



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE PLAN – PART I														
Course Title	Micro-controller Laboratory													
Course Code	EE LR 16	No. of Credits		02										
Course Code of Pre-requisite subject(s)	EEPC22													
Session	January 2023	Section		A										
Name of Faculty	Dr. S.Sudha	Department		EEE										
Email	sudha@nitt.edu			Telephone no.	8754888396									
Course Type	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course												
Syllabus (approved in BoS)														
List of Experiments:														
<ul style="list-style-type: none"> • An assembly language program to add, subtract, multiply and divide. • An assembly language program to generate 10 KHz square wave. • Study and interface display devices like LCD, LED and 7-Segment display. • Study of implementation of stepper motor angle control. • Study of implementation of DC Motor control using PWM method. • Study and observation of Position control of Servo Motor. • Study of Programming and Transmission and Reception of data through serial port. • To study implementation and programming of Pressure measurement. • To study implementation and programming of Temperature measurement. 														
COURSE OBJECTIVES														
To train the students to use micro-controller for computational and logical applications. Also, this course prepares the students to provide solutions to real-time problems.														
MAPPING OF COs with POs														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14
1. Accomplish arithmetic and logical operations with micro-controllers.	3	2	3	-	-	3	-	3	3	1	2	2	2	2
2. Generate firing pulses for various control applications related to electrical machines and power electronics	3	2	3	2	-	3	-	3	3	1	2	2	2	2
3. Illustrate various interfacing techniques related to real-time applications using micro-controllers.	3	2	3	-	-	3	-	3	3	1	2	2	2	2
4. Design and implement control circuitry using micro-controllers for any engineering and real-world problems	3	2	3	-	-	3	-	3	3	1	2	2	2	2
COURSE PLAN – PART II														
COURSE OVERVIEW														



This is a course to provide exposure and hands-on training to the students on practical implementations of processors and controllers in addition to the programmable devices like FPGAs.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1	Lab Introduction to know the about the experiments.	Chalk & Talk
2	Week 2	Arithmetic programming	Chalk & Talk
3	Week 3	Programming to play with numbers	Chalk & Talk
4	Week 4	Waveform generation	Chalk & Talk
5	Week 5	Peripheral interfacing display devices like LCD, LED and 7-Segment display	Chalk & Talk
6	Week 6	Implementation of stepper motor angle control	Chalk & Talk
7	Week 7	Implementation of DC Motor control using PWM method	Chalk & Talk
8	Week 8	Implementation of Position control of Servo Motor	Chalk & Talk
9	Week 9	Study of Programming and Transmission and Reception of data through serial port	Chalk & Talk
10	Week 10	Implementation and programming of Pressure/ Temperature measurement	Chalk & Talk
11	Week 11	Mini project evaluation	
12	Week 12	Mini project evaluation	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Continuous Session Assessment (CSA)* (Program, Execution & Result)	Every week	--	30
2	Viva	Week 4&10	--	10
3	Report	Week 10		05
3	Mini project Evaluation	Week 11/12	--	25
4	Final Assessment – Viva Test/ Hands on program Execution/ MCQ	At the end of the semester	--	30

* If an experiment of a particular session (Week 1) is incomplete, it can be carried over to the immediate subsequent week (Week 2) only; which will serve as the time for re-assessing the experiment. However, the maximum marks that will be awarded is as given below:

S.No.	Status	Program	Execution & Result
1.	Program verification, Execution and Results – all done in respective week	20	10
2.	Program verification done in respective week. Execution and Results in subsequent week	20	05



3.	Program verification, Execution and Results – all done in subsequent week	15	05
4.	Program verification alone done in subsequent week. Execution and results further delayed	10	00

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

Feedback from the students during class committee meetings
End semester feedback on Course Outcomes

COURSE POLICY (preferred mode of correspondence with students, policy on attendance, compensation assessment, academic honesty and plagiarism etc.)

MODE OF CORRESPONDENCE (email/ phone etc)

1. All the students are advised to check their NITT WEBMAIL regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/ any other information regarding this course) will be done through their webmail only.
2. Queries to the course teacher shall only be emailed to ankur@nitt.edu

ATTENDANCE

1. Attendance will be taken by the faculty in all the lab sessions.
2. At least 75% attendance in each course is mandatory.
3. A maximum of 10% shall be allowed under On Duty (OD) category.
4. Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

COMPENSATION ASSESSMENT

If a student is absent for a lab session for a genuine reason, it will be considered, and compensation will be given in the next immediate session itself. However, the honesty and genuineness of the reason will be analysed and decided by the course faculty. Also, a new question may be given for that student.

ACADEMIC HONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office. The above policy against academic dishonesty shall be applicable for all the programmes.

FOR APPROVAL

Course Faculty S. Sridhar 25/11/2023
CC-Chairperson [Signature]
HOD [Signature] 06/12/23