



BABU BANARASI DAS NORTHERN INDIA INSTITUTE OF TECHNOLOGY

**DEPARTMENT OF COMPUTER SCIENCE &
ENGINEERING**

PRACTICAL FILE

**LAB NAME: Computer Organization and Architecture Lab
(LAB CODE: KCS352)**

ACADEMIC SESSION: 2022-2023

Submitted By:

NAME:

SECTION:

ROLL NO.:

Under Guidance of:

Dr. Komal Asrani

(Professor)

BABU BANARASI DAS
NORTHERN INDIA INSTITUTE OF TECHNOLOGY

Institute Vision

To establish a multi-disciplinary environment with excellence in technical education and research for developing competent professionals who meet the challenges of industrial and societal development with human values and ethics.

Institute Mission

M1. To provide an excellent environment with supporting infrastructure to prepare globally competent professionals acceptable to industry and society.

M2. To inculcate a spirit of research, innovation and entrepreneurship by exposing multi-disciplinary approach.

M3. To motivate aspiring graduates to solve real life problems with zeal of lifelong learning.

M4. To imbibe a healthy environment which helps to develop intellectual capabilities among graduates to transform them into professionals with human values and ethics.

Department of Computer Science & Engineering
Department Vision

To provide conducive environment for learning and create research opportunities in the field of Computer Science and Engineering to meet global requirements using latest technologies with ethical values.

Department Mission

M1: To provide theoretical and practical concepts across Computer Science discipline.

M2: To impart education which is well suited to meet challenging software needs of the industry.

M3: To nurture the undergraduate students with multi-disciplinary and research activities to grow as a professionals.

M4: To empower students with moral and ethical values.

Department of Computer Science & Engineering

Program Educational Objectives

PEO-1: To encourage students to strengthen their technical capabilities for providing solutions to meet industrial and societal needs.

PEO-2: To groom graduates as professional engineers to work with leadership and problem solving skills.

Program Specific Outcomes

PSO-1: Ability to design and develop solutions for societal problems by using emerging technologies and standardized emerging principles.

PSO-2: Develop and understanding for conceptual and practical aspects of programming languages with databases and develop solutions using suitable data structures and algorithmic techniques.

Program Outcomes (POs)

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

B. TECH (CSE)**SEMESTER-III***Academic Session: 2022-23(ODD)***Computer Organization And Architecture Lab (KCS-352)****Course Outcome (CO) At the end of this course, the student will be able to:**

CO	Statements
CO1	To implement adder circuits using basic gates
CO2	To understand the converter circuits using basic gates.
CO3	To understand the working of Decoders.
CO4	To understand the working of Multiplexer and Parallel Adder.

INDEX

S. No.	Name of the Experiment	CO	Date Of Experiment	Date of Submission	Signature	Remark
1.	Implementing Half Adder using basic logic gates	CO1				
2.	Implementing Full Adder using basic logic gates	CO1				
3.	Implementing Binary -to -Gray code conversions.	CO2				
4.	Implementing Gray -to -Binary code conversions.	CO2				
5.	Study and verify truth table of 3-8 line Decoder.	CO3				
6.	To design circuit of Half Subtractor.	CO1				
7.	To design circuit of Full Subtractor.	CO1				
8.	To design a 2: 4 decoder.	CO3				
9.	Implementation of 4x1 Multiplexers using Logic gates.	CO4				
10.	Implementation of 4 bit Parallel Adder using 7483 IC.	CO4				