Sri Indu Institute of Engineering & Technology

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COURSE FILE

ON

MICRO PROCESSORS & MICRO CONTROLLERS LAB

Course Code – EC505PC

III B.Tech I-SEMESTER

A.Y.: 2022-2023

Prepared by

Mr.I.VENU
Assistant Professor

Head of the Department
Electronics and Communication Engg. Dept
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510

PRINCIPAL
Sri Indu Institute of Engineering & Tech
Sheriguda(Vill), Ibrahimpatnam
R.R. Dist. Telangana-501 510.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Name of the Physical laboratory	MICRO PROCESSORS & MICRO CONTROLLERS LAB
Course Code	EC505PC
Room No	A-118
Name of the lab In charge	I.VENU
Name of the faculty In charge	I.VENU

Index of Lab File

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INSTITUTE VISION AND MISSION

Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

Mission:

IM1: To offer outcome-based education and enhancement of technical and practical skills.

IM2: To Continuous assess of teaching-learning process through institute-industry collaboration.

IM3: To be a centre of excellence for innovative and emerging fields in technology development with state-of-art facilities to faculty and students' fraternity.

IM4: To Create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT VISION AND MISSION

Vision:

To become a recognized center in the field of Electronics and Communication Engineering by producing creative engineers with social responsibility and address ever-changing global challenges.

Mission:

DM1: To facilitate an academic environment that enables student's centric learning.

DM2: To provide state-of-the-art hardware and software technologies to meet industry requirements.

DM3: To continuously update the Academic and Research infrastructure.

DM4: To Conduct Technical Development Programs for overall professional caliber of Stake Holders.

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PROGRAM EDUCATIONAL OBJECTIVES

Program Educational objectives are to Promote:

PEO1: Graduates with a strong foundation in Electronics and Communication Engineering, Science and Technology to become successful in the chosen professional career.

PEO2: Graduates with ability to execute innovative ideas for Research and Development with continuous learning.

PEO3: Graduates inculcated with industry based soft-skills to enable employability.

PEO4: Graduates demonstrate with ability to work in interdisciplinary teams and ethical professional behavior.

PROGRAM SPECIFIC OUTCOMES

PSO 1: Design Skills: Design, analysis and development a economical system in the area of Embedded system & VLSI design.

PSO 2: Software Usage: Ability to investigate and solve the engineering problems using MATLAB, Keil and Xilinx.

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PROGRAM OUTCOMES

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, 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 modelling 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, 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.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech. in ELECTRONICS AND COMMUNICATION ENGINEERING

III YEAR COURSE STRUCTURE AND SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC501PC	Microprocessors & Microcontrollers	3	1	0	4
2	EC502PC	Data Communications and Networks	3	1	0	4
3	EC503PC	Control Systems	3	1	0	4
4	SM504MS	Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	EC505PC	Microprocessors & Microcontrollers Lab	0	0	3	1.5
7	EC506PC	Data Communications and Networks Lab	0	0	3	1.5
8	EN508HS	Advanced Communication Skills Lab	0	0	2	1
9	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	18	3	8	22

III YEAR II SEMESTER

S. No.	**Course Code**	**Course Title**	**L**	**T**	**P**	**Credits**
1	EC601PC	Antennas and Propagation	3	1	0	4
2	EC602PC	Digital Signal Processing	3	1	0	4
3	EC603PC	VLSI Design	3	1	0	4
4		Professional Elective - II	3	0	0	3
5		Open Elective - I	3	0	0	3
6	EC604PC	Digital Signal Processing Lab	0	0	3	1.5
7	EC605PC	e – CAD Lab	0	0	3	1.5
8	EC606PC	Scripting Languages Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

***MC - Environmental Science – Should be Registered by Lateral Entry Students Only.**

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective – I

EC511PE	Computer Organization & Operating Systems
EC512PE	Error Correcting Codes
EC513PE	Electronic Measurements and Instrumentation

Professional Elective – II

EC611PE	Object Oriented Programming through Java
EC612PE	Mobile Communications and Networks
EC613PE	Embedded System Design

EC505PC: MICROPROCESSORS AND MICROCONTROLLERS LAB

B.Tech. III Year I Semester

L	T	P	C
0	0	3	1.5

Cycle 1: Using 8086 Processor Kits and/or Assembler (5 Weeks)

- Assembly Language Programs to 8086 to Perform
  1. Arithmetic, Logical, String Operations on 16 Bit and 32-Bit Data.
  2. Bit level Logical Operations, Rotate, Shift, Swap and Branch Operations.

Cycle 2: Using 8051 Microcontroller Kit (6 weeks)

- Introduction to IDE
  1. Assembly Language Programs to Perform Arithmetic (Both Signed and Unsigned) 16 Bit Data Operations, Logical Operations (Byte and Bit Level Operations), Rotate, Shift, Swap and Branch Instructions
  2. Time delay Generation Using Timers of 8051.
  3. Serial Communication from / to 8051 to / from I/O devices.
  4. Program Using Interrupts to Generate Square Wave 10 KHZ Frequency on P2.1 Using Timer 0 8051 in 8 bit Auto reload Mode and Connect a 1 HZ Pulse to INT1 pin and Displayon Port 0. Assume Crystal Frequency as 11.0592 MHZ

Cycle 3: Interfacing I/O Devices to 8051(5 Weeks)

1. 7 Segment Display to 8051.
2. Matrix Keypad to 8051.
3. Sequence Generator Using Serial Interface in 8051.
4. 8 bit ADC Interface to 8051.
5. Triangular Wave Generator through DAC interfaces to 8051.

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Website: https://siiet.ac.in/

Course : MPMC LAB (C316) **Class: III ECE-A**

Course Outcomes

After completing this course the student will be able to:

C316.1 : Basic understanding of 8086 microprocessors architectures and its functionalities. (Knowledge)

C316.2 : Design and develop 8086 Microprocessor based systems for real time applications using low level language like ALP. (Synthesis)

C316.3 : Basic understanding of 8051 microcontrollers architectures and its functionalities. . (Knowledge)

C316.4 : Discuss the input /output memory interface Serial Communication and Bus Interface device. (Evaluation)

C316.5 : Analyze the internal architecture of ARM. (Analysis)

C316.6 : Classify the internal architecture of CORTEX ARM Processor and MAP ARM Processor (Analysis)

Mapping of course outcomes with program outcomes:

High -3 Medium -2 Low-1

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO11	PO12	PSO1	PSO2
C316.1	2	2	2	-	-	2	-	-	-	2	2	-	3	3
C316.2	-	2	2	2	2	2	-	-	-	2	-	2	2	2
C316.3	2	2	2	2	-	2	-	-	-	2	2	-	3	3
C316.4	2	2	-	-	-	-	-	-	-	2	2	-	3	3
C316.5	-	-	2	2	2	-	-	-	-	2	-	2	2	2
C316.6	2	-	-	-	2	-	-	-	-	2	2	-	1	1
C316	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	2.0	2.0	2.0	2.33	2.33

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LIST OF EXPERIMENTS AND THEIR CO, PO/PSO MAPPING

S.No	Name of The Experiment	CO	PO/PSO
1	Programs for 16bit arithmetic operations 8086.	1	PO1, PO2, PO3, PO6,PO10, PO11, PSO1,PSO2
2	Programs for string manipulations for 8086.	1	PO1, PO2, PO3, PO6,PO10, PO11, PSO1,PSO2
3	Programs for Bit level Logical Operations, Rotate, Shift, Swap and Branch Operations.	1	PO1, PO2, PO3, PO6,PO10, PO11, PSO1,PSO2
4	Programs for Logical operations 8086.	1	PO1, PO2, PO3, PO6,PO10, PO11, PSO1,PSO2
5	Programming using arithmetic, logical & bit manipulation instructions of 8051.	3	PO1,PO2,PO3,PO4,PO6,PO10,PO11,PSO1,PSO2
6	Program & verify Timer/counter in 8051.	3	PO1,PO2,PO3,PO4,PO6,PO10,PO11,PSO1,PSO2
7	Interfacing ADC &DAC to 8086	4	PO1,PO2, PO 10, PO 11, PSO1,PSO2
8	Serial Communication from / to 8051 to / from I/O devices	4	PO1,PO2, PO 10, PO 11, PSO1,PSO2
9	Interfacing matrix /keyboard to 8051.	4	PO1,PO2, PO 10, PO 11, PSO1,PSO2
10	8 bit ADC Interface to 8051	4	PO1,PO2, PO 10, PO 11, PSO1,PSO2
11	Triangular Wave Generator through DAC interfaces to 8051.	4	PO1,PO2, PO 10, PO 11, PSO1,PSO2

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Class Timetable

CLASS: III-B.Tech ECE-A **A.Y:2022-23** **SEMESTER: I** **LH: C-201**

TIME/ DAY	I 9:40-10:30	II 10:30 -11:20	III 11:20-12:10	IV 12:10-1:00	1:00-1:30	V 1:30-2:20	VI 2:20-3:10	VII 3:10-4:00
MON	DCN	IPR	CS	LIB	LUNCH	MPMC LAB / DCN LAB		
TUE	CS	MPMC	EMI	DCN		CYB	BEFA	SPORTS
WED	CYB	MPMC(T)/DCN(T)	CS	EMI		DCN LAB / MPMC LAB		
THU	EMI	DCN	CO-CU/DAA			IPR	MPMC	CS(T)/MPMC(T)
FRI	CS	BEFA	EMI	MPMC		DCN(T)/CS(T)	ACS LAB	
SAT	MPMC	IPR	MPMC(ADJUNCT)			BEFA	DCN	COUN

*(T) – Tutorial Concern Faculty

Course Code	Course Name	Name of the Faculty
EC501PC	MPMC- Microprocessors & Microcontrollers	I.Venu
EC502PC	DCN-Data Communications and Networks	Y.Raju
EC503PC	CS-Control Systems	K.Srikanth
SM504MS	BEFA- Business Economics & Financial Analysis	K V Nagamani
EC513PE	EMI-Electronic Measurements and Instrumentation (PE-I)	M.Ganesh
*CYB	Cyber Security	T.Divya

Course Code	Course Name	Name of the Faculty
EC505PC	MPMC LAB- Microprocessors & Microcontrollers Lab	I.Venu/K.Srikanth/P.Srilatha
EC506PC	DCN LAB- Data Communications and Networks Lab	J.Anand Rao/ M.Ganesh/Y.Raju
EN508HS	ACS LAB- Advanced Communication Skills Lab	D.Ananda Rao
*MC510	IPR-Intellectual Property Rights	S.Srinivas
MPMC(ADJUNCT)		G.Chandrasekhar
LIB	Library	B.Jyothirmai/S.Alekhya
COUN	Counseling	Dr.S.Suresh/S.Alekhya/M.Ganesh
CO-CU/DAA	Co-Curricular/Dept.Assc.Act.	M.Ganesh/S.Naresh/P.KrishnaRao
SPORTS	Sports	M.Ganesh/K.Padma

Class Incharge

Head of the Department

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Lab External Question Paper

Subject Name: Microprocessors and Microcontrollers Lab **Year & Semester : III-I**
A.Y:2022-2023

1. Write an ALP Program for 16-bit addition operation using direct addressing mode.
2. Write an AL Program for (a) Interfacing ADC to 8086.
   (b)UART operation in 8051.
3. Write an AL Program for (a) Interfacing DAC to 8086.
   (b) Communication between 8051 kit and PC.
4. Write an AL Program for arithmetic, logical and bit manipulation instructions of 8051.
5. Write an AL Program and verify Timer/Counter in 8051.
6. Write an AL Program and verify interrupt handling in 8051.
7. Write an AL Program for (a)Interfacing matrix /keyboard to 8051.

   (b) Write an ALP Program for 16-bit multiplication operation using direct addressing mode.

8. Write an ALP for moving of data in same order using string instructions.

9. Write an ALP for moving of data in reverse order using string instructions.

10. Write an ALP for searching a character in a string.

11. Write an ALP sorting of array number in ascending order.

12. Write an ALP for 16 bit subtraction operation using indirect addressing mode.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

III ECE Regular Lab External Exams Timetable

A.Y: 2022-23 **SEM: I**

S.No.	Name of the Lab	Year/ Sec	Date & Time of the Lab Exam	Name of the Lab Internal Examiners
1	Microprocessors & Microcontrollers Lab	III ECE-A	23.01.2023(FN)	Mr.I.Venu
		III ECE-B	24.01.2023(FN)	Mr.I.Venu
		III ECE-C	25.01.2023(FN)	Mrs.A.Vaani
2	Data Communications and Networks Lab	III ECE-A	24.01.2023(FN)	Mrs.D.Uma
		III ECE-B	25.01.2023(FN)	Mr.A.Vijay Kumar
		III ECE-C	23.01.2023(FN)	Mrs.D.Uma
3	Advanced Communication Skills Lab	III ECE-A	25.01.2023(FN)	Dr.Anand Kumar
		III ECE-B	23.01.2023(FN)	Dr.Anand Kumar
		III ECE-C	24.01.2023(FN)	Dr.Anand Kumar
4	Microprocessors & Microcontrollers Lab	III CSE (IOT)	25.01.2023(FN)	Mrs.A.Vaani

Timings: - 10:00 AM To 01: 00 PM

Head of Department
HOD/ECE
Electronics and Communication Engg. Dept
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

III ECE Regular Lab External Examiners From Vignan Inst. of Tech.(89)

A.Y: 2022-23 **SEM: I**

S.No.	Name of the Lab	Year/ Sec	Date & Time of the Lab Exam	Name of the Lab Internal Examiners	Name of the Lab External Examiner With Designation and Contact Detai
1	Microprocessors & Microcontrollers Lab	III ECE-A	23.01.2023(FN)	Mr.I.Venu	Mr G. RANJITH KUMAR (9059511681
		III ECE-B	24.01.2023(FN)	Mr.I.Venu	Mr U. SRINIVAS (9704130809)
		III ECE-C	25.01.2023(FN)	Mrs.A.Vaani	Mr U. SRINIVAS (9704130809)
2	Data Communications and Networks Lab	III ECE-A	24.01.2023(FN)	Mrs.D.Uma	Mrs B KALYANI(8498866860)
		III ECE-B	25.01.2023(FN)	Mr.A.Vijay Kumar	Mr CH.SUDHAKAR (9666417213)
		III ECE-C	23.01.2023(FN)	Mrs.D.Uma	Mrs B KALYANI (8498866860)
3	Advanced Communication Skills Lab	III ECE-A	25.01.2023(FN)	Dr.Anand Kumar	Mrs G.P. RAGINI (9110520062)
		III ECE-B	23.01.2023(FN)	Dr.Anand Kumar	Mrs G.P. RAGINI (9110520062)
		III ECE-C	24.01.2023(FN)	Dr.Anand Kumar	Mrs G.P. RAGINI (9110520062)
4	Microprocessors & Microcontrollers Lab	III CSE (IOT)	25.01.2023(FN)	Mrs.A.Vaani	Mr MEENAIAH BATTA (9912271372

Timings:-10:00 AM To 01: 00 PM

HOD/ECE
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LAB OCCUPANCY CHART

MICRO PROCESSOR AND MICRO CONTROLLERS LAB

	I 9:40am - 10:30am	II 10:30am - 11:20am	III 11:20am - 12:10pm	IV 12:10pm - 1:00pm	1:00pm-1:30pm	V 1:30pm - 2:20pm	VI 2:20pm – 3:10pm	VII 3:10pm – 4:00pm
MON					LUNCH BREAK	MPMC LAB-A		
TUES						MPMC LAB-B		
WED	MAINTENANCE					MPMC LAB-A		
THU						MPMC LAB-C		
FRI						MPMC LAB-B		
SAT						MPMC LAB-C		

LAB IN CHARGE

HOD
Head of the Department
Electronics and Communication Engg. Dept
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DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING

- All students must observe the dress code while in the laboratory
- Foods, drinks and smoking are **NOT** allowed
- All bags must be left at the indicated place.
- The lab time table must be strictly followed.
- Be **PUNCTUAL** for your laboratory session.
- Experiment must be completed within the given time.
- Noise must be kept to minimum.
- Workspace must be kept clean and tidy at all time.
- Handle all apparatus with care.
- All students are liable for any damage to equipment due to their own negligence.
- All equipment,apparatus,tools and components must be **RETURNED** to their original place after use.
- Students are strictly **PROHIBITED** from taking out any items from the laboratory.
- Report immediately to the lab supervisor if any injury occurred.
- Report immediately to the lab supervisor if any damages to equipment.

BEFORE LIVING LAB

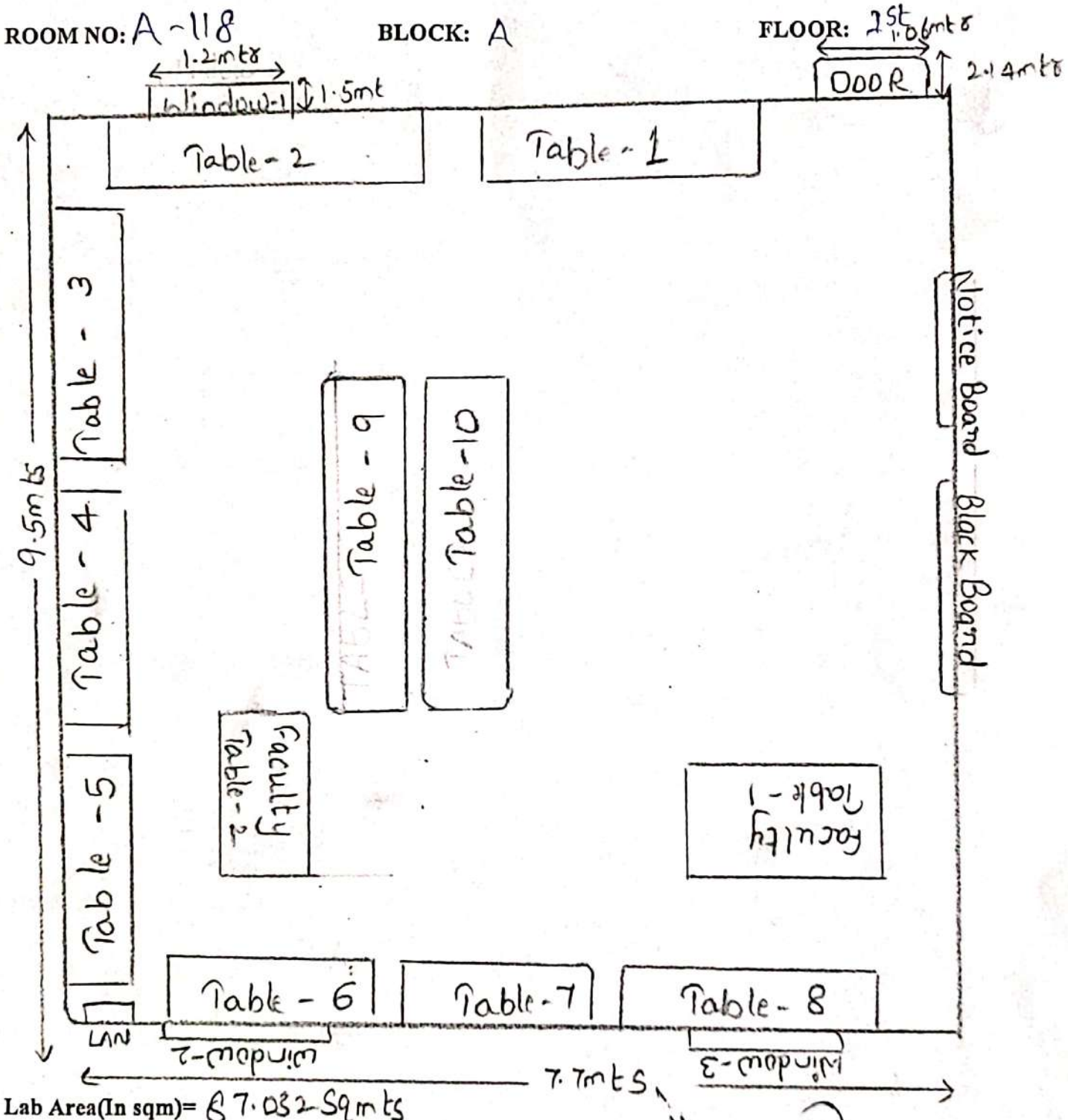
- Place the stools under the lab bench.
- Turn off the power to all instruments.
- Please check the laboratory notice board regularly for updates.

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

MICROPROCESSOR AND MICROCONTROLLER LAB

PHYSICAL LAB FLOOR PLAN

ROOM NO: A-118 BLOCK: A FLOOR: 1st



Lab Area(In sqm)= 87.032 Sqmts

Lab In-charge

Head of The Department

MPMC Lab Manual link:

https://drive.google.com/file/d/1IX2Uwca0QV8dVdFuJ1_RwOMfPeIT_0De/view?usp=sharing

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment (Internal Examination-1)

Name of the faculty : Mr.I.Venu
A.Y: 2022-23
Branch & Section: ECE - A
Examination I Internal
Course Name: MPMC LAB
Year/Semester: III/I

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Marks ==>		5	5	15
1	20X31A0401	4	5	13
2	20X31A0402	4	3	14
3	20X31A0403	4	4	6
4	20X31A0404	4	5	14
5	20X31A0405	4	5	13
6	20X31A0406	5	5	13
7	20X31A0407	5	4	11
8	20X31A0408	5	4	13
9	20X31A0409	3	4	16
10	20X31A0410	4	5	13
11	20X31A0411	5	3	15
12	20X31A0412	4	5	13
13	20X31A0413	4	5	13
14	20X31A0414	5	5	13
15	20X31A0415	4	4	15
16	20X31A0416	4	3	15
17	20X31A0417	5	5	11
18	20X31A0418	5	5	4
19	20X31A0419	4	5	15
20	20X31A0420	4	5	15
21	20X31A0421	5	4	14
22	20X31A0422	4	4	6
23	20X31A0423	5	5	12
24	20X31A0424	5	5	13
25	20X31A0425	5	5	12
26	20X31A0426	5	4	13
27	20X31A0427	5	4	14
28	20X31A0428	5	5	14
29	20X31A0429	5	4	14
30	20X31A0430	5	5	14
31	20X31A0431	5	5	12
32	20X31A0432	4	4	14
33	20X31A0433	4	3	7
34	20X31A0434	4	4	16
35	20X31A0435	5	5	13
36	20X31A0436	5	5	14
37	20X31A0437	5	4	11
38	20X31A0438	4	5	14
39	20X31A0439	5	5	12
40	20X31A0440	5	5	11

41	20X31A0441	5	5	10
42	20X31A0442	4	5	14
43	20X31A0444	5	5	14
44	20X31A0445	5	5	12
45	20X31A0446	5	5	13
46	20X31A0447	5	4	12
47	20X31A0448	5	5	12
48	20X31A0449	5	5	13
49	20X31A0450	5	5	13
50	20X31A0451	4	5	15
51	20X31A0452	5	4	14
52	20X31A0453	4	3	14
53	20X31A0454	5	4	11
54	20X31A0455	4	3	7
55	20X31A0456	5	4	5
56	20X31A0458	5	5	12
57	20X31A0459	5	5	13
58	20X31A0460	5	5	14
59	20X31A0461	4	5	15
60	20X31A0462	5	5	13
Target set by the faculty / HoD		3.00	3.00	9.00
Number of students performed above the target		60	60	54
Number of students attempted		60	60	60
Percentage of students scored more than target		100%	100%	90%

CO Mapping with Exam Questions:

CO - 1	Y	Y	Y
CO - 2	Y	Y	Y
CO - 3	Y	Y	Y
CO - 4	Y	Y	Y
CO - 5	Y	Y	Y
CO - 6	Y	Y	Y

% Students Scored >Target %	100%	100%	90%

CO Attainment based on Exam Questions:

CO - 1	100%	100%	90%
CO - 2	100%	100%	90%
CO - 3	100%	100%	90%
CO - 4	100%	100%	90%
CO - 5	100%	100%	90%
CO - 6	100%	100%	90%

CO	Intrnal practi	DDE	OverallI	Level
CO-1	100%	90%	95%	3.00
CO-2	100%	90%	95%	3.00
CO-3	100%	90%	95%	3.00

Attainment Level	
1	40%
2	50%
3	60%

CO-4	100%	90%	95%	3.00
CO-5	100%	90%	95%	3.00
CO-6	100%	90%	95%	3.00

Attainment (Internal 1 Examination) = **3.00**

NOTE:

A+A+CD+MG : AIM+APPARATUS+CIRCUIT DIAGRAM+MODEL GRAPH

T+P+C+R : THEORY+PROCEDURE+CALCULATION+RESULT

DDE : Day to Day Evaluation

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLO

Department of Electronics and Communication Engineering

Course Outcome Attainment (Internal Examination-2)

Name of the faculty : Mr.I.Venu A.Y: 2022-23
Branch & Section: ECE - A Examination II Internal
Course Name: MPMC LAB Year/Semester: III/I

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Marks ==>		5	5	15
1	20X31A0401	4	5	13
2	20X31A0402	4	3	14
3	20X31A0403	4	4	6
4	20X31A0404	4	5	14
5	20X31A0405	4	5	13
6	20X31A0406	5	5	13
7	20X31A0407	5	4	11
8	20X31A0408	5	4	13
9	20X31A0409	3	4	16
10	20X31A0410	4	5	13
11	20X31A0411	5	3	15
12	20X31A0412	4	5	13
13	20X31A0413	4	5	13
14	20X31A0414	5	5	13
15	20X31A0415	4	4	15
16	20X31A0416	4	3	15
17	20X31A0417	5	5	11
18	20X31A0418	5	5	4
19	20X31A0419	4	5	15
20	20X31A0420	4	5	15
21	20X31A0421	5	4	14
22	20X31A0422	4	4	6
23	20X31A0423	5	5	12
24	20X31A0424	5	5	13
25	20X31A0425	5	5	12
26	20X31A0426	5	4	13
27	20X31A0427	5	4	14
28	20X31A0428	5	5	14
29	20X31A0429	5	4	14
30	20X31A0430	5	5	14
31	20X31A0431	5	5	12
32	20X31A0432	4	4	14
33	20X31A0433	4	3	7
34	20X31A0434	4	4	16
35	20X31A0435	5	5	13
36	20X31A0436	5	5	14
37	20X31A0437	5	4	11
38	20X31A0438	4	5	14
39	20X31A0439	5	5	12
40	20X31A0440	5	5	11

41	20X31A0441	5	5	10
42	20X31A0442	4	5	14
43	20X31A0444	5	5	14
44	20X31A0445	5	5	12
45	20X31A0446	5	5	13
46	20X31A0447	5	4	12
47	20X31A0448	5	5	12
48	20X31A0449	5	5	13
49	20X31A0450	5	5	13
50	20X31A0451	4	5	15
51	20X31A0452	5	4	14
52	20X31A0453	4	3	14
53	20X31A0454	5	4	11
54	20X31A0455	4	3	7
55	20X31A0456	5	4	5
56	20X31A0458	5	5	12
57	20X31A0459	5	5	13
58	20X31A0460	5	5	14
59	20X31A0461	4	5	15
60	20X31A0462	5	5	13
Target set by the faculty / HoD		3.00	3.00	9.00
Number of students performed above the target		54	54	49
Number of students attempted		54	54	54
Percentage of students scored more than target		100%	100%	91%

CO Mapping with Exam Questions:

CO - 1	Y	Y	Y
CO - 2	Y	Y	Y
CO - 3	Y	Y	Y
CO - 4	Y	Y	Y
CO - 5	Y	Y	Y
CO - 6	Y	Y	Y

% Students Scored >Target %	100%	100%	91%

CO Attainment based on Exam Questions:

CO - 1	100%	100%	91%
CO - 2	100%	100%	91%
CO - 3	100%	100%	91%
CO - 4	100%	100%	91%
CO - 5	100%	100%	91%
CO - 6	100%	100%	91%

CO	Intrnal practica	DDE	Overall	Level
CO-1	100%	91%	95%	3.00
CO-2	100%	91%	95%	3.00
CO-3	100%	91%	95%	3.00

Attainment Level	
1	40%
2	50%
3	60%

CO-4	100%	91%	95%	3.00
CO-5	100%	91%	95%	3.00
CO-6	100%	91%	95%	3.00

Attainment (Internal 2 Examination) = **3.00**

NOTE:

A+A+CD+MG : AIM+APPARATUS+CIRCUIT DIAGRAM+MODEL GRAPH

T+P+C+R : THEORY+PROCEDURE+CALCULATION+RESULT

DDE : Day to Day Evaluation

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment (University Examinations)

Name of the faculty : Mr.I.Venu Academic Year: 2022-23

Branch & Section: ECE - A Year / Semester: III/I

Course Name: MPMC LAB

S.No	Roll Number	Marks Secured
1	20X31A0401	67
2	20X31A0402	66
3	20X31A0403	-1
4	20X31A0404	69
5	20X31A0405	68
6	20X31A0406	69
7	20X31A0407	65
8	20X31A0408	66
9	20X31A0409	73
10	20X31A0410	66
11	20X31A0411	69
12	20X31A0412	68
13	20X31A0413	67
14	20X31A0414	68
15	20X31A0415	72
16	20X31A0416	66
17	20X31A0417	67
18	20X31A0418	-1
19	20X31A0419	66
20	20X31A0420	66
21	20X31A0421	67
22	20X31A0422	68
23	20X31A0423	65
24	20X31A0424	65
25	20X31A0425	68
26	20X31A0426	67
27	20X31A0427	70
28	20X31A0428	68
29	20X31A0429	67
30	20X31A0430	71
31	20X31A0431	66
Max Marks		

S.No	Roll Number	Marks Secured
32	20X31A0432	66
33	20X31A0433	67
34	20X31A0434	69
35	20X31A0435	65
36	20X31A0436	67
37	20X31A0437	66
38	20X31A0438	74
39	20X31A0439	70
40	20X31A0440	67
41	20X31A0441	68
42	20X31A0442	66
43	20X31A0444	67
44	20X31A0445	66
45	20X31A0446	69
46	20X31A0447	68
47	20X31A0448	65
48	20X31A0449	73
49	20X31A0450	65
50	20X31A0451	67
51	20X31A0452	72
52	20X31A0453	65
53	20X31A0454	66
54	20X31A0455	65
55	20X31A0456	-1
56	20X31A0458	67
57	20X31A0459	71
58	20X31A0460	66
59	20X31A0461	67
60	20X31A0462	66
	0	

Class Average mark	64
Number of students performed above the target	36
Number of successful students	44
Percentage of students scored more than target	82%
Attainment level	**3**

Attainment Level	% students
1	40%
2	50%
3	60%

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment

Name of the faculty Mr.I.Venu
Branch & Section: ECE - A
Course Name: MPMC LAB

Academic Year 2022-23
Examination: I Internal
Year: III
Semester: I

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00	3.00	3.00	3.00	3.00
CO2	3.00	3.00	3.00	3.00	3.00
CO3	3.00	3.00	3.00	3.00	3.00
CO4	3.00	3.00	3.00	3.00	3.00
CO5	3.00	3.00	3.00	3.00	3.00
CO6	3.00	3.00	3.00	3.00	3.00
Internal & University Attainment:			3.00	3.00	
Weightage			25%	75%	
CO Attainment for the course (Internal, University			0.75	2.25	
CO Attainment for the course (Direct Method)			3.00		

Overall course attainment level **3.00**

SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Electronics and Communication Engineering

Program Outcome Attainment (from Course)

Name of Faculty: Mr.I.Venu | Academic Year: 2022-23
Branch & Section: ECE - A | Year: III
Course Name: MPMC LAB | Semester: I

CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	-	-	2	-	-	-	2	2	-	3	3
CO2	-	2	2	2	2	2	-	-	-	2	-	2	2	2
CO3	2	2	2	2	-	2	-	-	-	2	2	-	3	3
CO4	2	2	-	-	-	-	-	-	-	2	2	-	3	3
CO5	-	-	2	2	2	-	-	-	-	2	-	2	2	2
CO6	2	-	-	-	2	-	-	-	-	2	2	-	1	1
Course	2	2	2	2	2	2	-	-	-	2	2	2	2.33	2.33

CO	**Course Outcome Attainment**
CO1	3.00
CO2	3.00
CO3	3.00
CO4	3.00
CO5	3.00
CO6	3.00
Overall course attainment level	**3.00**

PO-ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO Attainment	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**0.00**	**0.00**	**0.00**	**2.00**	**2.00**	**2.00**	**2.33**	**2.33**

CO contribution to PO - 33%, 67%, 100% (Level 1/2/3)