COURSE DETAILS

Course Code: F21FO
Full Course Title: Digital Forensics
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL

Undergraduate: No  Postgraduate Taught: Yes  Postgraduate Research: No

Additional Information:

COURSE AIMS

• Impart a deep understanding of common attack scenarios to students.
• Improve students' critical analysis skills in computer security and allow them to identify incidents artefacts in a systematic way.
• Provide the student with in-depth understanding of digital forensics concepts and methodologies.
• Give practical experience of finding clues and discovering attack scenarios in common operating systems and applications.

LEARNING OUTCOMES – SUBJECT MASTERY

At the end of this course, the students will be able to:

• Understand the technical and legal aspects of the digital forensics process.
• Identify and explain the role of different types of digital artefacts.

At the end of this course, the students will be able to:

• Critically review the security of Windows and Linux systems.
• Identify suspicious activities and combine them into attack scenarios.
• Assess the security of an IT infrastructure.

LEARNING OUTCOMES – PERSONAL ABILITIES

At the end of this course, the students will:

• Develop a set of ethical and legal best practices needed for a digital forensics career.
• Be able to critically appraise the security of an IT infrastructure.

At the end of this course, the students will be able to:
• Show initiative, creativity and team working skills in shared digital forensics investigation environments.

At the end of this course, the students will be able to:

• Build on initial skills and knowledge by independent research using online resources.

SYLLABUS

• Legal aspects: investigation limitations (territorial and jurisdictional), inchoate offences.
• Search and seizure: consent, warrant, evidence seizure.
• Analysis: things to consider, analysis Process, evidence guidelines, order of evidence importance.
• Forensic toolkits: hardware features, software features, common software tools.
• Windows OS artefacts: event log, registry, prefetch, volume shadow copies, shell bags, jumplists, boot, services.
• Linux OS artefacts: "etc" folder, logs, home folder, nautilus, accounts and login history, grub, services.
• Malware persistence mechanisms: auto-startup, cron jobs.
• Malware analysis.
• Reverse Engineering.
• Storage Media: types overview, file Systems overview.
• Common applications' artefacts: web browsers, chat clients, servers (Apache, mysql), cross-platform applications.

COURSE RELATIONSHIPS

N/A

LOCATION AND ASSESSMENT METHODS

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