



## PSG CENTRE FOR ACADEMIC RESEARCH AND EXCELLENCE

### One Year Certification Programme on Cyber Security (2019-2020)

Organized by  
Department of Information Technology  
PSG College of Technology

#### Course Overview

The rise in the widespread use of technology paves a way to rise in cybercrime. For hackers, the possibilities increased exponentially, along with the potential rewards like ransomware. Hence being cautious about the situation, the internet experts paying attention by investing a lot of time and money in predicting cyber security trends. This programme aims to provide a foundational platform for Cyber Security Aspirants by providing Cyber Security Awareness and Training that heighten the chances of catching a scam or attack before it is fully enacted, minimizing damage to the resources and ensuring the protection of information technology assets. The programme focuses to cover all cyber security landscapes theoretically and practically. This course provides a range of career opportunities in Cyber Security Sectors as Network/Application Security Analyst, Cyber Security Analyst, Cyber Security Analyst (Soc) Security Automation, Cyber Security Practitioner, Cyber Defense Analyst, Penetration Tester, Information Security Engineer in leading IT Industries and to act as Cyber Security Experts in in Governmental Organizations.

#### Course Objectives:

The course is designed in a way that a candidate can identify, analyze and remediate computer security breaches by learning and implementing the real-world scenarios in Cyber Investigations Laboratory, Network Security Laboratory and in Security and Penetration Testing Laboratory.

- Exhibit knowledge to secure corrupted systems, protect personal data, and secure computer networks in an Organization.
- Practice with an expertise in academics to design and implement security solutions.
- Understand key terms and concepts in Cryptography, Governance and Compliance.
- Develop cyber security strategies and policies
- Understand principles of web security and to guarantee a secure network by monitoring and analyzing the nature of attacks through cyber/computer forensics software/tools.

#### Course Outcomes:

Upon successful completion of the programme, candidates will be familiar with cyber security landscapes and able to

- a) Analyze and evaluate the cyber security needs of an organization.
- b) Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.
- c) Measure the performance and troubleshoot cyber security systems.

- d) Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer forensics software/tools.
- e) Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators
- f) Design and develop a security architecture for an organization.
- g) Design operational and strategic cyber security strategies and policies.

**Eligibility:**

- B.Sc./M.Sc. or Diploma/ B.E/ B. Tech or M.E /M. Tech
- Prerequisites of the Course: Basics knowledge in the field of Computer Science

**Schedule:**

Classes will be conducted during second and fourth weekends of every month.

**Mode of Assessment and Certification:**

The course will be handled by experienced faculty members from the Department of Information Technology, PSG College of Technology and experts from Industries. The scheme of assessment for Two Semesters is listed below. Each semester comprises of 4 Theory courses and 2 Laboratory courses. Candidates will be assessed continuously through routine Tests, Assignments and Final Examination components.

**Facilities Available:**

- **Exclusive Lab for Cyber Security Programme that spans Threat intelligence methods, Machine learning, Cyber-physical systems, IoT toolkits, Digital forensics, Cloud security analysis, Malware Analysis, Penetration Testing.**

**Course Coordinators:**

Dr. K. Umamaheswari, Professor and Head, Dept. of IT, PSG College of Technology

Dr.K.AnithaKumari, Programme coordinator, Dept. of IT, PSG College of Technology

## SCHEME

<b>SEMESTER I</b>						
<b>CODE</b>	<b>SUBJECT</b>	<b>T</b>	<b>P</b>	<b>CA</b>	<b>FE</b>	<b>Total</b>
PG ITCS 01 01	Cyber Investigations	4	-	50	50	100
PG ITCS 01 02	Applied Cryptography	4	-	50	50	100
PG ITCS 01 03	Programming in Python	4	-	50	50	100
PG ITCS 01 04	Network Security	4	-	50	50	100
PG ITCS 01 05	Cyber Investigations Laboratory	-	4	50	50	100
PG ITCS 01 06	Network Security Laboratory	-	4	50	50	100
	<b>Total</b>	<b>16</b>	<b>8</b>	<b>300</b>	<b>300</b>	<b>600</b>

<b>SEMESTER II</b>						
<b>CODE</b>	<b>SUBJECT</b>	<b>T</b>	<b>P</b>	<b>CA</b>	<b>FE</b>	<b>Total</b>
PG ITCS 02 01	Digital Forensics	4	2	50	50	100
PG ITCS 02 02	Cyber Security Governance, Risk Management and Compliance	4	-	50	50	100
PG ITCS 02 03	Malware Analysis and Reverse Engineering	4	-	50	50	100
PG ITCS 02 04	Cyber Physical Systems	4	-	50	50	100
PG ITCS 02 05	Security and Penetration Testing Laboratory	-	2	50	50	100
PG ITCS 02 06	Project Work	-	4	50	50	100
	<b>Total</b>	<b>16</b>	<b>8</b>	<b>300</b>	<b>300</b>	<b>600</b>

**\*Note: Specified hours indicate the total hours per month**