Electronics Practical
[CORE COURSE]

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

Course Outcomes:

At the end of this course, the learner will be able to:

- 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:

- 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

- 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

- 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

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• Speed Control of stepper motor using PIC18 microcontroller	

Group B: Any Five	
• 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	

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Chairman (HoD)	SwateeSarwate	*Swatee Sarwate 20/3/21*	
Faculty	Anitha Menon		*R.A. 20/3/21*
Subject Expert (Outside SPPU)	Dr. R.K.Kamat	*RKKamat 20/3/21*	
Subject Expert (Outside SPPU)	Dr. Sangeeta Kale		*SKale 20/3/21*
VC Nominee (SPPU)	Dr. Neha Deshpande	*NehaDeshpande 20/3/21*	
Industry Expert	Amber Mukherjee		*AmberMukherjee 20/3/21*
Alumni	Supriya Palande	*Palande 20/3/21*	

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Chairperson (HoD)	Ms.SwateeSarwate	*Swatee Sarwate*