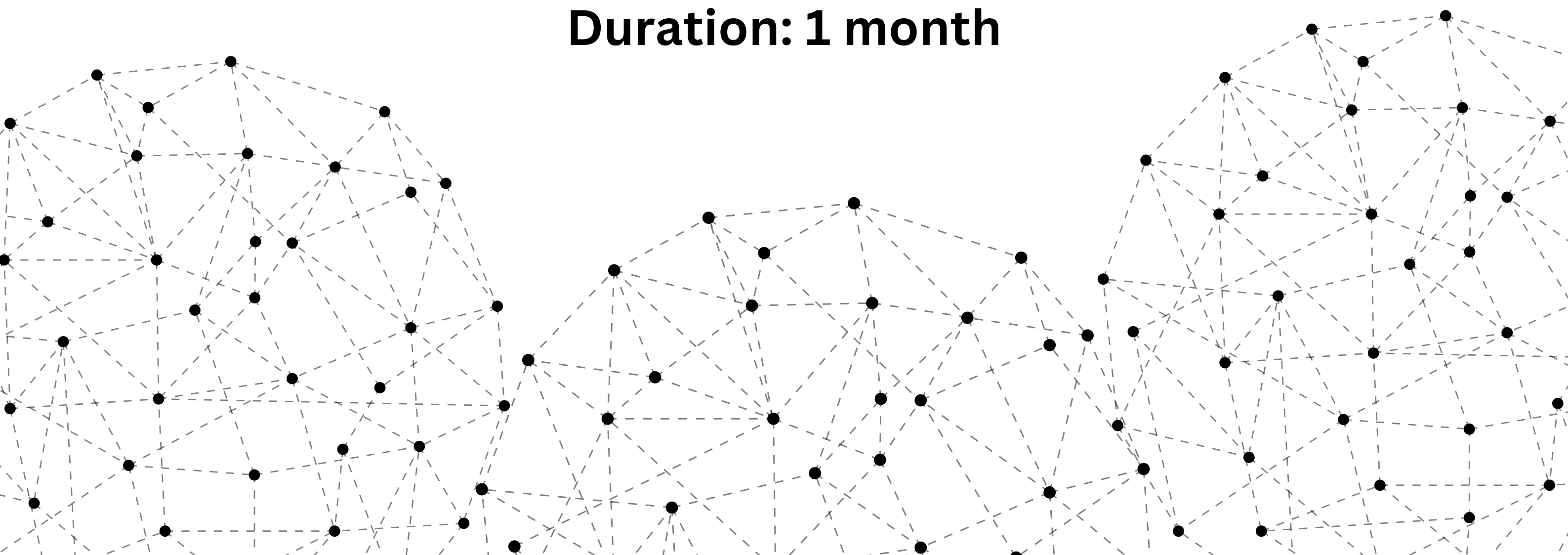


NATIONAL INSTITUTE OF ELECTRONICS AND INFORMATION TECHNOLOGY, PATNA

SUVIKSAN TECHNOLOGIES PRIVATE LIMITED

Syllabus

**Course : AI fundamental for Cybersecurity professional,
Duration: 1 month**



Module 1: Foundations of AI & Generative AI

- o What is Artificial Intelligence (AI)?
 - AI vs. ML vs. Deep Learning vs. Generative AI
- o How Generative AI Works (LLMs, Transformers, Neural Nets)
- o Key AI Use Cases in Industry (Chatbots, Assistants, Predictive Systems)
- o Hands-On Demo: Using ChatGPT, Copilot, Gemini, or Claude for basic tasks
- o Cybersecurity Relevance: Why every security professional should understand AI

Module 2: AI in Cybersecurity Operations

- o AI for Threat Detection & Response
 - AI-based SOC tools, anomaly detection, phishing detection
- o AI for Offensive Security
 - How attackers misuse AI (malware generation, phishing automation, deepfakes)
- o Case Studies:
 - AI in SIEM & SOAR (Splunk, Microsoft Sentinel)
 - AI-driven Cyber Attacks (DeepLocker, WormGPT, phishing bots)
- o Hands-On Demo: Using AI for log analysis & threat intelligence

Module 3: Secure AI Adoption & Collaboration

- o Risks & Challenges of AI Adoption in Cybersecurity
 - Data Privacy, Bias, Prompt Injection, Adversarial ML
- o Secure Rollout of AI in an Organization
 - Policies, Access Control, Guardrails
 - Vendor Risk Assessment
- o Building Cross-Team Collaboration
 - Security + Data Science + Business Teams
- o Group Activity: Role-play “AI Adoption in a SOC team” scenario

Module 4: Future of AI in Cybersecurity

- o Global AI Trends & Regulations (EU AI Act, NIST AI RMF, ISO AI Standards)
- o Future Skills for Cybersecurity Professionals (AI Pentesting, AI Governance)
- o AI + Human Synergy → Augmented Security Teams
- o Industry Readiness: How AI will reshape Cybersecurity Careers
- o Capstone Discussion: “The Next 5 Years of AI in Cybersecurity”
- o Final Assessment: Case Study Presentation (AI adoption in a security team)

(Note: Points mentioned are just short summary, but they consist of a lot of subtopics and detailed structure with practical scenarios)