SURESH GYAN VIHAR UNIVERSITY
Accredited by NAAC with 'A+' Grade

A+ GRADE CGPA 3.32 NAAC

nirf UNIVERSITY RANK BAND 101-150

Bachelor of Computer Applications

Specialization in Cybersecurity

PROGRAM OVERVIEW

Cybersecurity is a vital field of study in today's Digital Information Age, dedicated to safeguarding digital information. It encompasses a wide range of technologies, frameworks, processes, and practices aimed at protecting data, communications, devices, applications, and systems from threats, attacks, and physical harm. This specialized Bachelor of Computer Applications programme in Cybersecurity equips students with both theoretical foundations and practical skills necessary to secure the digital realm. It emphasizes key areas such as Cryptography, Network and Application Security, Ethical Hacking, and Cyber Forensics. Additionally, the programme fosters awareness of vulnerabilities and mitigation strategies, preparing students to navigate the evolving landscape of digital disruption and transformation.

ELIGIBILITY

Applicants should have passed the 10+2 or equivalent examination from a recognized board with a minimum aggregate of 50% marks (45% in case of reserved category).

CURRICULUM*:

3 Years I Full time

SEMESTER I

- Problem Solving Using Programming
- Digital Electronics and Computer Fundamentals
- Introduction to Cybersecurity
- Theory of Mathematics
- Human Values and Professional Ethics
- Introduction to Indian Knowledge System
- Coding and Computational Thinking – I

SEMESTER II

- Data Structures
- Operating Systems
- Cyber Attacks and Risk Management
- Object Oriented Programming using Java
- Environmental Science and Disaster Management
- Communication Skills and Personal Abilities
- Employability Skills Programme – I

SEMESTER III

- Computer Networks
- Database Management System
- IT Governance, Risk and Compliance
- Cryptography and Network Security
- Version Control System
- Coding and Computational Thinking – II

SEMESTER IV

- Network Architecture and Design
- Data Visualization
- Web Architecture – Principles and Protocols
- Ethical Hacking and Penetration Testing
- Quantitative and Qualitative Aptitude
- Employability Skills Programme – II

SEMESTER V

- System Analysis and Design
- Vulnerability Management
- Cloud Web Services
- Application and Web Security
- Security Operations and Incident Response
- Employability Enhancement Programme

SEMESTER VI

- Disaster Recovery and Business Continuity Management
- Cloud Security
- Malware Analysis and Reverse Engineering
- Cyber Crime Investigation and Digital Forensics
- Major Project / OJT

MARKET POTENTIAL

The cybersecurity sector is witnessing rapid global growth, driven by increased digital adoption and the rising frequency of cyber threats. As organizations across industries prioritize strengthening their security infrastructure, the demand for skilled cybersecurity professionals continues to surge. This presents promising career opportunities for BCA and BTech graduates specializing in cybersecurity, particularly amidst a significant global talent shortage. India's cybersecurity market is expanding swiftly, supported by government initiatives and increased industry investments, highlighting its critical importance.

Globally, the cybersecurity market was valued at USD 190 billion in 2023 and is expected to exceed USD 300 billion by 2028, growing at a CAGR of approximately 10%. The proliferation of cloud computing, IoT, and hybrid work models has intensified cyber risks, with over 70% of global organizations expected to adopt Zero Trust frameworks by 2027. A notable concern is the projected gap of 3.5 million unfilled cybersecurity jobs worldwide by 2026.

In the Asia-Pacific region, the threat landscape is particularly severe, with a sharp rise in ransomware, phishing, and data breaches. Cybersecurity spending in the region is projected to grow at a CAGR of 11–13% through 2028, led by the BFSI, telecom, and government sectors. Countries such as India, Singapore, and South Korea are investing heavily in cybersecurity ecosystems and professional training.

Specifically in India, the cybersecurity market was valued at USD 6.5 billion in 2023 and is expected to grow to USD 13.5 billion by 2028 at a CAGR of around 15%. National initiatives like Digital India, Cyber Surakshit Bharat, and upgrades to CERT-In are significantly enhancing the country's cyber defense capabilities. With over 2,000 cyberattacks reported daily, there is a pressing need for professionals skilled in areas such as VAPT, SOC operations, forensic analysis, and cloud security. Key roles in demand include Cybersecurity Analyst, Penetration Tester, SOC Analyst, Ethical Hacker, and Cloud Security Engineer.

CAREER PROGRESSION: