Electronics Practical
[CORE COURSE]

Semester: II	Credits: 1.5	Subject Code: BSP22012	Lectures: 40

Course Outcomes:

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

- Arrange, assemble and design a working model using simulation software like PSPICE/CircuitMod
- Demonstrate the application of OPAMP, ADC and DAC and its applications
- Experiment and understand different sensors
- Apply the design procedures to design basic sequential circuits.
- Explain the working of RAM, ROM, Identify different parts of computer hardware like Motherboard, Hard disk, CDROM
- Ability to work effectively and responsibly as a team member to perform experiment project work and presentations.
- Develop skills in scientific writing to make lab reports, project reports, collecting relevant information.
- Acquire skills in handling scientific instruments, planning and performing Laboratory experiments using modern tools and techniques.
- Ability to communicate effectively in oral and written communication skills

The practical course consists of 10 experiments out of which one will be activity equivalent to two practical sessions. Activity will carry 15% marks at internal and external semester examination. Activity can be any one of the following:

Activity based Practical: Compulsory Practical (Any one) 8

- Hobby Projects like building circuits for amplifiers, digital circuits using counters & displays, OPAM based circuits, IC555 based circuits
- Industrial visit/live work experience/Workshops
- PCB Making
- Market Survey of Electronic Systems, finding the relevant information related to current trends in technology through Electronics Magazines,
- Introduction to Circuit Simulations and CAD tools like PSPICE/CircuitMod

Group A: Any Four	**16**
• Build and test adder and subtractor circuits using OPAMP.	**4**
• Build and test 4-bit DAC using R-2R Ladder Network	**4**

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• 3-bit Flash ADC using discrete components	4
• To study temperature sensor LM35	4
• Use of LDR to control light intensity	4
• Study of PIR and TILT sensor	4
• Any OPAMP Circuit Simulations and CAD tools like PSPICE/CircuitMod	4
	4

Group B: Any four	**16**
• Study of RS, JK and D flip flops using NAND gates	4
• Design and build synchronous Up/Down counter	4
• Study of decade counter IC7490 for different configurations	4
• Study of 4-bit Shift register using IC7495	4
• Study of read and write action of RAM	4
• Build and Test Diode matrix ROM	4
• Study of Computer Hardware system	4

 # 12 hours for Library work, practical or field work or research purposes

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Chairman (HoD)	SwateeSarwate	Swatee Sarwate 22/7/20	
Subject Expert (Internal)	Anitha Menon		22/7/20
Subject Expert (Outside SPPU)	Dr. R.K.Kamat	22/7/20	
Subject Expert (Outside SPPU)	Dr. Sangeeta Kale		22/7/20
VC Nominee (SPPU)	Dr. Neha Deshpande	22/7/20	
Industry Expert	Amber Mukherjee		22/7/20
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