EC-Council Certified Encryption Specialist (E|CES) + Exam voucher

Varighed: 3 Days **Kursus Kode: ECES** **Leveringsmetode: Virtuel deltagelse**

Beskrivelse:

The EC-Council Certified Encryption Specialist (ECES) program introduces professionals and students to the field of cryptography. The participants will learn the foundations of modern symmetric and key cryptography including the details of algorithms such as Feistel Networks, DES, and AES. Other topics introduced: Overview of other algorithms such as Blowfish, Twofish, and Skipjack Hashing algorithms including MD5, MD6, SHA, Gost, RIPMD 256 and others.Asymmetric cryptography including thorough descriptions of RSA, Elgamal, Elliptic Curve, and DSA.Significant concepts such as diffusion, confusion, and Kerkchoff's principle.

Participants will also be provided a practical application of the following: How to set up a VPNEncrypt a driveHands-on experience with steganographyHands on experience in cryptographic algorithms ranging from classic ciphers like Caesar cipher to modern day algorithms such as AES and RSA.

Virtuel deltagelse

Et V&C Select kursus indholder nøjagtig det samme som et almindeligt kursus. Før kursusstart modtager man kursusmaterialet. Dernæst logger man på kurset via internettet og ser via sin pc den selvsamme præsentation som de øvrige deltagere, man kommunikerer via chat med underviseren og de øvrige deltagere på kurset. Denne uddannelsesmodel er både tids-og omkostningsbesparende og kan være et oplagt alternativ til almindelig klasseundervisning, hvis man f.eks. har et begrænset rejsebudget.

Målgruppe:

Anyone involved in selecting, implementing VPN's or digital certificates should attend this course first. Without understanding the cryptography at some depth, people are limited to following marketing hype. Understanding the actual cryptography allows you to know which one to select. A person successfully completing this course will be able to select the encryption standard that is most beneficial to their organization and understand how to effectively deploy that technology.

This course is excellent for ethical hackers and penetration testing professionals as most penetration testing courses skip cryptanalysis completely. Many penetration testing professionals testing usually don't attempt to crack cryptography. A basic knowledge of cryptanalysis is very beneficial to any penetration testing.

Agenda:

- Introduction and History of Cryptoraphy
- Symmetric Cryptography and Hashes
- Number theory and Asymmetric Cryptography
- Applications of Cryptography part 1
- Applications of Cryptography part 2

Indhold:

Introduction and History of Cryptoraphy

- What is Cryptography?
- History
- Mono-Alphabet Substitution
- Caesar Cipher
- Atbash Cipher
- ROT 13
- Scytale
- Single Substitution Weaknesses
- Multi-Alphabet Substitution
- Cipher Disk
- Vigenère Cipher
- Vigenère Cipher: Example
- Breaking the Vigenère Cipher
- Playfair
- The ADFGVX cipher
- The Enigma Machine
- CrypTool

Symmetric Cryptography and Hashes

- Symmetric Cryptography
- Information Theory
- Information Theory Cryptography Concepts
- Kerckhoffs's Principle
- Substitution
- Transposition
- Substitution and Transposition
- Binary M
- ath
- Binary AND
- Binary OR
- Binary XOR
- Block Cipher vs. Stream Cipher
- Symmetric Block Cipher Algorithms
- Basic Facts of the Feistel Function
- The Feistel Function
- A Simple View of a Single Round
- Unbalanced Feistel Cipher
- DES
- 3DES
- DESx
- Whitening
- AES
- AES General Overview
- AES Specifics
- Blowfish
- Serpent
- Twofish
- Skipjack
- IDEA
- Symmetric Algorithm Methods
- Electronic Codebook (ECB)
- Cipher-Block Chaining (CBC)
- Propagating Cipher-Block Chaining (PCBC)
- Cipher Feedback (CFB)
- Output Feedback (OFB)
- Counter (CTR)
- Initialization Vector (IV)
- Symmetric Stream Ciphers
- Example of Symmetric Stream Ciphers: RC4
- Example of Symmetric Stream Ciphers:

Number theory and Asymmetric Cryptography

- Asymmetric Encryption
- Basic Number Facts
- Prime Numbers
- Co-Prime
- Eulers Totient
- Modulus Operator
- Fibonacci Numbers
- Birthday Problem
- Birthday Theorem
- Birthday Attack
- Random Number Generators
- Classification of Random Number Generators
- Naor-Reingold and Mersenne Twister Pseudorandom Function
- Linear Congruential Generator
- Lehmer Random Number Generator
- Lagged Fibonacci Generator
- Diffie-Hellman
- Rivest Shamir Adleman (RSA)
- RSA – How it Works
- RSA Example
- Menezes–Qu–Vanstone
- Digital Signature Algorithm
- Signing with DSA
- Elliptic Curve
- Elliptic Curve Variations
- Elgamal
- CrypTool

Applications of Cryptography part 1

- Digital Signatures
- What is a Digital Certificate?
- Digital Certificates
- X.509
- X.509 Certificates
- X.509 Certificate Content
- X.509 Certificate File Extensions
- Certificate Authority (CA)
- Registration Authority (RA)
- Public Key Infrastructure (PKI)
- Digital Certificate Terminology
- Server-based Certificate Validation Protocol
- Digital Certificate Management
- Trust Models
- Certificates and Web Servers
- Microsoft Certificate Services
- Windows Certificates: certmgr.msc
- Authentication
- Password Authentication Protocol (PAP)
- Shiva Password Authentication Protocol (S-PAP)
- Challenge-Handshake Authentication Protocol (CHAP)
- Kerberos
- Components of Kerberos System
- Pretty Good Privacy (PGP)
- PGP Certificates
- Wifi Encryption

Applications of Cryptography part 2

- Breaking Ciphers
- Cryptanalysis
- Frequency Analysis
- Kasiski
- Cracking Modern Cryptography
- Cracking Modern Cryptography: Chosen Plaintext Attack
- Linear Cryptanalysis
- Differential Cryptanalysis
- Integral Cryptanalysis
- Cryptanalysis Resources
- Cryptanalysis Success
- Rainbow Tables
- Password Cracking
- Tools

- FISH
- Example of Symmetric Stream Ciphers: PIKE
- Hash
- Hash – Salt
- MD5
- The MD5 Algorithm
- MD6
- Secure Hash Algorithm (SHA)
- Fork 256
- RIPEMD – 160
- GOST
- Tiger
- CryptoBench
- Wired Equivalent Privacy (WEP)
- WPA - Wi-Fi Protected Access
- WPA2
- SSL
- TLS
- Virtual Private Network (VPN)
- Point-to-Point Tunneling Protocol (PPTP)
- PPTP VPN
- Layer 2 Tunneling Protocol VPN
- Internet Protocol Security VPN
- SSL/VPN
- Encrypting Files
- Backing up the EFS key
- Restoring the EFS Key
- Bitlocker
- Bitlocker: Screenshot
- Disk Encryption Software: Truecrypt
- Steganography
- Steganography Terms
- Historical Steganography
- Steganography Details
- Other Forms of Steganography
- Steganography Implementations
- Demonstration
- Steganalysis
- Steganalysis – Raw Quick Pair
- Steganalysis - Chi-Square Analysis
- Steganalysis - Audio Steganalysis
- Steganography Detection Tools
- National Security Agency and Cryptography
- NSA Suite A Encryption Algorithms
- NSA Suite B Encryption Algorithms
- National Security Agency: Type 1 Algorithms
- National Security Agency: Type 2 Algorithms
- National Security Agency: Type 3 Algorithms
- National Security Agency: Type 4 Algorithms
- Unbreakable Encryption

Flere Informationer:

For yderligere informationer eller booking af kursus, kontakt os på tlf.nr.: 44 88 18 00

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