

Diploma in Cyber Security

(Syllabus Applicable w.e.f. Academic Session 2018-19)



Uttarakhand Residential University
Almora, Uttarakhand-263001

www.urualmora.org / www.uru.ac.in

In partnership with



RedIT Innovators USA/Bhumi IT India

Note: This curriculum is subject to change based on University Guideline

Introduction - Cyber Security

Cyber security is the exercise of safeguarding the integrity, confidentiality and availability of information. It represents the ability to defend against and make progress from accidents like hard drive failures or power outages, and from attacks by antagonists. Internet safety is important to secure online transaction and whole using digital wallets in mobile. In absence of adequate knowledge about phishing, attacks, hacking, credit and fraud data errors or unprotected online services people get affected by cyber security threats.

Protecting enterprise data and infrastructure has become one of the most critical roles of IT. We transmit vast quantities of sensitive data. Digital transactions are made, and we store even more, creating veritable gold mines for hackers who want to steal valuable information commit denial of service attacks, or simply create havoc.

As the amount of digital data and transactions grow, so does the need for cyber security professionals in a variety of roles.

The increase in both data and attacks has created a strong demand for skilled professionals in this domain.

Why one should study Cyber Security

Wide Scope: Cyber security is the safe and responsible use of information and communication technology. It is not only about keeping information safe and secure, but also about being responsible with that information, being respectful of other people online people online and using good netiquette.

The cyber security market is expected to develop to USD 35 billion by 2025. A report expresses that the nation needs no less than one million skilled individuals by 2020. These figures are clear sign that the nation has a gigantic shortage of qualified cyber security experts and the need is going to become severe with cyber criminals increasingly targeting enterprises and government establishments.

Opportunities: Big IT companies in India – viz. TCS, Infosys, Wipro, Cognizant and others are looking for cyber security experts & ethical hackers. Demand for security experts is expected to grow huge in coming years. Big Internet companies like Google, Twitter, Facebook, Yahoo and others have already began offering huge prizes for reporting security bugs in their systems. The salaries in the domain will always be higher than the regular IT jobs – provided the candidates know the job. Organizations including public sector organizations, Managed security service providers, banking and financial industries are in the lookout for specialized security skills. Foreign nations have started to track good security skill sets.

Why there is need of Cyber Security Program

Becoming a cyber-security professional does not require going back to college for a three-year degree or years of hands-on-experience. You can get started in this fast growing field with some IT knowledge and relevant cyber security certification like the course started by URU in collaboration with giant industry partner Red IT innovators/ Bhumi IT innovators who are Next Gen Education Services and Solutions providers.

Who should OPT Cyber Security Career?

Any of these groups can pursue this course

- Anyone who wishes to pursue a career in a strong job market with good pay, constant challenge and ease of entry.
- Anyone who is interested in security, securing data & information
- Anyone who works or is interested in learning about cyber security and cyber research
- People who are just started out in the security field and want a fast, easy way to find out about what cyber security means.

There are many areas within Cyber Security one can master. One can start looking into the Cyber Security from the discipline of IT they are working in, say, a web developer with experience in PHP and JavaScript; can master in web security first and gradually move into cyber security. Similarly, for someone working on networking, they can become an expert in network security and move into cyber security. If someone already working in a particular domain in IT, he will find the ways he can contribute to the security aspect of it and from there he can start building a career in cyber security.

To master Cyber Security you should have some knowledge of programming, web, database and networking also.

Diploma in Cyber Security Eligibility

Bachelor's/Master's degrees in Computer Science/Engineering/Math/Statistics/ Economics/Science

Key Features

- Interactive classroom sessions
- Projects and practical assignments after each module
- Guaranteed Internship and placement assistance
- Faculty from the industry
- Work on Live Projects

Duration of Course: 1 Year

COURSE OUTLINE

SEMESTER # 01: THEORY				
SL:NO	CODE	TITLE	DESCRIPTION	MARKS
01	BITI - 1806201	Access Control and Intrusion Detection	<ul style="list-style-type: none">• Overview of Identification and Authorization• I & A Techniques• Overview of IDS• Intrusion Detection Systems and Intrusion Prevention Systems	100

02	BITI - 1806202	Server Management and Firewalls - I	<ul style="list-style-type: none"> User Management DNS Routing and Load Balancing 	100
03	BITI - 1806203	Server Management and Firewalls - II	<ul style="list-style-type: none"> Overview of Firewalls Types of Firewalls DMZ and firewall features 	100
04	BITI - 1806204	Security for VPN and Next Generation Networks	<ul style="list-style-type: none"> VPN Security Security in Multimedia Networks Fax Security Link Encryption Devices 	100
SEMESTER # 01: PRACTICAL				
01	BITI - 1806205	Access Control & Firewall Lab	A hands-on lab during which participants apply practices, mechanisms, and technologies to solve a set of complex problems	50
02	BITI - 1806206	VPN Security Lab	A hands-on lab during which participants apply practices, mechanisms, and technologies to solve a set of complex problems	50
TOTAL				500

SEMESTER # 02: THEORY				
SL:NO	CODE	TITLE	DESCRIPTION	MARKS
01	BITI - 1806207	Security Architectures and Models	<ul style="list-style-type: none"> Designing Secure Operating Systems Controls to enforce security services Information flow model and Biba model 	100
02	BITI - 1806208	System Security	<ul style="list-style-type: none"> Desktop Security Email security: PGP and SMIME Web Security: web authentication, SSL and SET 	100
03	BITI - 1806209	OS Security - I	<ul style="list-style-type: none"> OS Security Vulnerabilities, updates and patches OS integrity checks Anti-virus software 	100
04	BITI - 1806210	OS Security - II	<ul style="list-style-type: none"> Design of secure OS and OS hardening Configuring the OS for security Trusted OS 	100
SEMESTER # 02: PRACTICAL				

01	BITI - 1806211	System Security Lab	A hands-on lab during which participants apply practices, mechanisms, and technologies to solve a set of complex problems	50
02	BITI - 1806212	OS Security Lab	A hands-on lab during which participants apply practices, mechanisms, and technologies to solve a set of complex problems	50
TOTAL				500