



Department of Electronics and Communication Engineering

COURSE PLAN – PART I			
Name of the programme and specialization	B.Tech Electronics and Communication Engineering		
Course Title	MICROPROCESSOR AND MICROCONTROLLER LABORATORY		
Course Code	ECLR 13	No. of Credits	2
Course Code of Pre-requisite subject(s)	ECPC 18		
Session	January 2019	Section (if, applicable)	B
Name of Faculty	Dr. S S Karthikeyan	Department	ECE
Official Email	sskarthikeyan@nitt.d eu	Telephone No.	0431-2503300
Name of Course Coordinator(s) (if, applicable)			
Official E-mail		Telephone No.	
Course Type (please tick appropriately)	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course	
<b>Syllabus (approved in BoS)</b>			
<p>Intel 8086 – 16bit <math>\mu</math>P- Emulator.</p> <ol style="list-style-type: none"> <li>Addressing modes of 8086 Microprocessor .</li> <li>Block move and simple arithmetic operations .</li> <li>Identification and displaying the activated key using DOS and BIOS function calls.</li> </ol> <p>Intel 8051 (8-bit Microcontroller) - Proteus VSM Simulator and Trainer Kit.</p> <ol style="list-style-type: none"> <li>Addressing modes of 8051 Microcontroller.</li> <li>Delay generation - i) Nested loop and ii) Timers.</li> <li>Toggling the ports and counting the pulses.</li> <li>LCD Interfacing.</li> <li>Generation of different waveforms using DAC (0808)</li> <li>ADC interfacing.</li> </ol> <p>Mixed-Signal Microcontroller – 16bit – MSP430 series</p> <ol style="list-style-type: none"> <li>PWM generation and speed control of Motors using MSP430</li> </ol>			
<b>COURSE OBJECTIVES</b>			
This subject deals about the basics of 16-bit Microprocessor, 8-bit and 16-bit Micro controllers, their architectures, internal organization and their functions, peripherals, and interfacing.			
<b>MAPPING OF COs with POs</b>			
Course Outcomes	Programme		



	<b>Outcomes (PO) (Enter Numbers only)</b>
After the successful completion of this course the student acquire the hands on experience with the 16 bit microprocessor and 8 bit microcontroller programming.	PO4, PO5, PO8 – H PO11, PO12 - M
	H- High, M- Medium L-Low

**COURSE PLAN – PART II**

**COURSE OVERVIEW**

Microprocessors and Microcontrollers laboratory helps the students to develop their knowledge on processor architecture and the programming skills. This laboratory train the students in the following microprocessor and microcontroller such as 8086, 8051 and MSP 430 . This laboratory provides hand-on experience to interface I/O devices, perform A/D and D/A conversions, design of motor control, LCD interface etc., The features and facilities available in this laboratory helps the students to do their projects and enhance their knowledge on the latest trends and technologies.

**COURSE TEACHING AND LEARNING ACTIVITIES** ( Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1	Introduction Lab	Hands on Experiment
2	Week 2	Addressing modes of 8086 Microprocessor	Hands on Experiment
3	Week 3	Block move and simple arithmetic operations .	Hands on Experiment
4	Week 4	Identification and displaying the activated key using DOS and BIOS function calls.	Hands on Experiment
5	Week 5	Addressing modes of 8051 Microcontroller.	Hands on Experiment
6	Week 6	Delay generation - i) Nested loop and ii) Timers	Hands on Experiment



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7	Week 7	Toggleing the ports and counting the pulses	Hands on Experiment
8	Week 8	LCD Interfacing	Hands on Experiment
9	Week 9	Generation of different waveforms using DAC (0808)	Hands on Experiment
10	Week 10	ADC interfacing	Hands on Experiment
11	Week 11	PWM generation and speed control of Motors using MSP430	Hands on Experiment
12	Week 12	Extra lab hours for Back log experiments	Hands on Experiment

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment I (Observation and Record)	Submit Every week after the completion of the experiment		20
2	Written Viva	April Last Week	One Hour	20
3	Mini Project	April First week		30
4	End Semester Examination	April Last Week	Three hours	30

**\*mandatory; refer to guidelines on page 4**

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

Course Feedback is assessed through class committee meeting. frequently ask the questions in the class and analyze the responses and course exit survey.

**COURSE POLICY** (including compensation assessment to be specified)

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 intimated in Class Only through Class



- representative.
2. Attending all the assessment is Mandatory for every student.
  3. There is no compensation assessment.

**ATTENDANCE POLICY** (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

**ACADEMIC DISHONESTY & 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.

**ADDITIONAL INFORMATION, IF ANY**

**FOR APPROVAL**

Course Faculty  CC- Chairperson  HOD 