



**Electronics Practical
[CORE COURSE]**

Semester: III	Credits:2	Subject Code: BSP32110	Lectures: 48
---------------	-----------	------------------------	--------------

Course Outcomes:
<p>At the end of this course, the learner will be able to:</p> <ul style="list-style-type: none"> • Apply the knowledge of different pins and ports of a microcontroller to identify and connect them. • Examine output across different pins of microcontroller based systems. • Acquire skills of Embedded C programming and apply the knowledge to interface the circuits with it. • Design and build his/her own microcontroller-based projects. • Build multiplexing and modulation techniques useful in developing wireless application • Build and develop practical skills of network set up.

Guidelines for Practical:
<ul style="list-style-type: none"> • Practical batch size: 12 • Minimum no of Practical to be performed: 10 • At least five practicals from each Group • Electronics lab should have set up for embedded programming (Computers and microcontroller target and interfacing boards)

Guidelines for Assessment
<ul style="list-style-type: none"> • All the students are required to complete a minimum of 10 experiments (Five from each group) from the following list. • For certification of Journal minimum 7 experiments per semester have to be completed. • The students must bring their certified journals, hobby project and project report, activity report. • The students are expected to perform in both the sections for minimum passing marks. • Internal marks will include weekly viva in practical and regular submission of journals during practical.

Group A: Any Five	
<ul style="list-style-type: none"> • Arithmetic, logical & code conversion problems using assembly/C programming • Interfacing of thumbwheel & seven segment display to PIC18 microcontrollers • Traffic light controller using PIC18 microcontroller • Interfacing LCD to PIC18 Microcontroller • Waveform generation using DAC Interface to PIC18 Microcontroller • Event counter using opto-coupler, seven segment LED/LCD display interface to PIC18 Microcontroller • Speed Control of stepper motor using PIC18 microcontroller 	

Board Of Studies	Name	Signature
Chairperson (HoD)	Ms.Swatee Sarwate	<i>Swatee Sarwate</i>



<ul style="list-style-type: none"> Speed Control of stepper motor using PIC18 microcontroller 	
--	--

Group B: Any Five	
<ul style="list-style-type: none"> Study of 3- or 4-Bit Pulse Code Modulation technique Study of Frequency Shift Keying Study of Time Division Multiplexing Study of Frequency Division Multiplexing Study of Code Division Multiple Access System Study of Error detection and correction by using Hamming Code technique Study of Computer network components: Cables, Connectors, Routers, Switches, Ethernet and related interfacing cards To study Configuration of IP and MAC address and to study Local Area Network setup 	

Board of Studies	Name	Signature (in white cell)	
Chairman (HoD)	Swatee Sarwate	<i>Swatee Sarwate</i> 20/3/21	
Faculty	Anitha Menon		<i>Anitha Menon</i> 20/3/21
Subject Expert (Outside SPPU)	Dr. R.K.Kamat	<i>R Kamat</i> 20/3/21	
Subject Expert (Outside SPPU)	Dr. Sangeeta Kale		<i>Sangeeta Kale</i> 20/3/21
VC Nominee (SPPU)	Dr. Neha Deshpande	<i>Neha Deshpande</i> 20/3/21	
Industry Expert	Amber Mukherjee		<i>Amber Mukherjee</i> 20/3/21
Alumni	Supriya Palande	<i>Supriya Palande</i> 20/3/21	

Board Of Studies	Name	Signature
Chairperson (HoD)	Ms.SwateeSarwate	<i>Swatee Sarwate</i>