

B.Tech Computer Science and Engineering

Specialization in SAP

Introduction to the Course:

Computer Science and Engineering with SAP Specialization is an interdisciplinary academic program that integrates the fundamental concepts of Computer Science and Engineering with Enterprise Resource Planning (ERP) and SAP technologies. The program provides students with a strong foundation in programming, data structures, database management, software engineering, computer networks, data analytics, and emerging technologies, along with specialized knowledge of SAP systems and enterprise business processes.

The program aims to develop skilled professionals who can understand, design, implement, and manage technology-driven enterprise solutions. Students are introduced to the way SAP integrates various business functions, including finance, human resources, procurement, sales and distribution, production, inventory, and supply chain management, into a unified enterprise system. This enables organizations to streamline their operations, improve efficiency, manage resources effectively, and support data-driven decision-making.

The specialization also focuses on developing an understanding of business process integration and the role of information technology in modern organizations. Students learn to connect technical solutions with real-world business requirements and gain exposure to enterprise-level systems and digital transformation practices.

By combining the technical foundation of CSE with specialized SAP knowledge, the program bridges the gap between computing technologies and business operations. It prepares students for diverse career opportunities in areas such as SAP consulting, ERP implementation, SAP development, business analysis, data management, and digital transformation. The program therefore equips graduates with the technical, analytical, and business-oriented skills required to address complex organizational challenges and contribute effectively to the rapidly evolving IT and enterprise technology landscape.

Who is the course for?

This course is intended for candidates who aspire to build careers in Information Technology, Enterprise Resource Planning (ERP), business process management, and SAP-enabled digital transformation, or pursue higher studies and research in computing and related fields. The CSE with SAP Specialization program provides students with a strong foundation in Computer Science and Engineering along with specialized knowledge of SAP solutions and enterprise business processes. Students can pursue careers as SAP consultants, SAP developers, business analysts, ERP professionals, and technology consultants across diverse industries.

The importance of this course in the wider discipline/area:

Computer Science and Engineering provides a strong foundation in programming, databases, networking, artificial intelligence, data management, and emerging technologies. The SAP Specialization complements this technical knowledge by introducing students to enterprise-level business processes and integrated information systems used by organizations worldwide.

The integration of CSE with SAP bridges the gap between technical computing and real-world business operations. Students develop an understanding of how technology supports and integrates key business functions such as finance, human resources, procurement, sales, production, and supply chain management. This interdisciplinary specialization prepares graduates for diverse career opportunities in IT, ERP, SAP consulting, and digital transformation.

Programme Educational Objectives (PEO):

PEO 01: To prepare students to excel in Computer Science and Engineering post graduate programs, to succeed in computing industry profession or successful entrepreneurs through quality education.

PEO 02: To provide students an ability to analyse and solve computer science and engineering problems through application of fundamental knowledge of math's, science and engineering.

PEO 03: To train students with good Computer Science and Engineering breadth, so as to comprehend, analyse, design and create innovative computing products and solutions for real life problems.

PEO 04: To inculcate in students professional and ethical attitude, communication skills, teamwork skills, lifelong learning, multidisciplinary approach and an ability to relate computer engineering issues with social awareness.

PEO 05: To equip students with excellent academic environment for a successful carrier as engineers, scientist, technocrats, administrators and entrepreneurs.

Programme Outcomes:

PO 01: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 02: 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.

PO 03: 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.

PO 04: 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.

PO 05: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO 06: 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.

PO 07: 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.

PO 08: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 09: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 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.

PO 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.

PO12: 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.

Programme Specific Outcomes (PSO):

PSO 01: Adequate strong skills in learning new programming environments, analyse and design algorithms for efficient computer-based systems of varying complexity.

PSO 02: The ability to understand the evolutionary changes in computing, apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success, real world problems and meet the challenges of the future.

PSO 03: Ability to utilize artificial intelligence and machine learning principles to develop machine intelligence algorithms and smart systems

Lab Infrastructure:

- Programming and Data Structure Lab
- Operating System and Computer Networks Lab
- Database Management System Lab
- Computer Architecture Lab
- Artificial Intelligence Lab
- Machine Learning Lab
- Cloud Computing and Virtualization Lab
- Data Science and Big Data Lab
- Network Security and Cryptography Lab
- ABAP Programming Lab
- Fiori Programming Lab
- Computer Centre

Eligibility:

Minimum 50% aggregate in 10th or equivalent examination and minimum 60% aggregate in 10 +2 or equivalent from any recognized board with PM + Chem/ Bio. Tech/ Biology/Technical Vocational (with 45%), subject to securing a minimum of 45% marks in each individual subject.

Duration (in Year): 4

Placement & Career Opportunities / Research Opportunities:

The CSE with SAP Specialization offers students a broad range of career opportunities by combining strong technical knowledge with expertise in enterprise systems, business processes, and SAP technologies. Along with programming and software development skills, students develop the ability to analyze real-world problems, design technology-driven solutions, and support digital transformation across various industries.

Some of the major career opportunities include:

- Software Engineer / Developer:** Develops and implements software solutions for applications across different sectors.
- Software Testing & Quality Analyst:** Ensures software quality by testing applications and identifying and resolving defects.
- Information Security Professional:** Works on securing systems, networks, applications, and enterprise data from cyber threats.
- SAP Consultant / Technical Consultant:** Helps organizations implement, customize, and optimize SAP solutions according to business requirements.
- ERP Consultant / Business Analyst:** Analyzes business processes and bridges the gap between technical teams and business users to develop effective enterprise solutions.
- Data Analytics & Digital Transformation Professional:** Works with enterprise data, business intelligence, cloud technologies, AI, and automation to drive data-driven decisions and digital transformation.

Research Opportunities:

Graduates can pursue higher studies and research in areas such as Computer Science, ERP and SAP systems, Business Analytics, Artificial Intelligence, Data Science, Cloud-based ERP, Cybersecurity, Business Process Automation, and Digital Transformation. The combination of CSE and SAP knowledge enables students to explore innovative solutions for improving organizational efficiency and supporting technology-driven decision-making.