



Programme : B.Sc. (Cyber Security and Blockchain)
Batch : 2025-28

1. Program Mission

The program aims to provide a strong foundation in mathematics, science, and technology, enabling students to design and implement innovative, secure IT solutions. It emphasizes cultivating technical proficiency, analytical thinking, and problem-solving skills, along with the ability to analyse and interpret technical and economic data. The program seeks to instil a deep sense of professional ethics, social responsibility, and sensitivity to environmental and energy concerns. Additionally, it fosters effective communication, leadership, and teamwork, preparing students to excel in collaborative and multidisciplinary environments. By equipping students with strategies for lifelong learning, the program ensures they remain at the forefront of advancements in cybersecurity and blockchain technology while contributing responsibly to the profession and society.

2. Programme Educational Objectives/Goals(PEOs)

- i. **Problem-Solving and Innovation:**
Students will be able to plan, design, develop, and troubleshoot complex problems in the fields of cybersecurity and blockchain technology, generating innovative solutions for real-world challenges.
- ii. **Strong Technical Foundation:**
Students will apply a solid understanding of mathematical concepts, algorithms, cryptographic techniques, and the principles of computer science to tackle problems using systematic and logical approaches in cybersecurity and blockchain domains.
- iii. **Societal and Ethical Awareness:**
Students will be able to assess societal, health, safety, legal, cultural, and environmental issues related to cybersecurity and blockchain technologies, applying reasoned contextual knowledge to understand their impact and contribute to sustainable development and ethical practices.
- iv. **Application of Modern Tools and Techniques:**
Students will be equipped to apply modern cybersecurity and blockchain tools and technologies to complex systems, understanding the limitations and making informed choices in selecting appropriate techniques for real-world applications.
- v. **Professionalism and Communication:**
Students will demonstrate strong professional conduct, effective communication, and behavioral skills that enhance their individual and team performance in the fields of cybersecurity and blockchain.
- vi. **Career Success and Higher Education:**
Students will be well-prepared for successful careers in industries, meeting the needs of Indian and multinational companies, or excelling in higher studies and research in cybersecurity, blockchain, or related fields.

- vii. **Ethical Practices and Professional Norms:**
Students will be able to demonstrate an understanding of professional ethics, software security norms, and the best practices in cybersecurity and blockchain technologies, ensuring responsible and secure handling of data and digital assets.
- viii. **Lifelong Learning and Technological Adaptation:**
Students will develop the ability to engage in independent and lifelong learning, staying updated with the latest developments and emerging technologies in cybersecurity and blockchain to continuously enhance their skills and knowledge.

3. Programme Operational Objective(POOs)

- i. The B.Sc.(CS & BC) programme intends to facilitate an academically conducive environment and infrastructure to achieve excellence in teaching, learning and research.
- ii. The B.Sc.(CS & BC) programme will provide ample opportunities to its students to participate in curricular, co-curricular and extra-curricular activities for their holistic development.
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- iv. The B.Sc.(CS & BC) programme will inculcate core values and ethical conduct amongst students, faculty, and staff members.
- v. The B.Sc.(CS & BC) programme will encourage cultural diversity and a sense of social and environmental responsibility.
- vi. The B.Sc.(CS & BC) programme will provide ample opportunities for international exposure to faculty members and students

Program Structure of Three Years B.Sc. (Cyber Security & Blockchain) Program

Semester - I			
Course Code	Course Name	Course Type	Credit Unit
CSIT143	Problem Solving using Computers & Python Programming	Allied Courses	6
CSE201	Database Management Systems	Core Courses	5
BC109	Communication Skills - I	Communication Skills	3
IT425	Cyber and Information Security	Core Courses	3
MATH114	Applied Mathematics- I	Allied Courses	4
	Foreign Business Language	VAC	2
Total			23
Semester -II			
Course Code	Course Name	Course Type	Credit Unit
CSIT365	Analysis of Algorithms and Data Structures	Core Courses	5
CSE416	Applied Probability and Statistics	Core Courses	3

BC206	Communication Skills - II	Communication Skills	3
CSE202	Operating System	Core Courses	4
CSIT118	IT Applications in Business	Human Social Sciences & Management Courses	3
CSE442	Applied Cryptography	Allied Courses	4
	Foreign Business Language	VAC	2
Total			24
Semester - III			
Course Code	Course Name	Course Type	Credit Unit
New Course	Ethical Hacking	Core Courses	4
BS105	Individual Excellence & Social Dynamics	Behavioural Science	3
CSE207	Digital Electronics and Computer Organization	Allied Courses	5
CSE475	Blockchain Technologies Platforms & Applications	Core Courses	4
IT421	Cloud Infrastructure Services	Core Courses	4
ETTP101	Term Paper - I	Non Teaching Credit Course	3
	Foreign Business Language	VAC	2
Total			25
Semester - IV			
Course Code	Course Name	Course Type	Credit Unit
BS208	Creativity for Team Excellence	Behavioural Science	3
CSIT371	Cyber Security and cyber-Laws	Specialisation Elective Courses	5
CSIT216	Fundamentals of Routing Protocols	Core Courses	5
New Course	Fundamentals of Incident Handling	Specialisation Elective Courses	5
CSE302	Data Communication and Computer Networks	Core Courses	4
New Course	Cyber Forensics	Specialisation Elective Courses	6
	Foreign Business Language	VAC	2
Total			25
Semester - V			
Course Code	Course Name	Course Type	Credit Units
CSIT373	Introduction to IoT	Core Courses	5
IT310	Network Management and Security	Core Courses	4

CSE458	Cloud Security & Administration	Domain Elective Courses	3
IT435	Security Assessment and Risk Analysis	Specialisation Elective Courses	4
IT433	Blockchain and Distributed Ledger Technologies	Specialisation Elective Courses	4
PFE301	Professional Ethics and Social Responsibility	Professional Ethics	2
ETMN100	Minor Project	Non Teaching Credit Course	4
	Foreign Business Language	VAC	2
Total			24
Semester - VI			
Course Code	Course Name	Course Type	Credit Unit
IT436	Real-Time Cyber Threat Detection and Mitigation	Specialisation Elective Courses	4
CSE439	Cloud Security	Specialisation Elective Courses	4
	Server Administration & Security	Specialisation Elective Courses	4
	Network and Wireless Security	Specialisation Elective Courses	4
ETMJ100	Major Project	Non-Teaching Credit Course	6
	Foreign Business Language	VAC	2
Total			20
Minimum Prescribed Credit Requirement - 143			

4. Education Outcome Assessment Plan:(as per the University format)

Type	Assessment/PLO
Direct	Comprehensive examinations
	End Semester Examinations
	Viva Voce
Indirect	Exit interviews
	External Reviewers

5. Programme Learning Outcomes(PLOs)

i. Application of Theoretical Knowledge and Technical Skills:

The student will be able to apply in-depth knowledge of theoretical concepts in

cybersecurity, cryptography, and blockchain technology, along with practical programming skills, to solve complex problems in these domains.

- ii. **Design, Analysis, Implementation, and Evaluation of Secure Systems:**
The student will be able to design, analyze, implement, and evaluate secure systems, processes, and components in the field of cybersecurity and blockchain technology, ensuring their functionality and meeting desired security needs.
- iii. **Application of Cybersecurity and Blockchain Tools and Techniques:**
The student will be able to apply modern cybersecurity tools, blockchain frameworks, and techniques to solve complex software and system security problems, ensuring data protection and secure communication.
- iv. **Modeling and Design of Secure IT Systems:**
The student will be able to apply algorithms, principles, and practices from computer science theory to model and design IT-enabled systems in cybersecurity and blockchain, considering public health, safety, cultural, societal, and environmental factors.
- v. **Effective Communication Skills:**
The student will be able to communicate effectively, both orally and in writing, with a range of audiences, clearly presenting complex cybersecurity and blockchain concepts, solutions, and findings.
- vi. **Functioning Effectively in Teams and Leadership Roles:**
The student will be able to function effectively as a part of a team, take initiative, and lead projects towards achieving common goals in a global business or technical environment.
- vii. **Professional, Ethical, Legal, and Social Responsibility:**
The student will be able to demonstrate an understanding of professional, ethical, legal, security, and social issues and responsibilities in the context of cybersecurity and blockchain, ensuring secure and responsible practices in the organization.
- viii. **Commitment to Professional Ethics and Software Practices:**
The student will be able to follow ethical principles and norms, committing to professional ethics and responsibilities in cybersecurity and blockchain practices, and ensuring compliance with security standards and regulations.
- ix. **Strategic Planning and Project Management Skills:**
The student will be able to strategize business plans, demonstrate knowledge of project management, and design and develop plans for constructing secure software and blockchain-based systems of varying complexity.
- x. **Lifelong Learning and Adaptation in Dynamic IT Domains:**
The student will be able to recognize the need for lifelong learning and engage in continuous education to stay updated with dynamic developments in cybersecurity, blockchain technologies, and the broader IT field.
- xi. **Impact of IT Solutions in Societal and Environmental Contexts:**
The student will be able to understand the impact of professional IT solutions, particularly in cybersecurity and blockchain, on societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- xii. **Information Security and Knowledge Management:**
The student will be able to evaluate and compare methods for securely storing, retrieving, and analyzing data for knowledge management in cybersecurity and blockchain systems, ensuring data integrity and privacy.