence, empowering students through transformative engineering education in electronics and computer science.

Department Missions

Mission 1: Academic Excellence

Providing strong fundamental and practical knowledge in Electronics and Computer Science through outcome based teaching-learning processes and usage of modern engineering tools

Mission 2: Research and Innovation


Encouraging faculties and students for innovation, research and, project-based learning to solve real-world problems.

Mission 3: Industry-Oriented learning

Enhancing industry interaction, technical skills and multidisciplinary learning through internships, training programs and emerging technologies

Mission 4: Holistic and Ethical Development

Nurturing socially responsible engineers capable of contributing effectively to societal and national technological development


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Programme Educational Objectives

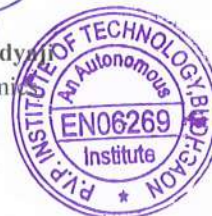
- PEO1:** Possess a lead role in electronics, communication and software system development to provide socially responsible and economically feasible solutions to meet the industry and societal needs.
- PEO2:** Utilize knowledge, skills and resources to design and develop novel and innovative solutions to real life problems in multidisciplinary environment.
- PEO3:** Exhibit Professionalism with moral values by adapting cutting edge technologies and continual research attitude in lifelong learning.

Knowledge and Attitude Profile (WK)

- WK1:** A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.
- WK2:** Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.
- WK3:** A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.
- WK4:** Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.
- WK5:** Knowledge, including efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.
- WK6:** Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.
- WK7:** Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.
- WK8:** Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.
- WK9:** Ethics, inclusive behaviour and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.


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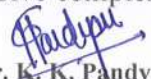
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Programme Outcome (POs & PSOs)

- PO1: Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization to develop to the solution of complex engineering problems (WK1 to WK4).
- PO2: Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
- PO3: Design/Development of Solutions:** Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
- PO4: Conduct Investigations of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).
- PO5: Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
- PO6: The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, & WK7).
- PO7: Ethics:** Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
- PO8: Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
- PO9: Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences
- PO10: Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
- PO11: Life-Long Learning:** Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)
- PSO1:** Analyze, design and develop electronics systems for communication, signal processing, Embedded and power electronics applications.
- PSO2:** Proficiency in applying concepts of computer science such as data structures, artificial intelligence and machine learning to solve complex engineering problems.


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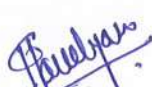





Legends Used

<i>L</i>	- <i>Lecture Hours / Week</i>
<i>T</i>	- <i>Tutorial Hours / Week</i>
<i>P</i>	- <i>Practical Hours / Week</i>
<i>CA</i>	- <i>Continuous Assessment</i>
<i>IES 1</i>	- <i>In Semester Evaluation – 1</i>
<i>IES 2</i>	- <i>In Semester Evaluation – 2</i>
<i>ESE</i>	- <i>End Semester Examination</i>
<i>MOOC</i>	- <i>Massive Open Online Course</i>
<i>NPTEL</i>	- <i>National Programme on Technology Enhanced Learning</i>
<i>FY</i>	- <i>First Year</i>
<i>SY</i>	- <i>Second Year</i>
<i>TY</i>	- <i>Third Year</i>
<i>B. Tech.</i>	- <i>Bachelor of Technology</i>
<i>MDM</i>	- <i>Multidisciplinary Minor</i>
<i>OE</i> -	<i>Open Elective</i>


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**Semester-wise Credit distribution for
 Four Year UG Engineering Programme in ECS (One Major, One Minor)**

Semester		I	II	III	IV	V	VI	VIII	VII	Total Credits
Basic Science Course	BSC/ESC	8	8	--	--	--	--	--	--	16
Engineering Science Course		6	9	4	--	--	--	--	--	19
Programme Core Courses (PCC)	Program Courses	--	--	11	15	13	16	9	3	67
Programme Elective Courses (PEC)		--	--	--	--	3	3	3	3	12
Multidisciplinary Minor (MDM)	Multidisciplinary Courses	--	--	3	3	3	3	2	--	14
Open Elective (OE) Other than particular program		--	--	--	2	2	--	--	--	4
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	1	2	--	1	--	2	--	--	6
Ability Enhancement Course (AEC-01, AEC-02)	Humanities Social Science and Management (HSSM)	3	--	--	1	--	--	--	--	4
Entrepreneurship / Economics / Management Courses		--	--	2	--	1	--	3	--	6
Indian Knowledge System (IKS)		2	--	--	--	--	--	--	--	2
Value Education Course (VEC)		--	--	2	2	--	--	--	--	4
Research Methodology		--	--	--	--	--	--	2	--	2
Comm. Engg. Project (CEP) / Field Project (FP)	Experimental Learning Courses	--	--	1	--	--	--	--	--	1
Project		--	--	--	--	--	--	4	2	6
Internship / OJT		--	--	--	--	--	--	--	10	10
Co-curricular Courses (CC)	Liberal Learning Courses	--	1	--	--	--	--	--	--	1
Total Credits (Major)		20	20	23	24	22	24	23	18	174

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Distribution of Credits

Course Category	Number of Subjects	Credits
Humanities, Social Science, and Management Courses + IKS(1)+VEC(2)	08	16
Basic Science Course (BSC)	04	16
Engineering Science Course (ESC)	05	19
Professional Core Course (PCC)	28	67
Professional Elective Course (PEC)	04	12
Open Elective Course (OEC)	02	04
Project work, Seminar/cep, and Internship in industry or elsewhere (PrSI) +RM	05	19
Mandatory Courses [Environmental Sciences, Induction Program , Indian Constitution, Essence of Indian Knowledge Tradition] (AUC) +CC	01	01
*VSEC	04	06
Total Credit Point		160
Minor Courses	05	14
Honours Courses	--	--


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S.Y. B. Tech. Semester III Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme					Total
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max	Minimum Marks for Passing	
0ECSESC201	Probability theory & Transforms	3	1	0	4	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC202	Analog Electronics	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC203	Data Structure and Algorithms	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC204	Digital Electronics	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSMDM205	MDM -I	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSVEC206	Environmental Studies	2	0	0	2	ISE	50	20	-	-	50
0ECSSHSM207	Principles of Management	2	0	0	2	ISE	50	20	-	-	50
0ECSPCC208	Analog and Digital Electronics Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSPCC209	Data Structure and Algorithms Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSCPE210	CEP Lab	0	0	2	1	ISE	-	-	50	20	50
TOTAL		19	1	6	23	Total Marks					850
Total Contact Hours Per Week		26									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	ISSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	4	11	-	3	-	-	-	2	-	2	-	1	-	-	-	23
Cumulative	16	19	11	-	3	-	3	3	2	2	2	-	1	-	-	1	63

Multidisciplinary Minor Bucket offered by Electronics and Computer Science

MDM-I (SEM – III)	0ECSMDM205	Fundamentals of IoT
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S.Y. B. Tech Semester IV Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme					Total
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max	Minimum Marks for Passing	
0ECSPCC251	Signals and Systems	3	1	0	4	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC252	Microcontrollers and Applications	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC253	Database Management	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC254	Java Programming	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSMDM255	MDM -II	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECISOE256	Open Elective -I	2	0	0	2	ISE	50	20	-	-	50
0ECSAEC257	Soft Skills	0	0	2	1	ISE	25	10	-	-	25
0ECSVEC258	Universal Human Values	2	0	0	2	ISE	50	20	-	-	50
0ECSVSEC259	Computational Lab	0	0	2	1	ISE	-	-	25	10	25
0ECSPCC260	Microcontrollers and Applications Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSPCC261	Database Management Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
TOTAL		19	1	8	24	Total Marks					850
Total Contact Hours Per Week		28									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	HSSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	-	15	-	3	2	1	1	-	-	2	-	-	-	-	-	24
Cumulative	16	19	26	-	6	2	4	4	2	2	4	-	1	-	-	1	87

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Multidisciplinary Minor Bucket offered by Electronics and Computer Science


MDM-II (SEM – IV)	0ECSMDM255	IoT Technologies and Protocols
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Open Elective-I offered by Electronics and Computer Science

OE - I (SEM – IV)	0ECSSOE256	Intellectual Property Rights
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List Open Elective for Semester-IV

Sr. No.	Department offering Open Elective to other Departments	Course Code	Course Title
1	Artificial Intelligence and Data Science	0AIOE256	Prompt Engineering
2	Civil Engineering	0CVOE256	Disaster Management
3	Chemical Engineering	0CHOE256	Introduction to AI in Process Industries
4	Computer Science and Engineering	0CSOE256	Information Security
5	Electrical and Computer Engineering	0ECEOE256	Sustainable Power Generation
6	Electronics and Computer Science	0ECSSOE256	Intellectual Property Rights
7	Electronics and Telecommunication	0ETOE256	Digital Marketing
8	Instrumentation and Control Engineering	0ICOE256	Industrial Economics
9	Mechanical Engineering	0MEOE256	Industrial Safety


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T.Y. B. Tech Semester V Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme					Total
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max	Minimum Marks for Passing	
0ECSPCC301	Embedded Systems	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC302	Industrial and Power Electronics	3	1	0	4	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC303	Computer Networks	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPEC304	Programme Elective Course - I	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSMDM305	MDM-III	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSOE306	Open Elective - II	2	0	0	2	ISE	50	20	-	-	50
0ECSSHSSM307	Entrepreneurship Development	1	0	0	1	ISE	50	20	-	-	50
0ECSPCC308	Embedded Systems Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSPCC309	Industrial and Power Electronics Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSPCC310	Computer Networks Lab	0	0	2	1	ISE	-	-	50	20	50
TOTAL		18	1	6	22	TOTAL MARKS					850
Total Contact Hours Per Week		25									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	HSSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	-	13	3	3	2	-	-	1	-	-	-	-	-	-	-	22
Cumulative	16	19	39	3	9	4	4	4	3	2	4	-	1	-	-	1	109

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Multidisciplinary Minor Bucket offered by Electronics and Computer Science

MDM-III (SEM – V)	0ECSMDM305	Industrial IoT
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Open Elective-II offered by Electronics and Computer Science


OE - II (SEM – V)	0ECISOE306	Investment and Financial Planning
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Programme Elective Course - I

SEM - V	0ECSPEC304A	Analog and Digital Communication
	0ECSPEC304B	Control System
	0ECSPEC304C	Advanced Java Programming

List Open Elective for Semester-V

Sr. No.	Department offering Open Elective to other Departments	Course Code	Course Title
1	Artificial Intelligence and Data Science	0AIOE306	Generative AI
2	Civil Engineering	0CVOE306	Human Resources Development
3	Chemical Engineering	0CHOE306	Energy Audit and Conservation
4	Computer Science and Engineering	0CSOE306	Ethical Hacking
5	Electrical and Computer Engineering	0ECEOE306	Intelligent Energy Management
6	Electronics and Computer Science	0ECISOE306	Investment and Financial Planning
7	Electronics and Telecommunication	0ETOE306	Remote Sensing and GIS
8	Instrumentation and Control Engineering	0ICOE306	Principles of Finance and Economics
9	Mechanical Engineering	0MEOE306	Economics for Engineers


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T.Y. B. Tech Semester VI Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme					Total
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max	Minimum Marks for Passing	
0ECSPCC351	Artificial Intelligence and Machine Learning	3	1	0	4	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC352	Digital Image Processing	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC353	Cloud Computing	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC354	Web Development and Testing	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPEC355	Programme Elective Course - II	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSMDM356	MDM-IV	3	0	0	3	ISE	50	20	-	-	50
0ECSVSEC357	Mini Project	0	0	4	2	ISE			50	20	50
0ECSPCC358	Digital Image Processing Lab	0	0	2	1	ISE			50	20	50
						ESE			50	20	50
0ECSPCC359	Cloud Computing Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE			50	20	50
0ECSPCC360	Web Development and Testing Lab	0	0	2	1	ISE	-	-	50	20	50
TOTAL		18	1	10	24	TOTAL MARKS					850
Total Contact Hours Per Week		29									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	HSSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	-	16	3	3	-	2	-	-	-	-	-	-	-	-	-	24
Cumulative	16	19	55	6	12	4	6	4	3	2	4	-	1	-	-	1	133

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Multidisciplinary Minor Bucket offered by Electronics and Computer Science

MDM-IV (SEM – VI)	0ECSMDM356	IoT System Design
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Programme Elective Course-II

SEM - VI	0ECSPEC355A	Information Theory and Coding
	0ECSPEC355B	Advanced Control System
	0ECSPEC355C	VLSI Design

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B. Tech. Semester VII Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme					Total
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max	Minimum Marks for Passing	
0ECSPCC401	Internet of Things	3	1	0	4	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPCC402	Dev Ops	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSPEC403	Programme Elective Course - III	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSSHSSM404	Project Management	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ECSMDM405	MDM-V	0	0	4	2	ISE	-	-	50	20	50
0ECSRM406	Research Methodology	2	0	0	2	ISE	-	-	50	20	50
0ECSPCC407	Internet of Things Lab	0	0	2	1	ISE	-	-	50	20	50
						ESE	-	-	50	20	50
0ECSPCC408	Dev Ops Lab	0	0	2	1	ISE	-	-	50	20	50
0ECSPR409	Project Phase – I	0	0	8	4	ISE	-	-	100	40	100
						ESE	-	-	100	40	100
TOTAL		14	1	16	23	TOTAL MARKS					850
Total Contact Hours Per Week		31									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	HSSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	-	9	3	2	-	-	-	3	-	-	2	-	4	-	-	23
Cumulative	16	19	64	9	14	4	6	4	6	2	3	2	1	4	-	1	156

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Multidisciplinary Minor Bucket offered by Electronics and Computer Science

MDM-V (SEM – VII)	0ECSMDM405	Mini Project
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Programme Elective Course- III

SEM - VII	0ECSPEC403A	Wireless Communication
	0ECSPEC403B	AI based Control System
	0ECSPEC403C	System on Chip


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B. Tech. Semester VIII Electronics and Computer Science

Course Code	Course Name	Teaching Scheme				Evaluation Scheme				Total	
		L	T	P	Credit	Scheme	Theory		Practical		
							Max	Minimum Marks for Passing	Max		Minimum Marks for Passing
0ICPCC451	MOOC Course – I	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ICPEC452	MOOC Course – II	3	0	0	3	ISE 1	10	40*	-	-	100
						MSE	20				
						ISE 2	10				
						ESE	60				
0ICPR453	Project Phase – II	0	0	4	2	ISE	-	-	50	20	50
						ESE	-		50	20	50
0ICOJT454	Internship / OJT	0	0	20	10	ISE	-	-	100	40	100
						ESE	-		100	40	100
TOTAL		6	0	24	18	TOTAL MARKS				500	
Total Contact Hours Per Week		30									

Course Category	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	HSSM	IKS	VEC	RM	CEP	PR	OJT	CC	Total
Credit	-	-	3	3	-	-	-	-	-	-	-	-	-	2	10	-	18
Cumulative	16	19	67	12	14	4	6	4	6	2	4	2	1	6	10	1	174

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Open Elective List

OE	Course Code	Open Elective	Semester	Credits
I	0ECSOE256	Intellectual Property Rights	IV	2
II	0ECSOE306	Investment and Financial Planning	V	2

Multidisciplinary Minor Bucket offered by Electronics and Computer Science

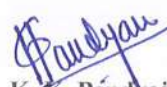
MDM	Course Code	Multidisciplinary Minor	Semester	Credits
I	0ECSMDM205	Fundamentals of IoT	III	3
II	0ECSMDM255	IoT Technologies and Protocols	IV	3
III	0ECSMDM305	Industrial IoT	V	3
IV	0ECSMDM356	IoT System Design	VI	3
V	0ECSMDM405	Mini Project	VII	2

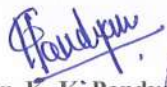
Program Elective Course

Sr. No.	Stream Name	Program Elective Course – I (0ICPEC304)	Program Elective Course – II (0ICPEC355)	Program Elective Course – III (0IPEC403)
	Class \Rightarrow	B. Tech (Sem – V)	B. Tech (Sem – VI)	B. Tech (Sem – VII)
01	Communication	Analog and Digital Communication	Information Theory and Coding	Wireless Communication
02	Control Systems	Control System	Advanced Control System	AI based Control Systems
03	IC Design	Advanced Java Programming	VLSI Design	System on Chip

Semester – wise Credits

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	20	20	23	24	22	24	23	18	174


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Sr. No.	MDM Track	MDM Course (Sem III-VII)	Department offering this MDM Track	Department may opt this MDM Track	Department may not opt this MDM Track
1	Artificial Intelligence	Introduction to AI	Artificial Intelligence and Data Science	<ul style="list-style-type: none"> • Chemical Engg. • Civil Engg. • Electronics and Telecomm. • Instrumentation and Control • Mechanical Engg. 	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Computer Science & Engg. • Electrical and Computer Engg. • Electronics and Computer Sci,
		Prompt Engineering			
		Introduction to Machine Learning			
		Generative AI			
		Mini Project			
2	Construction Management	Engineering Management	Civil Engineering	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Chemical Engg. • Computer Science & Engg. • Electrical and Computer Engg. • Electronics and Computer Sci, • Electronics and Telecomm. • Instrumentation and Control • Mechanical Engg. 	Civil Engineering
		Supply Chain Management			
		Engineering Procurement and Construction Contract			
		Project Management			
		Mini Project			


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Sr. No.	MDM Track	MDM Course (Sem III-VII)	Department offering this MDM Track	Department may opt this MDM Track	Department may not opt this MDM Track
3	Energy and Environment	Environmental Engineering & Pollution Control	Chemical Engineering	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Civil Engg. • Computer Science & Engg • Electrical and Computer Engg. • Electronics and Computer Sci. • Electronics and Telecomm. • Instrumentation and Control • Mechanical Engg. 	Chemical Engineering
		Introduction to Sustainable Energy Systems			
		Energy Conservation and Recovery			
		Carbon Capture, Utilization, and Storage (CCUS)			
		Mini Project			
4	Cyber Security	Network Security	Computer Science and Engineering	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Chemical Engg. • Civil Engg. • Electrical and Computer Engg. • Electronics and Computer Sci. • Electronics and Telecomm. • Instrumentation and Control • Mechanical Engg. 	Computer Science and Engineering
		Fundamentals of Cryptography			
		Cloud security			
		Cyber forensics			
		Mini Project			


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Sr. No.	MDM Track	MDM Course (Sem III-VII)	Department offering this MDM Track	Department may opt this MDM Track	Department may not opt this MDM Track
5	Electric Vehicles	Fundamental of Electric Vehicles	Electrical and Computer Engineering	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Chemical Engg. • Civil Engg. • Computer Science & Engg • Electronics and Computer Sci. • Electronics and Telecomm. • Instrumentation and Control • Mechanical Engg. 	Electrical and Computer Engineering
		EV Energy and Charging Systems			
		Electric Drives and Motor Control for EVs			
		Sustainable Mobility and Emerging EV Technologies			
		Mini Project			
6	Internet of Things	Fundamentals of IoT	Electronics and Computer Science	<ul style="list-style-type: none"> • Chemical Engg. • Civil Engg • Instrumentation and Control • Mechanical Engg. 	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Computer Science & Engg. • Electrical and Computer Engg. • Electronics and Computer Sci. • Electronics and Telecomm.
		IoT Technologies and Protocols			
		Industrial IoT			
		IoT System Design			
		Mini Project			


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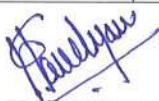

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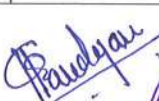
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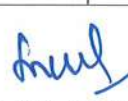
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Sr. No.	MDM Track	MDM Course (Sem III-VII)	Department offering MDM Track	Eligible Departments	Departments Not Eligible
7	Communication	Analog Communication	Electronics and Telecommunication	<ul style="list-style-type: none"> • Artificial Intelligence and Data Science • Chemical Engg. • Civil Engg • Computer Science & Engg. • Electrical and Computer • Mechanical Engg. 	<ul style="list-style-type: none"> • Electronics and Computer Sci. • Electronics and Telecomm • Instrumentation and Control
		Digital Communication			
		Mobile and Satellite Communication			
		Introduction to Arduino and IOT			
		Mini Project			
8	Intelligent Sensory System	Measuring Instruments	Instrumentation and Control Engineering	<ul style="list-style-type: none"> • AIDS Artificial Intelligence and Data Science • Chemical Engg. • Civil Engg • Computer Science & Engg. • Electronics and Computer Sci. • Mechanical Engg 	<ul style="list-style-type: none"> • Electrical and Computer • Electronics and Telecomm • Instrumentation and Control
		Electrical and Electronics Measurement			
		Linear Integrated Circuits			
		Process Equipment Design			
		Mini Project			
9	Robotics and Automation	Micro electro Mechanical Systems (MEMS)	Mechanical Engineering	<ul style="list-style-type: none"> • AIDS Artificial Intelligence and Data Science • Chemical Engg. • Civil Engg • Computer Science & Engg. • Electrical and Computer • Electronics and Computer Sci. • Electronics and Telecomm 	<ul style="list-style-type: none"> • Instrumentation and Control • Mechanical Engg.
		Robotics			
		Mechatronics			
		Industrial Automation			
		Mini Project			


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