TRIBHUVAN COLLEGE
Neemrana

Guru Gobind Singh Indraprastha University

# Tribhuvan College, Neemrana, Rajasthan

## B.Tech (Computer Science & Engineering)
## Syllabus

| Sr. No. | Heading | Particulars |
|---|---|---|
| 1 | Title of the course | B.Tech (Computer Science & Engineering) |
| 2 | Eligibility for admission | As per the GGSIP University Norms |
| 3 | Passing percentage | 55% in PCM |
| 4 | Semesters | I to VIII |
| 5 | Level | UG |
| 6 | Pattern | 04 years & 08 semesters (CBCS) |
| 7 | To be implemented from | From Academic year 2026–27 in a progressive manner |

# B.Tech (Computer Science & Engineering)

## Course Overview:

The B.Tech in Computer Science and Engineering (CSE) is a four-year undergraduate program designed to provide students with a strong foundation in computing principles, software development, and modern technologies. The program focuses on problem-solving, algorithm design, and the development of scalable software and computing systems. This program blends core computer science fundamentals with hands-on practical experience, enabling students to build innovative applications and systems that power modern digital infrastructure.

As technology continues to shape industries such as finance, healthcare, e-commerce, entertainment, cybersecurity, and cloud computing, computer science engineers play a vital role in developing intelligent, secure, and efficient software systems. The program emphasizes project-based learning, research, and internships, helping students gain practical skills and industry exposure.

## Key Highlights:

- **Duration:** 4 Years (8 Semesters)
- **Core CSE Subjects:**
  - ○ Programming Fundamentals (C/C++/Java/Python)
  - ○ Data Structures & Algorithms
  - ○ Object-Oriented Programming
  - ○ Database Management Systems
  - ○ Operating Systems
  - ○ Computer Networks
  - ○ Software Engineering
  - ○ Theory of Computation
  - ○ Compiler Design
  - ○ Cloud Computing & Distributed Systems
- **Tools & Technologies:**
  C, C++, Java, Python, Git, SQL, Linux, Docker, AWS, Web Technologies (HTML, CSS, JavaScript), Node.js, React
- **Capstone Projects & Industry Internships**

## Career Opportunities:

Graduates of this program are well-positioned for roles such as:

- Software Developer / Software Engineer
- Full Stack Developer
- Backend Developer

- Frontend Developer
- System Engineer
- DevOps Engineer
- Cloud Engineer
- Cybersecurity Analyst
- Database Administrator
- Mobile App Developer
- Game Developer
- IT Consultant
- Technical Architect

## Why Choose This Program?

- **Industry-Aligned Curriculum:** Designed with insights from leading technology companies and industry experts.
- **Experienced Faculty:** A blend of academic scholars and industry professionals.
- **Project-Based Learning:** Practical coding projects and real-world software development experience.
- **Research Opportunities:** Access to advanced computing labs and research centers.
- **Placement Support:** Dedicated placement cell with connections to top IT companies and startups.

## Course Structure

We offer a diverse range of courses in computer science and engineering across eight semesters. The description of the courses for the semesters are provided.

| Group | Code | Paper |
|---|---|---|
| **Theory Papers** | | |
| ES<br>BS | ES-101<br>BS-103/BS-121[#] | *Any one of the following:<br>Programming in 'C'<br>Applied Chemistry / Basic Chemistry[#] |
| BS | BS-105 | Applied Physics – I |
| ES<br>BS | ES-107<br>BS-109 | *Any one of the following:<br>Electrical Science<br>Environmental Studies |
| BS | BS-111 | Applied Mathematics – I |
| HS<br><br><br><br>HS<br>HS | HS-113<br><br><br><br>HS-115<br>HS-117 | **Group 1 or Group 2 shall be offered:<br>Group 1: Communications Skills<br>OR<br>Group 2:<br>Indian Constitution***<br>Human Values and Ethics*** |
| ES | ES-119 | Manufacturing Process |
| **Practical/Viva Voce** | | |
| BS | BS-151 | Physics-I Lab |
| ES<br>BS | ES-153<br>BS-155 | Any of the following corresponding to the theory paper offered:<br>Programming in 'C' Lab<br>Applied Chemistry |
| ES | ES-157 | Engineering Graphics-I |
| ES<br>BS | ES-159<br>BS-161 | Any of the following corresponding to the theory paper offered:<br>Electrical Science Lab<br>Environmental Studies Lab |