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**ITU Centres of Excellence Network for Arab Region**

**Naif Arab University of Security Sciences (NAUSS)**

**Online Training Course on**

**“Ransomware Analysis: File Encryption and Decryption Mechanism”  
25-26 October 2021**

**TRAINING COURSE OUTLINE**

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**COURSE DESCRIPTION**

Title	Ransomware Analysis: File Encryption and Decryption Mechanism
Objectives	The objective of this course is to explain what is Ransomware as one-malware forms widely used by cyber attackers and cyber criminals as well as learn how to detect, analyze, and protect yourself and your company from Ransomware attacks.
Dates	25- 26 October 2021
Duration	2 Days
Registration deadline	15 October 2021
Training fees	0 USD
Course code	21OI27714ARB-E

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**DESCRIPTION OF THE TRAINING COURSE**

Ransomware is a major technique that is used by cyber attackers. Victims of Ransomware usually paid their money to attackers for decrypt their valuable files encrypted by Ransomware. This training will enable the participants to understand knowledge of types of Ransomware, encryption, and decryption mechanism of Ransomware. This course also provides hands-on practice with a virtual machine for encryption and decryption techniques used by Ransomware.

## LEARNING OUTCOMES

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By the end of this training, participants should be able to have:

- Knowledge of Ransomware definition and objective.
- Knowledge of types and trends of Ransomware.
- Knowledge of encryption and decryption mechanism used by Ransomware.
- Knowledge of Windows file format.
- Skills to conduct of encryption and decryption.
- Skills in compare between Ransom file and common file with hex view tool.
- Skills in using virtual machine.

## TARGET POPULATION

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This training targets security managers, engineers, technical staff, telecom operators, administrators from government organizations, industry companies and academia, as well as individuals who are interested in Ransomware cyber-attacks.

## ENTRY REQUIREMENTS

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There is not mandatory prerequisite course to attend this course, but the following knowledge and skills preferred.

- Have a background of computer science and IT related experience.
- Basic level experience in Linux Operating System.

## TUTORS/INSTRUCTORS

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NAME OF TUTOR(S)/INSTRUCTOR(S)	CONTACT DETAILS
Prof. Kyounggon Kim	<a href="mailto:kkim@nauss.edu.sa">kkim@nauss.edu.sa</a>

## TRAINING COURSE CONTENTS

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This course provides the following topics.

- Ransomware definition: Explain a definition and an objective of Ransomware.
- Ransomware history, types, and trends: Explain the Ransomware types and evolution of their techniques.
- Ransomware operating process: Explain the Ransomware process such as finding valuable file, encryption, and require digital money.
- Encryption and decryption: Explain the encryption and decryption mechanism of Ransomware and provides hands-on encryption and decryption such as AES and RSA used in Ransomware.

## TRAINING SCHEDULE AND CONTENTS / AGENDA (Riyadh Time)

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Day 1. Ransomware introduction		
Date for 1 <sup>st</sup> day	Time; Start time	Exercises and interactions
25/10/2021	09:00-13:00	Ransomware definition, types, and trends analysis

Day 2: Encryption and Decryption		
Date for 2 <sup>nd</sup> day	Time; Start time	Exercises and interactions
26/10/2021	09:00-12:00	Analysis of Ransomware operating process. Exercise AES cipher and RSA cipher algorithms
	12:00-13:00	Final Exam

## METHODOLOGY (Didactic approach)

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This course provides Instructor-led presentations and provides hands-on practices. Some hands-on practices will provide pre-recorded files.

## EVALUATION AND GRADING

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- Evaluation for this course is conducted by final overall exam (100%): Participants should attend final exam at the end of this course. A passing mark of 70% is required to get the course completion.

## TRAINING COORDINATION

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<b>Training Coordinator:</b> <b>Dr. Abdulrazaq Al-Morjan</b> Director of Centre of Excellence in Cyber Crimes and Digital Forensics NAUSS Mobile: +966 54 470 05 53 E-mail: <a href="mailto:t-aalmargan@nauss.edu.sa">t-aalmargan@nauss.edu.sa</a>	<b>ITU Coordinator:</b> <b>Eng. Mustafa Al Mahdi</b> Programme Officer ITU Arab Regional Office Tel: +202 3537 1777 Mobile: +20114 1177573 Fax: +202 3537 1888 E-mail: <a href="mailto:mustafa.almahdi@itu.int">mustafa.almahdi@itu.int</a>
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## REGISTRATION

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### ITU Academy portal account

Registration and payment should be made online at the ITU Academy portal.

To be able to register for the course you **MUST** first create an account in the ITU Academy portal at the following address:

<https://academy.itu.int/user/register>

### Training course registration

When you have an existing account or created a new account, you can register for the course online at the following link: <https://academy.itu.int/training-courses/full-catalogue/ransomware-analysis-file-encryption-and-decryption-mechanism-0>

You can also register by finding your desired course in our training catalogue <https://academy.itu.int/training-courses/full-catalogue>