



NARSIMHA REDDY ENGINEERING COLLEGE

UGC AUTONOMOUS INSTITUTION

Maisammaguda (V), Kompally - 500100, Secunderabad, Telangana State, India

UGC - Autonomous Institute
Accredited by NBA & NAAC with 'A' Grade
Approved by AICTE
Permanently affiliated to JNTUH

INSTITUTION VISION AND MISSION

Vision of the Institute:

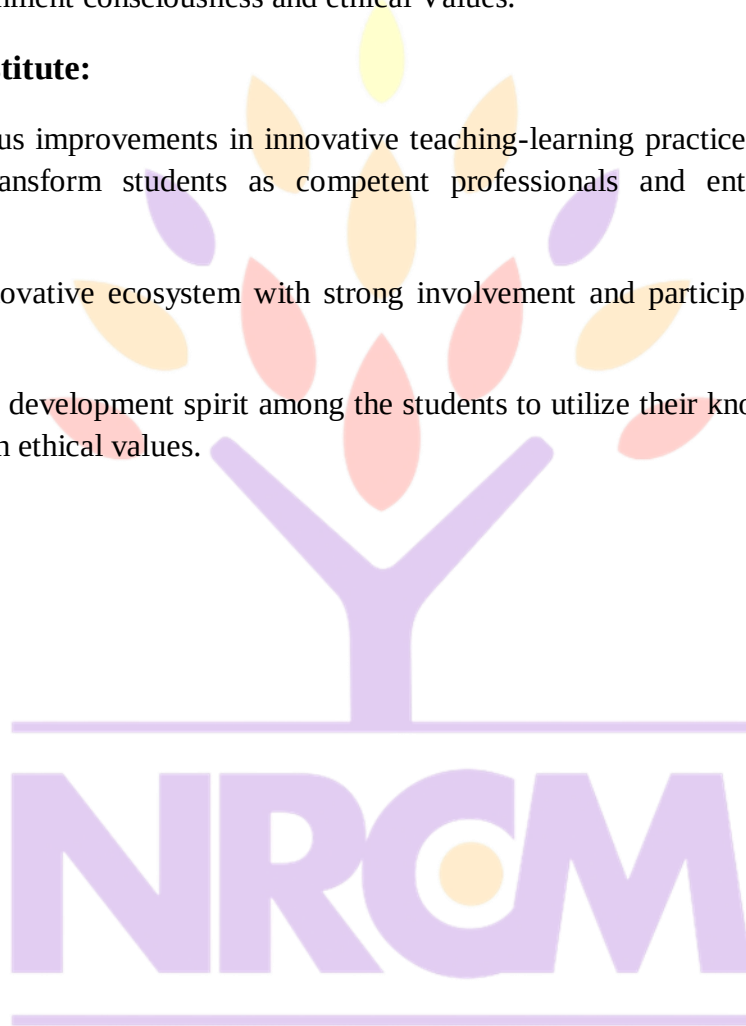
To produce competent professionals who can contribute to the industry, research and societal benefits with environment consciousness and ethical Values.

Mission of the Institute:

M1: Adapt continuous improvements in innovative teaching-learning practices and state-of-the-art infrastructure to transform students as competent professionals and entrepreneurs in multi-disciplinary fields.

M2: Develop an innovative ecosystem with strong involvement and participation of students and faculty members.

M3: Impart National development spirit among the students to utilize their knowledge and skills for societal benefits with ethical values.



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Department Vision & Mission

Vision of the Department:

To evolve into a center of excellence in Electronics & Communications Engineering through creative and innovative practices in teaching-learning and Research in consonance with the contemporary and future needs of the country.

Mission of the Department:

To realize the department's vision, various academic and extra-curricular activities will be organized. The goal of these activities will be to:

- i. To inspire and encourage development of key ideas and innovations that can contribute to socio-economic development of India as well as world.
- ii. To identify and collaborate with experts, professionals, academicians, commercial and various governmental bodies and develop an environment conducive to research and development.
- iii. To offer state-of-the-art programs that inspires and motivates students in perusing the role of researchers and developers through higher learning programs.



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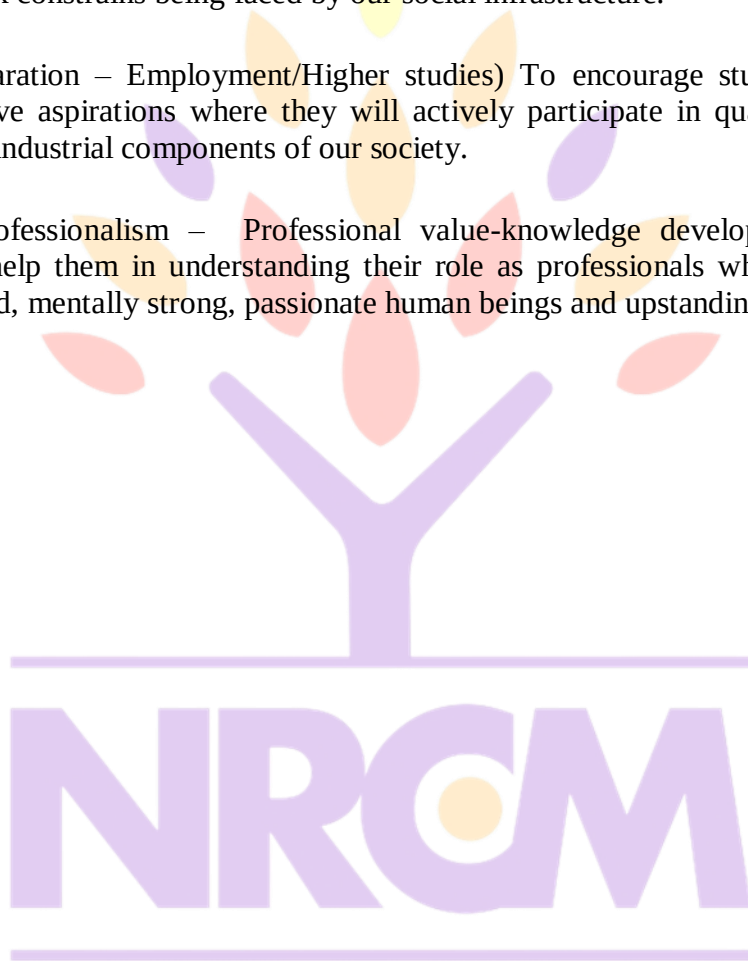
PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs:

PEO-I:(Core competence – Discipline knowledge) To motivate and mold students in to world class professionals by cultivating a fundamental desire to learn and apply the acquired skill sets in complex constraints being faced by our social infrastructure.

PEO-II:(Preparation – Employment/Higher studies) To encourage students in striving for higher cognitive aspirations where they will actively participate in quality improvement of academic and industrial components of our society.

PEO-III: (Professionalism – Professional value-knowledge development) To enlighten students and help them in understanding their role as professionals who are well groomed, ethically poised, mentally strong, passionate human beings and upstanding citizens.



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PROGRAM OUTCOMES (POs)

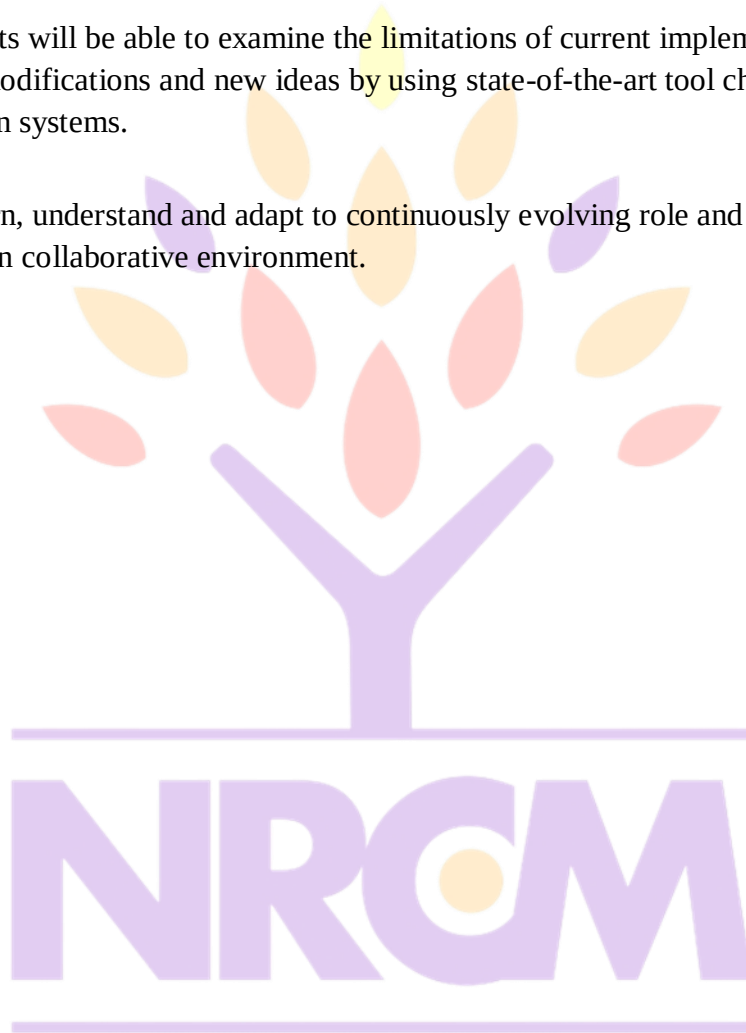
1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	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.
6	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.
7	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.
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	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.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Enabling the students to apply the knowledge of algorithm analysis, modeling, circuit design and verification methodologies to use and manage electro-mechanical systems that are integral part of modern socio-economic framework.

PSO2: Students will be able to examine the limitations of current implementation strategies and propose modifications and new ideas by using state-of-the-art tool chain in electronic communication systems.

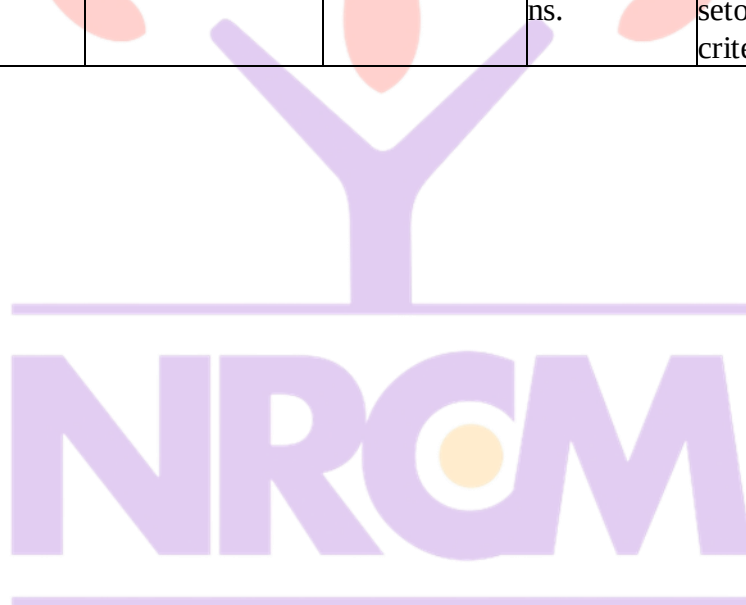
PSO3: To learn, understand and adapt to continuously evolving role and ethical needs of professionals in collaborative environment.



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REVISED Bloom's Taxonomy Action Verbs

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.



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ACADEMIC CALENDAR :: 2025-26

B.TECH III YEAR I & II SEMESTER

I SEM

S.No.	Description	Duration		Duration (Weeks)
		From	To	
1	Commencement of I Semester class work	30.06.2025		
2	1 st Spell of Instructions	30.06.2025	30.08.2025	9
3	First Mid Term Examinations	01.09.2025	06.09.2025	1
4	2 nd Spell of Instructions (Including Dussera Recess)	08.09.2025	15.11.2025	10
5	Second Mid Term Examinations	17.11.2025	22.11.2025	1
6	Preparation Holiday & Lab Examinations	24.11.2025	29.11.2025	1
7	End Semester Examinations	01.12.2025	13.12.2025	2

II SEM

S.No.	Description	Duration		Duration (Weeks)
		From	To	
1	Commencement of II Semester class work	15.12.2025		
2	1 st Spell of Instructions	15.12.2025	21.02.2026	10
3	First Mid Term Examinations	23.02.2026	28.02.2026	1
4	2 nd Spell of Instructions	02.03.2026	02.05.2026	9
5	Second Mid Term Examinations	04.05.2026	09.05.2026	1
6	Summer Vacation	11.05.2026	23.05.2026	2
7	Preparation Holiday & Lab Examinations	25.05.2026	30.05.2026	1
8	End Semester Examinations	01.06.2026	13.06.2026	2

Copy to:

1. Deans
2. IQAC
3. All HODs
4. Administrative Officer
5. Account officer
6. Web Portal I/C
7. ERP I/C
8. Library
9. Student Notice Boards


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R22 B.Tech. EEE Syllabus

JNTU Hyderabad

EE503PC: MICROPROCESSORS & MICROCONTROLLERS

III Year B.Tech. EEE I-Sem

L TP C
3 0 0 3

Prerequisite: Programming, Digital Electronics

Course Objectives:

1. To develop an understanding of the operations of microprocessors and micro controllers
2. To understand machine language programming and interfacing techniques.
3. To gain knowledge about input output and memory systems.

Course Outcomes: At the end of this course, students will be able to:

4. Understand the internal architecture and organization of 8086, 8051 and ARM processors/controllers.
5. Understand the interfacing techniques to 8086 and 8051
6. Develop assembly language programming to design microprocessor/ micro controller-based systems.

UNIT-I:

8086 Architecture-Pin diagram, Register Organization, Memory Segmentation, Programming Model, Modes of operation, Timing diagrams, Memory addresses, Physical Memory Organization, interrupts of 8086.

Instruction Set And Assembly Language Programming Of 8086: Instruction formats, addressing modes, Instruction Set, Assembler Directives, Macros, and Simple Programs involving Logical, Branch and Call Instructions, Sorting, String Manipulations, Software Debugging tools, MDS.

UNIT-II:

I/O Interface: 8255 PPI, Various modes of operations and interface of I/O devices to 8086, A/D, D/A Converter Interfacing.

Interfacing With Advanced Devices: 8086 System bus structure, Memory and I/O Interfacing with 8086, Interfacing through various IC Peripheral Chips, 8257 (DMA Controller), 8259 (Interrupt Priority Control).

UNIT-III:

Communication Interface: Serial Communication Standards, USART Interfacing RS-232, IEEE-488, 20mA Current Loop, Prototyping and Troubleshooting,

UNIT-IV:

Introduction To Micro Controllers: Overview of 8051 Micro Controller, Architecture, I/O ports and Memory Organization, addressing modes and Instruction set of 8051, Simple Programs using Stack Pointer, Assembly language programming of 8051

Interrupts Communication: Interrupts - Timer/Counter and Serial Communication, Interrupt Priority in the 8051, Programming of 8051- Timers, Counters and Interrupts.

UNIT-V:

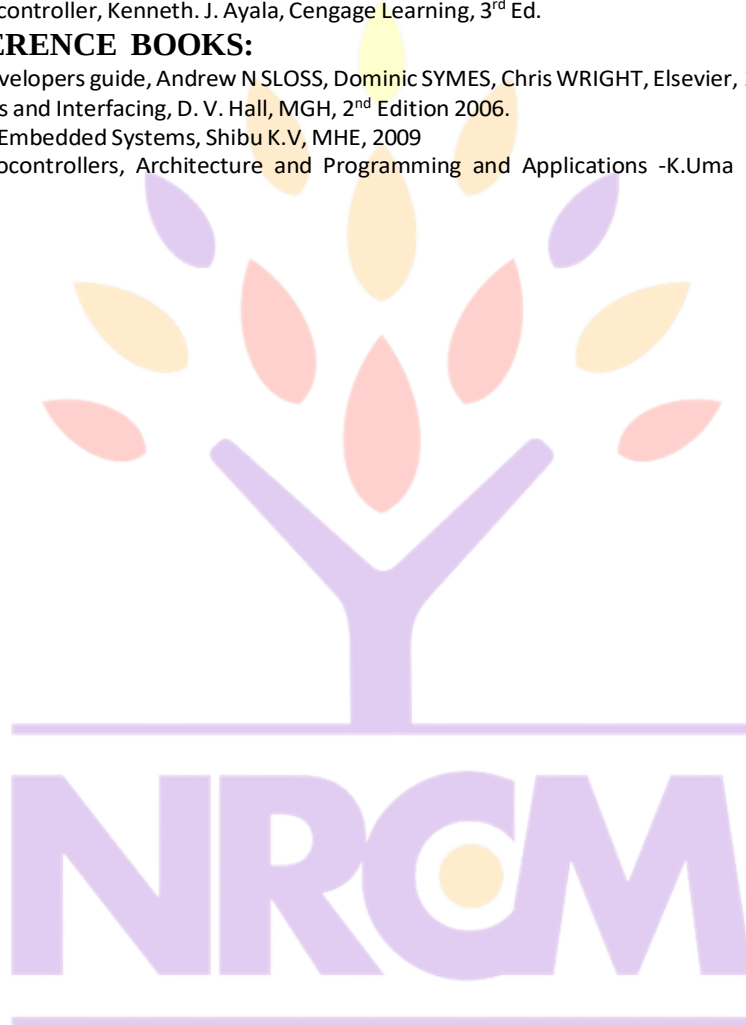
Interfacing And Industrial Applications: Applications of Micro Controllers, Interfacing 8051 to LED's, Keyboard Interfacing, Interfacing Seven Segment Display, ADC and DAC Interfacing, Stepper Motor Interfacing

TEXT BOOKS:

1. Advanced Microprocessors and Peripherals – A. K. Ray and K.M. Bhurchandani, MHE, 2nd Edition 2006.
2. The 8051 Microcontroller, Kenneth. J. Ayala, Cengage Learning, 3rd Ed.

REFERENCE BOOKS:

1. ARM System Developers guide, Andrew N SLOSS, Dominic SYMES, Chris WRIGHT, Elsevier, 2012
2. Microprocessors and Interfacing, D. V. Hall, MGH, 2nd Edition 2006.
3. Introduction to Embedded Systems, Shibu K.V, MHE, 2009
4. The 8051 Microcontrollers, Architecture and Programming and Applications -K.Uma Rao, Andhe Pallavi, Pearson, 2009.



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Department of Electrical and Electronics Engineering

TIME TABLE

AY (2025-2026)

YEAR: III YEAR ■ SEM -1

Class In-charges:

Mr.K.Chaitanya

ROOM NUMBER:MT 320

w.e.f : 02-07-2025

DAY/TIME	1	2	3	12.30 PM -1.20PM	4	5	6
H/T	9.30AM-10.30AM	10.30AM-11.30AM	11.30AM-12.30PM		1.20PM-2.10PM	2.10PM-3.00PM	3.00PM-3.50PM
Mon	BEFA	PE	MPMC	LUNCH	MPMC LAB		
Tue	EIE	MPMC	PE		CS	EIE	BEFA
Wed	PE	BEFA	EIE		MPMC	CS	IPR
Thu	CS	EIE	PE		CS	EIE	MPMC
Fri	CS	MPMC	BEFA		PE LAB		
Sat	ACS LAB				PE	EIE	PE

III	NR23	FACULTY NAME
23EE501	Power Electronics	Mrs.Ch Prasanna
23EE502	Control Systems	Mrs.A.Lakshmi Devi
23EC503	Micro processors & Micro controllers	Mrs.M.Veena
23EE505(PE)	Electrical Installation and Estimation	Mr.K.Chaitanya
23MB504	Business Economics and Financial Analysis	Mrs.B.Sirisha
23EC508	Micro processors & Micro controllers Laboratory	Mrs.M.Veena
23EE509	Power Electronics Laboratory	Mrs.Ch Prasanna
23EN508	Advanced English Communication Skills Laboratory	Dr.Ch.Nageswara Rao
*MC5001	Intellectual Property Rights	Mr.K.Chaitanya


Timetable Incharge


HOD-EEE
HEAD OF THE DEPARTMENT
ELECTRICAL & ELECTRONICS ENGINEERING
NARSIMHA REDDY ENGINEERING COLLEGE
MAISAMMAGUDA, DHULLAPALLY(P).
SECUNDERABAD, TELANGANA-500 100


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PROMOTION LIST (2025-2026) – III B.Tech, I Semester ELECTRICAL AND ELECTRONICS ENGINEERING

S.No	Roll Number	Full Name
1	23X01A0201	ANDE JEEVAN REDDY
2	23X01A0202	BAKKA PRAVEEN KUMAR
3	23X01A0204	BATTINENI ABHIRAM
4	23X01A0205	BONTHA JAGADISH
5	23X01A0206	CHELLA KIRAN KUMAR
6	23X01A0207	CHIKKUDU ESHWAR
7	23X01A0208	CHILIVERU VIJAY KUMAR
8	23X01A0209	CHITEMPALLY THARUN
9	23X01A0210	DHARAVATH AKHIL
10	23X01A0211	EMMADI HARI
11	23X01A0212	JALLI CHAITANYA
12	23X01A0214	KOMMETA RAMDAS
13	23X01A0215	KUNCHAM PRANITH
14	23X01A0216	MADIREDDY DEEKSHITHA REDDY
15	23X01A0219	MORALA SAI KIRAN
16	23X01A0221	NAYENI ARAVIND
17	23X01A0222	PICHUKULA VARSHINI
18	23X01A0223	PILLY RAKESH
19	23X01A0224	PUTTALA UDAY KIRAN
20	23X01A0225	RAIPALLY PRANAY
21	23X01A0226	REDDY MANOHAR
22	23X01A0227	S UDAY
23	23X01A0228	SAMALA SIDDARTHA
24	23X01A0229	SIGINAM PRAGATH
25	23X01A0230	SONAPURAM PRAVEENKUMAR
26	23X01A0231	VASI SANDHYA RANI
27	24X05A0201	ALLE NITHISH KUMAR
28	24X05A0202	CHEKOLEKAR AKASH
29	24X05A0203	CHINNOLLA SHIVA RAJ
30	24X05A0204	JATOTHU SRIKANTH
31	24X05A0205	MALYALA NITHISH
32	24X05A0206	MOOD NIKHITHA
33	24X05A0207	RAJARAPU TEJA

Note: As per the Academic Regulation of NR23 the students who got less credits than the stipulated credits for the promotion from II B.Tech to III B.Tech will be detained after announcement of Regular & Supplementary Results. Hence, all the Head's and students please make a note of it. **Detained list due to shortage of credit and revised Nominal Rolls will be circulated immediately after declaration of results.**



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LESSONPLAN

Branch: EEE Year : III Semester 1

AcademicYear:2024-25

Subject: MICROPROCESSORS AND MICROCONTROLLER Sub Code:

Name of the faculty: Y.MARYMANIKYAVEENA

Lecture No.	Date (As per Academic calendar)	Topics to be covered	Actual Date of completion	Remarks
		UNIT-I:		
1.	30-06-2025	Introduction to microprocessors		
2.	1-07-2025	Evolution of processor		
3.	2-07-2025	Architecture of 8086		
4.	3-07-2025	Architecture of 8086		
5.	05-07-2025	Register organization		
6.	08-07-2025	Instruction queue		
7.	10-07-2025	Flag register		
8.	12-07-2025	Memory segmentation		
9.	14-07-2025	Generation of physical address		
10.	15-07-2025	Programming model		
11.	17-07-2025	Modes of operation		
12.	19-07-2025	Pin diagrams		
13.	22-07-2025	Timing diagrams		
14.	23-07-2025	Memory addresses		
15.	26-07-2025	Interrupts of 8086		
16.	28-07-2025	Instruction formats		
17.	29-07-2025	Instruction formats		
18.	30-07-2025	Addressing modes		
19.	31-07-2025	Addressing modes		
20.	01-08-2025	Instruction set		
21.	04-08-2025	Assembler directives		
22.	05-08-2025	Macros		
23.	06-08-2025	Simple programs		
24.	07-08-2025	Sorting		

25.	11-08-2025	String manipulations		
		UNIT -2 I/O Interface		

26.	12-08-2025	8255 PPI		
Lecture No.	Date (As per Academic calendar)	Topics to be covered	Actual Date of completion	Remarks
27.	13-08-2025	Various modes of operations OF 8086		
28.	14-08-2025	interface of I/O devices to 8086,		
	18-08-2025	, A/D converter interfacing		
29.	19-08-2025	D/A Converter Interfacing.		
30.	21-08-2025	8086 System bus structure		
31.	22-08-2025	Memory Interfacing with 8086		
32.	23-08-2025	I/O Interfacing with 8086		
33.	25-08-2025	Interfacing through various IC Peripheral Chips,		
34.	26-08-2025	8257 (DMA Controller),		
35.	27-08-2025	8257 (DMA Controller),		
36.	28-08-2025	8259 (Interrupt Priority Control).		
		UNIT-3 COMMUNICATION INTERFACE		
37.	29-08-2025	Serial Communication Standard		
38.	29-08-2025	Serial Communication Standard		
39.	30-08-2025	USART Interfacing RS-232		
40	30-08-2025	USART Interfacing RS-232		
41	08-09-2025	IEEE-488,		
42.	09-09-2025	20mA Current Loop		
43.	10-09-2025	Prototyping		
44.	11-09-2025	Troubleshooting,		
45.	15-09-2025	IEEE-488,		
		UNIT – 4 INTRO TO MICROCONTROLLER		
46.	16-09-2025	Overview of 8051 Micro Controller,		
47.	17-09-2025	Architecture,		
48.	18-09-2025	I/O ports		
49.	19-09-2025	Memory Organization		
50.	22-09-2025	addressing modes		
51.	23-09-2025	Instruction set of 8051,		



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52.	24-09-2025	Instruction set of 8051,		
53.	26-09-2025	Simple Programs using Stack		
54.	03-10-2025	Simple Programs using Pointer		
55.	06-10-2025	Assembly language programming of 8051		
56.	07-10-2025	Interrupts		

57.	09-10-2025	Timer/Counter		
58.	10-10-2025	Serial Communication,		
59.	13-10-2025	Interrupt Priority in the 8051		
60.	14-10-2025	Programming of 8051- Timers,		
61.	14-10-2025	counters		
62.	16-10-2025	interrupts		
		UNIT -5		
62.	21-10-2025	Applications of Micro Controllers		
63.	22-10-2025	Applications		
64.	24-10-2025	Interfacing 8051 to LED's,		
65.	27-10-2025	Interfacing Seven Segment Display		
66.	28-10-2025	Interfacing Seven Segment Display		
67.	29-10-2025	Keyboard Interfacing		
68.	31-10-2025	Keyboard Interfacing		
69.	04-11-2025	ADC Interfacing,		
70.	06-11-2025	DAC Interfacing,		
71.	07-11-2025	Stepper Motor Interfacing,		
72.	08-11-2025	REVISION		
73.	11-11-2025	REVISION		
74.	14-11-2025	REVISION		

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Course Instructor

Head of the Dept.

Principal