

**CBCS Syllabus as per NEP 2020 for F. Y. B.Sc.(Computer Science)
Electronics
(2023 Pattern)**

Name of the Programme	: B.Sc.(Computer Science)Electronics
Programme Code	: USCOS
Class	: F. Y. B.Sc.
Semester	: I
Course Type	: Skill Enhancement Course (Practical)
Course Code	: COS-126-SEC(EL)
Course Title	: Electronics Practical
No. of Credits	: 02
No. of Teaching Hours	: 60

Course Objectives:

1. To teach students how to know, identify, draw different symbols, logic diagrams and circuit diagrams.
2. To develop skill of circuit connections.
3. To train them to design and analyse circuits for specific purpose.
4. To motivate them to work on different mini projects.

Course Outcomes:

By the end of the course, students will be able to:

- CO1.**To identify different components, devices, IC's, as well as their types.
- CO2.**To understand basic parameters.
- CO3.**To know operation of different instruments used in the laboratory.
- CO4.**To connect circuit and do required performance analysis.
- CO5.**Develop hobby projects.

List of Practical: (Any 8)

1. Electronics components: Resistors, capacitors, Inductors,Transformer, Switches, Relays, Fuses, Batteries, Cables, Connectors,Color coding of resistors, series and parallel combinations of resistors, capacitors & Inductors, diode,clipper and clamper, transistor.
2. Ohms law, voltage and current dividers, Kirchhoff's Laws (KCL, KVL), Thevenin's theorem, Norton's theorem, Maximum power transfer theorem, Superposition theorem.
3. Concept of Logic Gates – Statement, Symbol, Expression, Truth table of basic gates, Pinout diagrams - IC 7400, IC 7402, IC 7432, IC 7408, IC 7486, Basic Binary Rules for

addition and subtraction, Half adder, Full adder, DE Morgan's theorem, Inter-conversion- Binary to Gray and Gray to Binary.

4. Use of measuring electronic Instruments (Multimeter, Signal Generators, Power supply)
5. Measurement of signal parameters (amplitude, period, frequency, peak voltage, peak to peak voltage, RMS value)
6. Study of electronic components (Resistor, Capacitor, inductor, Transformer, Switches, Fuses, Connectors, Cables, Diodes, Transistors, IC's)
7. Verification of network theorems: KCL / KVL.
8. Verification of network theorems: Thevenin/ Norton/ Maximum Power Transfer.
9. Build and test Clipper / Clampercircuit.
10. Verification of logic gates using IC's (7400, 7402, 7408, 7404, 7432, 7486)
11. Realization of basic gates using universal gates (NAND, NOR)
12. Study of Half & Full adder using gates.
13. Code converter : Binary to Gray and Gray to Binary
14. Verification of DE Morgan's theorem
15. To study Universal adder & subtractor

Activity:(Any one Activity equivalent to two experiments)

Students must perform at least one additional activity out of two activities in addition to eight experiments mentioned above. Total Laboratory work with additional activities should be equivalent to ten experiments.
