

Section 3: Academic Programmes and Curriculum

Section B: Academic Programmes and Curriculum

S. No.	Item	Details																																																																	
3.1	Programmes Offered	B.Tech – Civil Engineering (1A01) B.Tech – Electrical and Electronics Engineering (1A02) B.Tech – Mechanical Engineering (1A03) B.Tech – Electronics and Communication Engineering (04) B.Tech – Computer Science and Engineering (05) B.Tech – Computer Science and Engineering – AIML (33) M.Tech – Computer Science (1D05) PG – Master of Business Administration (1E00) PG – Master of Computer Applications (1F00)																																																																	
3.2	Curriculum Framework	Course Structure (R23): <table><tr><th rowspan="2">Course Code</th><th rowspan="2">Category</th><th rowspan="2">Course Title</th><th colspan="3">Contact Periods Per Week</th><th rowspan="2">Credits</th></tr><tr><th>L</th><th>T</th><th>P</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Professional Electives Tracks (R23): <table><tr><th>Track</th><th>PE – I</th><th>PE – II</th><th>PE – III</th><th>PE – IV</th><th>PE – V</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Open Electives (R23): <table><tr><th>S. No.</th><th>Category</th><th>Titles</th></tr><tr><td>1</td><td>Open Elective -1</td><td></td></tr><tr><td>2</td><td>Open Elective-2</td><td></td></tr><tr><td>3</td><td>Open Elective-3</td><td></td></tr><tr><td>4</td><td>Open Elective-4</td><td></td></tr></table> Credits Distribution: <table><tr><th>S. No.</th><th>Category</th><th>Credit Breakup</th></tr><tr><td>1.</td><td>Humanities and Social Sciences including Management courses</td><td>11</td></tr><tr><td>2.</td><td>Basic Science Courses</td><td>20</td></tr><tr><td>3.</td><td>Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.</td><td>32.5</td></tr><tr><td>4.</td><td>Professional Core Courses</td><td>52.5</td></tr><tr><td>5.</td><td>Professional Elective courses relevant to chosen specialization/branch</td><td>15</td></tr><tr><td>6.</td><td>Open subjects – Electives from other technical and /or emerging subjects</td><td>12</td></tr></table>	Course Code	Category	Course Title	Contact Periods Per Week			Credits	L	T	P								Track	PE – I	PE – II	PE – III	PE – IV	PE – V							S. No.	Category	Titles	1	Open Elective -1		2	Open Elective-2		3	Open Elective-3		4	Open Elective-4		S. No.	Category	Credit Breakup	1.	Humanities and Social Sciences including Management courses	11	2.	Basic Science Courses	20	3.	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.	32.5	4.	Professional Core Courses	52.5	5.	Professional Elective courses relevant to chosen specialization/branch	15	6.	Open subjects – Electives from other technical and /or emerging subjects	12
Course Code	Category	Course Title				Contact Periods Per Week				Credits																																																									
			L	T	P																																																														
Track	PE – I	PE – II	PE – III	PE – IV	PE – V																																																														
S. No.	Category	Titles																																																																	
1	Open Elective -1																																																																		
2	Open Elective-2																																																																		
3	Open Elective-3																																																																		
4	Open Elective-4																																																																		
S. No.	Category	Credit Breakup																																																																	
1.	Humanities and Social Sciences including Management courses	11																																																																	
2.	Basic Science Courses	20																																																																	
3.	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.	32.5																																																																	
4.	Professional Core Courses	52.5																																																																	
5.	Professional Elective courses relevant to chosen specialization/branch	15																																																																	
6.	Open subjects – Electives from other technical and /or emerging subjects	12																																																																	

7.	Project work and internship in industry or elsewhere	16
8.	Skill Enhancement Courses	10
9.	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Technical Paper Writing & IPR]	noncredit
Total		169

Learning Outcomes:

Engineering Knowledge: Apply the knowledge of Mathematics, Science, Engineering fundamentals, and Engineering specialization to the solution of Complex Engineering Problems.

Problem Analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of Mathematics, Natural, and Engineering Sciences.

Design/Development of Solutions: Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.

Conduct Investigations of Complex Problems: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and Team Work: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.

Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.

Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team.

		Manage projects in multidisciplinary environments. Life Long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.																																																																																
3.3	Academic Calendar	All year students are studying under Autonomous regulations. Our college has to adhere strictly to the Academic Calendar issued by the JNTUA for students studying under JNTUA. University at the beginning of each semester releases the academic calendar. It Includes details of different spells of instructions, schedules for mid examinations, preparation and Practical's, End Examinations and they also include commencement date of class work for next semester. Principal convenes CAC meeting with all heads of the departments and prepares an Academic Calendar in line with the university Academic calendar reflecting the activities or events planned by College and Departments. For students under Autonomous regulations, The Institution releases two different levels of Academic Calendar which are prepared at the beginning of each semester are Institutional Academic Calendar and Departmental Academic Calendar. The Institutional Academic Calendar is released at the beginning of semester by IQAC and Departmental Academic Calendar issued by concerned department. It includes various curricular, co-curricular and extracurricular activities. The institute strictly adheres to the academic calendar in conducting the internal examinations in Theory, Labs, audit courses, Term Work, Career Competent Development, Technical Seminars, Projects etc. <u>NECR B. Tech R23 II Year & III Year – Semester - I (A.Y.: 2025-26)</u> <table><tr><th colspan="5">Commencement of Semester From: 30-06-2025</th></tr><tr><th></th><th>From</th><th>-</th><th>To</th><th>No. of Days</th></tr><tr><td>First Unit of Instructions</td><td>30-06-2025</td><td>-</td><td>14-08-2025</td><td>37</td></tr><tr><td>Mid-Term-1 Examinations</td><td>18-08-2025</td><td>-</td><td>20-08-2025</td><td>03</td></tr><tr><td>Second Unit of Instructions</td><td>21-08-2025</td><td>-</td><td>17-10-2025</td><td>44</td></tr><tr><td>Mid-Term-2 Examinations</td><td>18-10-2025</td><td>-</td><td>22-10-2025</td><td>03</td></tr><tr><td>Semester End Laboratory Examinations</td><td>23-10-2025</td><td>-</td><td>30-10-2025</td><td>09</td></tr><tr><td>Semester End Examinations</td><td>03-11-2025</td><td>-</td><td>15-11-2025</td><td>11</td></tr></table> <u>NECR B. Tech R23 IV Year – Semester - I (A.Y.: 2025-26)</u> <table><tr><th colspan="5">Commencement of Semester From: 30-06-2025</th></tr><tr><th></th><th>From</th><th>-</th><th>To</th><th>No. of Days</th></tr><tr><td>First Unit of Instructions</td><td>30-06-2025</td><td>-</td><td>14-08-2025</td><td>37</td></tr><tr><td>Mid-Term-1 Examinations</td><td>18-08-2025</td><td>-</td><td>20-08-2025</td><td>03</td></tr><tr><td>Second Unit of Instructions</td><td>21-08-2025</td><td>-</td><td>18-10-2025</td><td>45</td></tr><tr><td>Mid-Term-2 Examinations</td><td>21-10-2025</td><td>-</td><td>23-10-2025</td><td>03</td></tr><tr><td>Semester End Laboratory Examinations</td><td>23-10-2025</td><td>-</td><td>30-10-2025</td><td>09</td></tr><tr><td>Semester End Examinations</td><td>03-11-2025</td><td>-</td><td>15-11-2025</td><td>11</td></tr></table>	Commencement of Semester From: 30-06-2025						From	-	To	No. of Days	First Unit of Instructions	30-06-2025	-	14-08-2025	37	Mid-Term-1 Examinations	18-08-2025	-	20-08-2025	03	Second Unit of Instructions	21-08-2025	-	17-10-2025	44	Mid-Term-2 Examinations	18-10-2025	-	22-10-2025	03	Semester End Laboratory Examinations	23-10-2025	-	30-10-2025	09	Semester End Examinations	03-11-2025	-	15-11-2025	11	Commencement of Semester From: 30-06-2025						From	-	To	No. of Days	First Unit of Instructions	30-06-2025	-	14-08-2025	37	Mid-Term-1 Examinations	18-08-2025	-	20-08-2025	03	Second Unit of Instructions	21-08-2025	-	18-10-2025	45	Mid-Term-2 Examinations	21-10-2025	-	23-10-2025	03	Semester End Laboratory Examinations	23-10-2025	-	30-10-2025	09	Semester End Examinations	03-11-2025	-	15-11-2025	11
Commencement of Semester From: 30-06-2025																																																																																		
	From	-	To	No. of Days																																																																														
First Unit of Instructions	30-06-2025	-	14-08-2025	37																																																																														
Mid-Term-1 Examinations	18-08-2025	-	20-08-2025	03																																																																														
Second Unit of Instructions	21-08-2025	-	17-10-2025	44																																																																														
Mid-Term-2 Examinations	18-10-2025	-	22-10-2025	03																																																																														
Semester End Laboratory Examinations	23-10-2025	-	30-10-2025	09																																																																														
Semester End Examinations	03-11-2025	-	15-11-2025	11																																																																														
Commencement of Semester From: 30-06-2025																																																																																		
	From	-	To	No. of Days																																																																														
First Unit of Instructions	30-06-2025	-	14-08-2025	37																																																																														
Mid-Term-1 Examinations	18-08-2025	-	20-08-2025	03																																																																														
Second Unit of Instructions	21-08-2025	-	18-10-2025	45																																																																														
Mid-Term-2 Examinations	21-10-2025	-	23-10-2025	03																																																																														
Semester End Laboratory Examinations	23-10-2025	-	30-10-2025	09																																																																														
Semester End Examinations	03-11-2025	-	15-11-2025	11																																																																														

		NECR24 (MBA & MCA) II Year - I –Semester (A.Y.: 2025-26) <table><tr><th colspan="5">Commencement of Semester From : 14-07-2025</th></tr><tr><th></th><th>From</th><th>-</th><th>To</th><th>No. of Days</th></tr><tr><td>First Unit of Instructions</td><td>14-07-2025</td><td>-</td><td>02-09-2025</td><td>40</td></tr><tr><td>Mid-Term-1 Examinations</td><td>03-09-2025</td><td>-</td><td>06-09-2025</td><td>03</td></tr><tr><td>Second Unit of Instructions</td><td>08-09-2025</td><td>-</td><td>04-11-2025</td><td>45</td></tr><tr><td>Mid-Term-2 Examinations</td><td>05-11-2025</td><td>-</td><td>07-11-2025</td><td>03</td></tr><tr><td>Semester End Laboratory Examinations</td><td>10-11-2025</td><td>-</td><td>15-11-2025</td><td>06</td></tr><tr><td>Semester End Examinations</td><td>17-11-2025</td><td>-</td><td>29-11-2025</td><td>12</td></tr></table>	Commencement of Semester From : 14-07-2025						From	-	To	No. of Days	First Unit of Instructions	14-07-2025	-	02-09-2025	40	Mid-Term-1 Examinations	03-09-2025	-	06-09-2025	03	Second Unit of Instructions	08-09-2025	-	04-11-2025	45	Mid-Term-2 Examinations	05-11-2025	-	07-11-2025	03	Semester End Laboratory Examinations	10-11-2025	-	15-11-2025	06	Semester End Examinations	17-11-2025	-	29-11-2025	12																																																																																																																																																																																													
Commencement of Semester From : 14-07-2025																																																																																																																																																																																																																																							
	From	-	To	No. of Days																																																																																																																																																																																																																																			
First Unit of Instructions	14-07-2025	-	02-09-2025	40																																																																																																																																																																																																																																			
Mid-Term-1 Examinations	03-09-2025	-	06-09-2025	03																																																																																																																																																																																																																																			
Second Unit of Instructions	08-09-2025	-	04-11-2025	45																																																																																																																																																																																																																																			
Mid-Term-2 Examinations	05-11-2025	-	07-11-2025	03																																																																																																																																																																																																																																			
Semester End Laboratory Examinations	10-11-2025	-	15-11-2025	06																																																																																																																																																																																																																																			
Semester End Examinations	17-11-2025	-	29-11-2025	12																																																																																																																																																																																																																																			
3.4	Innovative and Interdisciplinary Offerings	Honours: COURSES OFFERED FOR HONOURS DEGREE IN CIVIL ENGINEERING <table><tr><th rowspan="2">S.No</th><th rowspan="2">Course Code</th><th rowspan="2">Course Title</th><th colspan="3">Contact Hours per week</th><th rowspan="2">Credits</th></tr><tr><th>L</th><th>T</th><th>P</th></tr><tr><td>1</td><td>23A01H01</td><td>Soil Dynamics and Machine Foundation</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>2</td><td>23A01H02</td><td>Industrial Waste and Waste Water Management</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>3</td><td>23A01H03</td><td>Repair & Rehabilitation of Structures</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>4</td><td>23A01H04</td><td>Design and Drawing of Irrigation Structures</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>5</td><td>23A01H05</td><td>Road Safety Engineering</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>6</td><td>23A01H06</td><td>NDT Lab</td><td>0</td><td>0</td><td>3</td><td>1.5</td></tr><tr><td>7</td><td>23A01H07</td><td>ETABS/SAP Lab</td><td>0</td><td>0</td><td>3</td><td>1.5</td></tr><tr><td colspan="6">Total</td><td>18</td></tr></table> COURSES OFFERED FOR HONOURS DEGREE IN EEE (ELECTRIC VEHICLES) <table><tr><th rowspan="2">S.No.</th><th rowspan="2">Course Code</th><th rowspan="2">Course Name</th><th colspan="2">Contact Hours per week</th><th rowspan="2">Credits</th></tr><tr><th>L</th><th>P</th></tr><tr><td>1</td><td>23A02H01</td><td>E - Mobility</td><td>3</td><td>-</td><td>3</td></tr><tr><td>2</td><td>23A02H02</td><td>Battery Management Systems</td><td>3</td><td>-</td><td>3</td></tr><tr><td>3</td><td>23A02H03</td><td>Special Machines for Electric Vehicles</td><td>3</td><td>-</td><td>3</td></tr><tr><td>4</td><td>23A02H04</td><td>Grid Interface of Electric Vehicles</td><td>3</td><td>-</td><td>3</td></tr><tr><td>5</td><td>23A02H05</td><td>EV Charging Technologies</td><td>3</td><td>-</td><td>3</td></tr><tr><td>6</td><td>23A02H06</td><td>Project on Electric Vehicles</td><td>-</td><td>6</td><td>3</td></tr></table> COURSES OFFERED FOR HONOURS DEGREE IN MECHANICAL ENGINEERING <table><tr><th>S. No.</th><th>Course Code</th><th>Title</th><th>L</th><th>T</th><th>P</th><th>Credits</th></tr><tr><td>1</td><td>23A03H01</td><td>Automotive Thermal Systems</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>2</td><td>23A03H02</td><td>Simulation and Modelling of Manufacturing Systems</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>3</td><td>23A03H03</td><td>Supply Chain Management</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>4</td><td>23A03H04</td><td>Advanced Mechanism Design</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>5</td><td>23A03H05</td><td>Bio Mechanics</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>6</td><td>23A03H06</td><td>Applied Project Work</td><td>0</td><td>0</td><td>6</td><td>3</td></tr><tr><td colspan="3">Total</td><td>15</td><td>0</td><td>6</td><td>18</td></tr></table> COURSES OFFERED FOR HONOURS DEGREE WITH VLSI SPECIALIZATION IN ELECTRONICS AND COMMUNICATION ENGINEERING <table><tr><th>S. No.</th><th>Course Code</th><th>Title</th><th>L</th><th>T</th><th>P</th><th>Credits</th></tr><tr><td>1</td><td>23A04H01</td><td>Analog IC Design.</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>2</td><td>23A04H02</td><td>Digital IC Design</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>3</td><td>23A04H03</td><td>Low power VLSI</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>4</td><td>23A04H04</td><td>Testing and Verification</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>5</td><td>23A04H05</td><td>FPGA architectures</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>6</td><td>23A04H06</td><td>Analog and Digital IC Design Lab</td><td>0</td><td>0</td><td>3</td><td>1.5</td></tr><tr><td>7</td><td>23A04H07</td><td>Physical Design Automation Lab</td><td>0</td><td>0</td><td>3</td><td>1.5</td></tr><tr><td colspan="3">Total</td><td>15</td><td>0</td><td>06</td><td>18</td></tr></table>	S.No	Course Code	Course Title	Contact Hours per week			Credits	L	T	P	1	23A01H01	Soil Dynamics and Machine Foundation	3	0	0	3	2	23A01H02	Industrial Waste and Waste Water Management	3	0	0	3	3	23A01H03	Repair & Rehabilitation of Structures	3	0	0	3	4	23A01H04	Design and Drawing of Irrigation Structures	3	0	0	3	5	23A01H05	Road Safety Engineering	3	0	0	3	6	23A01H06	NDT Lab	0	0	3	1.5	7	23A01H07	ETABS/SAP Lab	0	0	3	1.5	Total						18	S.No.	Course Code	Course Name	Contact Hours per week		Credits	L	P	1	23A02H01	E - Mobility	3	-	3	2	23A02H02	Battery Management Systems	3	-	3	3	23A02H03	Special Machines for Electric Vehicles	3	-	3	4	23A02H04	Grid Interface of Electric Vehicles	3	-	3	5	23A02H05	EV Charging Technologies	3	-	3	6	23A02H06	Project on Electric Vehicles	-	6	3	S. No.	Course Code	Title	L	T	P	Credits	1	23A03H01	Automotive Thermal Systems	3	0	0	3	2	23A03H02	Simulation and Modelling of Manufacturing Systems	3	0	0	3	3	23A03H03	Supply Chain Management	3	0	0	3	4	23A03H04	Advanced Mechanism Design	3	0	0	3	5	23A03H05	Bio Mechanics	3	0	0	3	6	23A03H06	Applied Project Work	0	0	6	3	Total			15	0	6	18	S. No.	Course Code	Title	L	T	P	Credits	1	23A04H01	Analog IC Design.	3	0	0	3	2	23A04H02	Digital IC Design	3	0	0	3	3	23A04H03	Low power VLSI	3	0	0	3	4	23A04H04	Testing and Verification	3	0	0	3	5	23A04H05	FPGA architectures	3	0	0	3	6	23A04H06	Analog and Digital IC Design Lab	0	0	3	1.5	7	23A04H07	Physical Design Automation Lab	0	0	3	1.5	Total			15	0	06	18
S.No	Course Code	Course Title				Contact Hours per week				Credits																																																																																																																																																																																																																													
			L	T	P																																																																																																																																																																																																																																		
1	23A01H01	Soil Dynamics and Machine Foundation	3	0	0	3																																																																																																																																																																																																																																	
2	23A01H02	Industrial Waste and Waste Water Management	3	0	0	3																																																																																																																																																																																																																																	
3	23A01H03	Repair & Rehabilitation of Structures	3	0	0	3																																																																																																																																																																																																																																	
4	23A01H04	Design and Drawing of Irrigation Structures	3	0	0	3																																																																																																																																																																																																																																	
5	23A01H05	Road Safety Engineering	3	0	0	3																																																																																																																																																																																																																																	
6	23A01H06	NDT Lab	0	0	3	1.5																																																																																																																																																																																																																																	
7	23A01H07	ETABS/SAP Lab	0	0	3	1.5																																																																																																																																																																																																																																	
Total						18																																																																																																																																																																																																																																	
S.No.	Course Code	Course Name	Contact Hours per week		Credits																																																																																																																																																																																																																																		
			L	P																																																																																																																																																																																																																																			
1	23A02H01	E - Mobility	3	-	3																																																																																																																																																																																																																																		
2	23A02H02	Battery Management Systems	3	-	3																																																																																																																																																																																																																																		
3	23A02H03	Special Machines for Electric Vehicles	3	-	3																																																																																																																																																																																																																																		
4	23A02H04	Grid Interface of Electric Vehicles	3	-	3																																																																																																																																																																																																																																		
5	23A02H05	EV Charging Technologies	3	-	3																																																																																																																																																																																																																																		
6	23A02H06	Project on Electric Vehicles	-	6	3																																																																																																																																																																																																																																		
S. No.	Course Code	Title	L	T	P	Credits																																																																																																																																																																																																																																	
1	23A03H01	Automotive Thermal Systems	3	0	0	3																																																																																																																																																																																																																																	
2	23A03H02	Simulation and Modelling of Manufacturing Systems	3	0	0	3																																																																																																																																																																																																																																	
3	23A03H03	Supply Chain Management	3	0	0	3																																																																																																																																																																																																																																	
4	23A03H04	Advanced Mechanism Design	3	0	0	3																																																																																																																																																																																																																																	
5	23A03H05	Bio Mechanics	3	0	0	3																																																																																																																																																																																																																																	
6	23A03H06	Applied Project Work	0	0	6	3																																																																																																																																																																																																																																	
Total			15	0	6	18																																																																																																																																																																																																																																	
S. No.	Course Code	Title	L	T	P	Credits																																																																																																																																																																																																																																	
1	23A04H01	Analog IC Design.	3	0	0	3																																																																																																																																																																																																																																	
2	23A04H02	Digital IC Design	3	0	0	3																																																																																																																																																																																																																																	
3	23A04H03	Low power VLSI	3	0	0	3																																																																																																																																																																																																																																	
4	23A04H04	Testing and Verification	3	0	0	3																																																																																																																																																																																																																																	
5	23A04H05	FPGA architectures	3	0	0	3																																																																																																																																																																																																																																	
6	23A04H06	Analog and Digital IC Design Lab	0	0	3	1.5																																																																																																																																																																																																																																	
7	23A04H07	Physical Design Automation Lab	0	0	3	1.5																																																																																																																																																																																																																																	
Total			15	0	06	18																																																																																																																																																																																																																																	

COURSES OFFERED FOR HONOURS DEGREE IN CSE

S.No.	Course Code	Course Title	Contact Hours per week			Credits
			L	T	P	
1	23A32603	Quantum Computing	3	0	0	3
2	23A05H01	No SQL Databases	3	0	0	3
3	23A05H02	Software Defined Data Centre	3	0	0	3
4	23A05H03	Robotics and Intelligent Systems	3	0	0	3
5	23A05H04	Cloud Security	3	0	0	3
6	23A05H05	No SQL Lab			3	1.5
7	23A05H06	Quantum & Cloud Computing Lab			3	1.5

COURSES OFFERED FOR HONOURS DEGREE IN CSE-AI & ML

S. No	Course Name	Contact Hours Per Week			Credits
		L	T	P	
1	Advanced Machine Learning & AI Systems	3	0	0	3
2	Deep Learning & Neural Networks	3	0	0	3
3	Reinforcement Learning & Decision Making	3	0	0	3
4	AI for Robotics & Automation	3	0	0	3
5	AI Ethics, Fairness & Explainability	3	0	0	3
6	AI & Machine Learning Lab	0	0	3	1.5
7	Robotics & Autonomous Systems Lab	0	0	3	1.5

Minors:

LIST OF MINORS OFFERED BY THE CIVIL ENGINEERING

BUILDING PLANNING & CONSTRUCTION TECHNOLOGY

S.No.	Code	Course Name	Contact Hours per week			Credits
			L	T	P	
1	23A01M01	Construction Materials	3	-	0	3
2	23A01M02	Construction Methods	3	-	0	3
3	23A01M03	Building Planning And Drawing	3	-	0	3
4	23A01M04	Surveying	3	-	0	3
5	23A01M05	Concrete Technology	3	-	0	3
6	23A01M06	Concrete Technology Lab	0	0	3	1.5
7	23A01M07	Surveying Lab	0	0	3	1.5

MINORS in ENERGY SYSTEMS (EEE Department)

S.No	Code	Course Name	Contact Hours per week			Credits
			L	T	P	
1		Energy Audit and Management	3	-	0	3
2		Energy Management in Building	3	-	0	3
3		Energy Storage Technologies	3	-	0	3
4		Energy Scenario and Energy Policy	3	-	0	3
5		Waste Energy Management	3	-	0	3
6		Project in Energy Systems	-	-	6	3

MINORS in MICRO GRID TECHNOLOGY (EEE Department)

S.No.	Code	Course Name	Contact Hours per week			Credits
			L	T	P	
1		Futuristic Power Systems	3	0	0	3
2		Power Electronic Converters for Energy Sources	3	0	0	3
3		Microgrid Power and Control Architecture	3	0	0	3
4		Microgrid System Design	3	0	0	3
5		Analysis of Smart Grid Systems	3	0	0	3
6		Project in Micro Grid Technology	0	0	6	3

		Open Elective – II <table><tr><th>S. No.</th><th>Course Code</th><th>Course Name</th><th>Offered by the Dept.</th></tr><tr><td>1</td><td></td><td>Disaster Management</td><td rowspan="2">Civil</td></tr><tr><td>2</td><td></td><td>Sustainability in Engineering Practices</td></tr><tr><td>3</td><td></td><td>Renewable Energy Sources</td><td>EEE</td></tr><tr><td>4</td><td></td><td>Automation and Robotics</td><td>ME</td></tr><tr><td>5</td><td></td><td>Digital Electronics</td><td>ECE</td></tr><tr><td>6</td><td></td><td>Operating Systems</td><td rowspan="2">CSE& Allied/IT</td></tr><tr><td>7</td><td></td><td>Introduction of Machine Learning</td></tr><tr><td>8</td><td></td><td>Optimization Techniques for Engineers</td><td rowspan="2">Mathematics</td></tr><tr><td>9</td><td></td><td>Mathematical Foundation of Quantum Technologies</td></tr><tr><td>10</td><td></td><td>Physics of Electronic Materials and Devices</td><td>Physics</td></tr><tr><td>11</td><td></td><td>Chemistry of Polymers and Applications</td><td>Chemistry</td></tr><tr><td>12</td><td></td><td>Academic Writing and Public Speaking</td><td>Humanities</td></tr></table>	S. No.	Course Code	Course Name	Offered by the Dept.	1		Disaster Management	Civil	2		Sustainability in Engineering Practices	3		Renewable Energy Sources	EEE	4		Automation and Robotics	ME	5		Digital Electronics	ECE	6		Operating Systems	CSE& Allied/IT	7		Introduction of Machine Learning	8		Optimization Techniques for Engineers	Mathematics	9		Mathematical Foundation of Quantum Technologies	10		Physics of Electronic Materials and Devices	Physics	11		Chemistry of Polymers and Applications	Chemistry	12		Academic Writing and Public Speaking	Humanities
S. No.	Course Code	Course Name	Offered by the Dept.																																																
1		Disaster Management	Civil																																																
2		Sustainability in Engineering Practices																																																	
3		Renewable Energy Sources	EEE																																																
4		Automation and Robotics	ME																																																
5		Digital Electronics	ECE																																																
6		Operating Systems	CSE& Allied/IT																																																
7		Introduction of Machine Learning																																																	
8		Optimization Techniques for Engineers	Mathematics																																																
9		Mathematical Foundation of Quantum Technologies																																																	
10		Physics of Electronic Materials and Devices	Physics																																																
11		Chemistry of Polymers and Applications	Chemistry																																																
12		Academic Writing and Public Speaking	Humanities																																																
3.5	Industry-Integrated Courses	Skill Enhancement Courses: 1. Building Planning and Drawing 2. Soft Skills 3. Design Thinking & Innovation 4. Estimation, Specifications, Costing & Valuation 5. Data Structures 6. Python Programming 7. Machine Tools & Metrology Lab 8. PCB Design and Prototype Development 9. Full Stack Development-1 10. Full Stack development - II																																																	
3.6	Academic Partnerships	MOU’s: <u>Memorandum of Understanding</u> <table><tr><th>S. No.</th><th>Company/Organization</th><th>Date</th><th>Logo</th></tr><tr><td>1</td><td>LINCOLN University College</td><td>19-07-2018</td><td></td></tr><tr><td>2</td><td>Institute of Management and Foreign Studies</td><td>06-11-2024</td><td></td></tr></table>	S. No.	Company/Organization	Date	Logo	1	LINCOLN University College	19-07-2018		2	Institute of Management and Foreign Studies	06-11-2024																																						
S. No.	Company/Organization	Date	Logo																																																
1	LINCOLN University College	19-07-2018																																																	
2	Institute of Management and Foreign Studies	06-11-2024																																																	

DEPARTMENT OF CIVIL ENGINEERING				
Sl. No.	Name of the Institution/ Industry/ Corporate House	Month and Year of signing MoU	Duration	Logo
1	Krish Infratech Constructions Pvt- Ltd- Tirupathi	2022	Lifetime	
2	Canter CADD ,Nellore	2020	Lifetime	
3	MEIL, Hyderabad	2018	Lifetime	
4	Sesritha Technology India Pvt. Ltd. Nellore	2018	Lifetime	
5	Assistive CADD, Nellore	2017	Lifetime	
6	Guru Raghavendra Infrastructures, Nellore	2017	Lifetime	
7	D.S.N.M-Global Solutions, Guntur	2013	Lifetime	

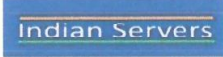
DEPARTMENT OF MECHANICAL ENGINEERING

s.no	Company	Date of signing MOU	Company logo
1.	DODLA DAIRY LIMITED	23-11-2022	
2.	NELCAST LIMITED	21-10-2022	
3.	SRI SRIKALAHASTHI PIPES LIMITED	09-01-2023	
4.	Assistive cad Nellore	10-08-2022	
5.	Canter cadd	01-0-2024	
6.	Lakshmi srinivasa steel products	20-01-2023	

Department of Electronics and Communication Engineering

S.NO	ORGANIZATION WITH WHICH MOUS ASSIGNED	DATE OF SIGNING MOU	ORGANIZATION LOGO
1	ScienTECH, Indore	06-09-2014	
2	TakeOff Group, Tiruppathi	23-10-2017	
3	Wine Yard Technologies, Hyderabad	27-10-2017	
4	GreenCorner, Nellore	10-04-2018	
5	EDGate Technologies Pvt, Ltd, Bangalore	23-08-2018	
6	Star Technologies, Chennai	22-11-2018	
7	Valika Electronics	06-12-2021	
8	Nippo, Indo National Limited, Tada	23-04-2016	
9	SS Technologies Pvt Ltd, Hyderabad	28-12-2015	
10	Pantech Solutions, Chennai	21-04-2016	

Department of Computer Science and Engineering			
S.NO	ORGANIZATION WITH WHICH MOU IS SIGNED	DATE OF SIGNING MOU	ORGANIZATION LOGO
1	Indstack It Consulting Pvt Ltd, Hyd	09/12/2024	
2	Cyber Security Centre of Excellence, Hyd	17/06/2022	
3	Women in Cyber Security and Privacy, Bangalore	09/11/2021	
4	Sree Vidyanikethan Engineering College, Tirupati	22/10/2019	
5	VSS INNOVATIVE TECHNOLOGIES	28/01/2019	
6	Assistive Technologies	02/01/2019	
7	YoungMind Technology Solutions, Hyderabad	25/01/2018	
8	Sphere Soft Solutions India Pvt. Ltd, Hyd	09/01/2018	

9	Nirvin IT Solutions, Hyderabad	22/12/2017	
10	SecNet Technologies, Chennai	13/11/2017	
11	Indian Servers Pvt.Ltd, Vijayawada	13/09/2017	
12	ISKCON, Nellore	13/09/2017	
13	CodeTantra Tech Solutions Pvt Ltd , Hyderabad	17/08/2017	
14	Lotus Technologies, Nellore	15/12/2016	
15	After Campus Pvt. Ltd, Hyd	02/08/2016	
16	Beezas IT Solutions Pvt-Ltd. Hyd	22/08/2015	

Department of MBA – List of MoUs

S.No	Name of the Company/Organization	Date of MOU	LOGO
1	BMR Industries Pvt. Ltd	24-Oct-17	
2	Cifal Herbal Pvt. Ltd	25-Oct-17	
3	Nelcast Ltd.	24-Jan-18	
4	MGB Felicity Mall	14-Feb-18	

3.7	Pedagogy and Learning Methodologies	At Narayana Engineering College (Autonomous), Gudur, the teaching–learning process is systematically designed in alignment with Outcome-Based Education (OBE) principles to ensure that every course contributes effectively to the attainment of Program Outcomes (POs), Program Specific Outcomes (PSOs), and Course Outcomes (COs). The focus is shifted from teacher-centered instruction to Student-centered education, enabling students to acquire not only knowledge but also essential skills, attitudes, and competencies required for real-world engineering practice. Key Teaching–Learning Pedagogies Followed 1. Outcome-Oriented Lesson Planning ✓ Each course is planned with clearly defined Course Outcomes (COs) mapped to POs and PSOs. ✓ Lesson plans and teaching schedules are prepared in advance, incorporating innovative and participative learning methods. 2. Blended Learning Approach ✓ Integration of traditional classroom teaching with online learning platforms such as NPTEL, SWAYAM, and MOOCs. ✓ Use of digital tools like Google Classroom, LMS portals, and multimedia resources to enhance learning engagement. 3. Active Learning Strategies ✓ Implementation of Think–Pair–Share, Peer Teaching, Flipped Classroom, Group Discussions, Case Studies, and Problem-Based Learning (PBL). ✓ Encouragement of critical thinking and creativity through classroom interactions and mini projects. 4. Experiential and Project-Based Learning ✓ Students are exposed to hands-on experience through laboratory experiments, mini projects, major projects, and industrial internships. ✓ Real-time problem-solving activities connect theoretical concepts with practical engineering applications. 5. Collaborative and Cooperative Learning ✓ Team-based assignments and projects promote teamwork, communication, and leadership qualities. ✓ Collaborative learning environments enable peer evaluation and knowledge sharing. 6. Use of ICT and Modern Teaching Aids ✓ ICT based classrooms, simulations, virtual labs, and e-content are used to make learning interactive and technology-driven. ✓ Use of modern software tools like MATLAB, Simulink, AutoCAD, etc., depending on the discipline. 7. Continuous Assessment and Feedback Mechanism ✓ Periodic formative and summative assessments help monitor CO attainment.
-----	-------------------------------------	---

		✓ Constructive feedback from students and faculty is used to refine teaching methods and learning materials. 8. Skill-Oriented and Value-Added Programs ✓ Certification courses, workshops, seminars, and guest lectures by industry experts bridge the gap between academia and industry. ✓ Emphasis on professional ethics, lifelong learning, and social responsibility. 9. Mentoring and Remedial Support ✓ Each student is assigned a faculty mentor to guide academic and personal development. ✓ Slow and advanced learners are supported through remedial classes, tutorial sessions, and enrichment programs.
3.8	Student – Teacher Ratio	At Narayana Engineering College (Autonomous), Gudur, the institution maintains an optimal Faculty–Student Ratio of 1:20, as per AICTE and NBA norms. This ratio ensures that every student receives personalized attention, effective mentoring, and quality academic support throughout their learning journey. Maintaining this ratio enhances the overall teaching–learning process, enabling faculty members to adopt interactive, learner-centered pedagogies aligned with Outcome-Based Education (OBE). It also facilitates regular monitoring of student performance, providing timely feedback and academic guidance. Benefits of Maintaining 1:20 Faculty–Student Ratio: 1. Personalized Attention: Faculty can focus on individual learning needs, helping students strengthen conceptual understanding. 2. Effective Mentoring: Each faculty member can mentor a smaller group of students, ensuring better academic and career guidance. 3. Enhanced Learning Outcomes: Smaller class sizes promote more interactive discussions, collaborative learning, and active participation. 4. Efficient Evaluation and Feedback: Continuous assessments and feedback become more meaningful and timely. 5. Improved Academic Performance: Students receive dedicated support, leading to higher retention and success rates. 6. Facilitation of Innovative Pedagogies: Enables faculty to implement advanced teaching methods such as flipped classrooms, problem-based learning, and project-based learning effectively. Institutional Practice: The institution regularly reviews the faculty–student ratio during the academic planning process to ensure compliance with regulatory standards and to uphold the quality of education. Recruitment and workload distribution are managed accordingly to sustain this balance across all programs and departments.