



# CERTIFIED CYBER ENGINEER

## COMPUTER & NETWORK SECURITY

*Learn from experienced Industry experts with 'live' case studies in Cyber Security and best academicians from IIT Madras, supported by Subject Matter Experts from IISc Bangalore, IIT Bangalore*

## OUR STUDENTS HAVE BEEN PLACED AT



SAINT-GOBAIN RESEARCH INDIA

AVRUTTI RESEARCH





## ABOUT US

### IITM PRAVARTAK TECHNOLOGIES

Foundation is a section 08 Company housing the Technology Innovation Hub on Sensors, Networking, Actuators, and Control Systems (SNACS). We are committed to transforming the frontiers of knowledge. Our start-up ecosystem is the nurturing space of brilliant professionals, Innovative entrepreneurs, curious young talent, and

### SSC NASSCOM

SSC NASSCOM exists as the national standard setting body for technology skills, working in close coordination with the industry body NASSCOM and under the aegis of NSDC. We live in a continuously changing world that's increasingly reliant on new, emerging technologies. SSC is working to accelerate the transformation of the education and skills ecosystem to position India as THE global talent hub. The SSC, as part of NASSCOM, is specifically tasked with reskilling and upskilling India's workforce to ensure that the talent is future-ready in terms of new-age skills and jobs. SSC sits squarely at the center of all talent development initiatives along with Future Skills. Skill Development on a national scale is a complex pursuit that has us working with various moving variables across dimensions. We rely on objectivity as an important value to align stakeholders.  
(NASSCOM QP REFERENCE ID: SSC/Q0917)

### FISST ACADEMY

Forensics Intelligence Surveillance and Security Technologies (FISST) as the name suggest works on the entire stack of Security Technologies starting from Sensors / Capturing devices to Surveillance to Intelligence Forensics, both Physical and Cyber technologies space.

**Our faculty are industry experts with an added experience of 300+ years in cyber security. Our faculty include professors from IISc Bangalore, IIIT Bangalore, IIIT D&M and IIT Madras.**



## ABOUT DIGITAL SKILLS ACADEMY

**Digital Skills Academy (DSA)** is an initiative of NASSCOM, an apex body and IIT-Madras to deliver structured IT-ITeS skill programs through online and classroom training. DSA has many programs listed in their website that poses direct development to support IT & ITeS requirements of the \$154 billion dollar IT BPM industry in India. Certified Cyber Engineer (CCE) is one of the exclusive programs from DSA to spread the need of Cyber Security and address the market requirements.

## ELIGIBILITY

For Indian Participants - A pass in high school from a recognized board in India(10+2).  
For International Participants - Equivalent high school certificate or diploma.

## PRE REQUISITES

Basic understanding of technology, networks and security, while not mandatory, will be an added advantage.

## COURSE OBJECTIVES

It is a course to learn the most effective steps to prevent attacks and detect adversaries with actionable techniques for Computer and Network, that one can directly apply when they get to work.

As Certified Cyber Engineer, the participant will learn tips and tricks from the best of the experts from a mix of industry & academia, so that they can win the battle against the wide range of cyber adversaries that want to harm the enterprises' IT environment.

## Programme Advisor and Mentor



**DR. V. KAMAKOTI**  
DIRECTOR, IIT MADRAS

Professor V. Kamakoti is a computer scientist and the current Director of the Indian Institute of Technology Madras. He is a Professor in the Department of Computer Science and Engineering and has been with the Institute since 1998. His research interests include VLSI design, computer architecture, and embedded systems. He has published over 200 papers in international journals and conferences. He is a recipient of several awards, including the Abdul Kalam Technology Innovation National Fellowship, the IESA Techno Visionary Award, and the IBM Faculty Award. He is a Fellow of the Indian National Academy of Engineering and the National Academy of Sciences, India. He is also a strong advocate for social responsibility and believes that engineers have a responsibility to use their skills to solve real-world

## Programme Coordinator:



**Professor K. Mangala Sunder,**  
Programme Coordinator,  
Head, Digital Skills Academy,  
IIT - Madras

Prof. K. Mangala Sunder is a Professor in the Chemistry Department at the Indian Institute of Technology Madras. He received his Ph.D. in theoretical chemistry from McGill University in Montreal, Canada in 1988. His research interests include theoretical molecular and magnetic resonance spectroscopies, quantum chemistry and quantum information. He is also a programme coordinator for the Digital Skills Academy at IIT Madras, which is a joint initiative of the institute and IITM Pravartak Technologies Foundation. The academy aims to provide industry-relevant skilling to fresh engineering graduates to help them secure meaningful

## Programme Director:

Mohan is a Mission Integrator & Innovator at Forensics, Intelligence, Surveillance and Security Technologies (FISST). He is a Signal Processing Specialist from IIT Roorkee with over 31 years of experience. He currently provides consulting and services to various top security and intelligence agencies and helps build security solutions including IOT sensors. Mohan is also MD, LatticeBridge Infotech (LBIT) 2002.



**Mohan Ram Chandrasekar**  
Managing Director,  
FISST ACADEMY

## FACULTY



**DR. Noor Mohammad S.K**  
IIT D&M - Kanchipuram

Prof. Noor has received his Ph. D. (CSE) from Indian Institute of Technology, Madras and M.Tech. from National Institute of Electronics and Information Technology Aurangabad in 2003. His broad research interests include Software for VLSI Design, Evolvable Hardware, Reconfigurable Computing, Network System Design, Software Defined Radio, High Performance VLSI Architectures for Digital Signal Processing, Packet Processing Architectures and Algorithms, Reversible Circuit Design.



**Mohan Ram Chandrasekar**  
Adjunct Faculty  
@ IIIT-B & Sri City

Mohan is a Mission Integrator & Innovator at Forensics, Intelligence, Surveillance and Security Technologies (FISST). He is a Signal Processing Specialist from IIT Roorkee with over 31 years of experience. He currently provides consulting and services to various top security and intelligence agencies and helps build security solutions including IOT sensors. Mohan is also MD, LatticeBridge Infotech (LBIT) 2002.

Dr. Harish Ramani received his Masters in Computer Science & Technology from University of Madras and Ph.D from Australia. He has attained CEH, CHFI, ECSA, CEI, CND, ISO 27001, ISO 9001 and other Cyber Security related certifications. In 2014, he founded Internettechies (Today Tevel Cyber Corps) specialization in Cyber Security in Chennai. He is passionate about training people in Cyber Security at various levels, and serve the industry with his consulting capability. He is a Data Centre Architect, Cyber Insurance expert, an incident handler, a Malware analyst and a security researcher.



**Dr. Harish Ramani**  
Visiting Faculty  
@IIIT-B & Sri City



## COURSE CONTENT

### MODULE 1

#### **INTRODUCTION TO COMPUTER NETWORK SECURITY:**

Introduction, securing the computer networks- hardware/software, forms of protection, security standards; Sources of vulnerabilities and its assessment (4 hrs).

### MODULE 2

#### **SECURITY CHALLENGES, ASSESSMENT, ANALYSIS AND ASSURANCE:**

Sources of security threats, threat motives, management and correlation and security threat awareness; System security policy, Building a security policy, security requirement specification, Threat Identification and analysis, Vulnerability identification and assessment and security monitoring and auditing; Disaster Management, Resources for disaster planning and recovery (6hrs).

### MODULE 3

#### **ACCESS CONTROL, AUTHORIZATION AND AUTHENTICATION:**

Access - Rights, Control systems; authorization- mechanisms, types, principles, and granularity; Authentication - factors and effectiveness, elements, types, methods and policy (4 hrs).

### MODULE 4

#### **CRYPTOGRAPHY:**

Symmetric Encryption, public key encryption, enhancing security and Key management; Public key Infrastructure, hash function and digital signatures (4 hrs).

### MODULE 5

#### **SYSTEM INTRUSION DETECTION AND PREVENTION:**

Intrusion detection mechanism, systems, types; Response to system intrusion, challenges to intrusion detection systems and implementations; Intrusion prevention systems (4 hrs).

### MODULE 6

#### **COMPUTER AND NETWORK FORENSICS:**

Computer forensics, network forensic and forensics tools (2 hrs)

### MODULE 7

#### **FIREWALL, VIRUS AND CONTENT FILTERING:**

Firewall- types, configuration, implementations and limitations; Scanning, Filtering and blocking; Virus filtering and content filtering (4 hrs).  
Computer Network Security Protocols: Application Level Security, Security in the Transport Layer, Network layer, Link layer and over LANs (6 hrs).

### MODULE 8

#### **SECURITY IN WIRELESS NETWORK AND DEVICES:**

WLAN security concerns and best practices for WI- FI security (4

### MODULE 9

#### **SECURITY IN SENSOR NETWORKS:**

Challenges, vulnerabilities and attacks, security mechanisms and best practices for sensors (4 hrs).

## KEY TAKEAWAYS

**2** Enhance prospects of employability

**4** Power to create policies within an organization

**6** Lectures by eminent academicians

**8** Design advanced network architecture with VLANs

IITM PRAVARTAK Certification and NASSCOM **1**

Ability to design and build networks **3**

Live experiential tool practice **5**

Potential to build virtual machines for an organization **7**

15 practical hours with solutions **9**



**15 Hours**  
live delivery with hands on demo



**15 hours**  
tools and hands on exercises



**15 hours**  
of self learning from reading video materials



**10 hours**  
online bootcamp



## **PEDAGOGY**

The primary method of instruction for theory will be through recorded sessions and reading materials. Hands-on will be LIVE demonstration that will be delivered online via internet to participant desktops/laptops or classrooms. The lectures will be delivered by eminent academicians and practicing industry experts. The programme will be primarily taught through a combination of lectures, discussions, exercises and labs. All enrolled students will be provided access to our FISST Whizard Cloud Campus through which students may access other learning aids, reference materials, assessments and assignments as appropriate.

Throughout the duration of the course, students will have the flexibility to reach out to the Professors, real time during the class or offline via the FISST Whizard Cloud Campus to raise questions and clear their doubts.

## **ASSESSMENT**

There are periodic evaluation components built in as a part of the program. These may be in the form of a quiz, assignment or other objective/subjective assessments as relevant and applicable to the program. A minimum of 70% attendance to the LIVE lectures and completion of assignments / assessments, is a prerequisite for the successful completion of this program. Participants who satisfy the attendance criteria and successfully clear the evaluation components will be awarded a certificate of completion.

## **DURATION**

15 Hours

Live Delivery with hands on demo (mainly theory on Computers and networking fundamentals)

15 Hours

Tools and hands on exercises (students try the tools and demonstrate themselves and report)

15 Hours

Self learning from reading and video materials

10 Hours

Online Bootcamp

TOTAL = 55 Hours

## **CLASS SCHEDULE**

**2 DAYS PER WEEK FOR 4 WEEKS**

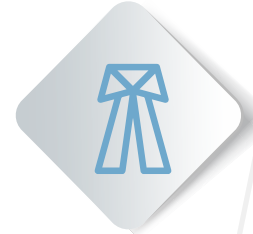
## WHO CAN ATTEND?



STUDENTS



TEACHERS



LAWYERS



SOFTWARE  
PROFESSIONALS



BUSINESS  
ANALYSTS



BUSINESS  
OWNERS



ENGINEERS



IT PROFESSIONALS



CHARTERED  
ACCOUNTANTS



ADMINISTRATORS  
& MANAGERS

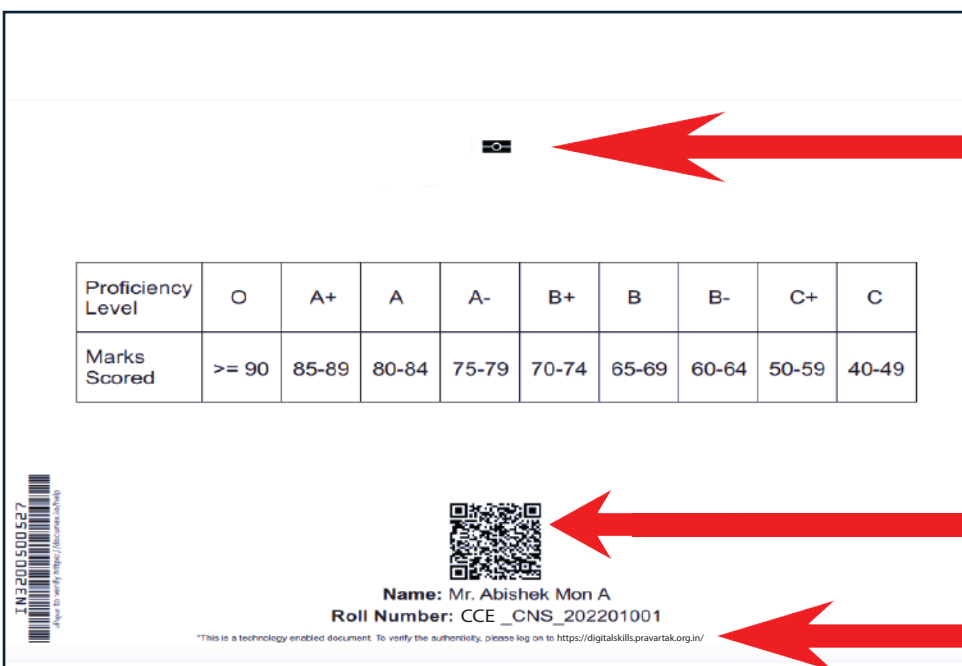
Anyone who  
wants to  
**start a  
career in  
cyber  
security**

## SAMPLE CERTIFICATE WITH UNIQUE BARCODE AND QR CODE



The border of the certificate can be zoomed in to view IITM Pravatark Technology Innovation Hub of IIT Madras

When shown under a UV light the IITM PRAVARTAK watermark glows for added authenticity



This certificate is embedded with a NFC chip that has details of the candidate providing an additional layer of verification

The QR code provided can be scanned by employers to verify the authenticity of the certificate through the IITM PRAVARTAK website

Candidates can access their IITM PRAVARTAK student portal and download the certificate using a protected URL

## OUR PARTICIPANTS INCLUDE

### Banking Sector



SBI



Vijaya Bank



Axis Bank



Canara Bank



HDFC Bank



IDFC Bank



Deutsche Bank



Royal Bank of Scotland



Manapuram Gold Loan

### IT Consulting and Service Sector



Deloitte



HCL



Infosys



Wipro



TCS



Cognizant



Schneider



Oracle



Microsoft



Shell



Cisco



Honeywell

### Public Sector



IRCTC



Railtel



NLC India



Dredging Corporation



Gov of karnataka



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RA Puram Chennai-28



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