POLITIHØGSKOLEN

CURRICULUM

POSTGRADUATE EDUCATION FOR NORDIC COMPUTER FORENSIC INVESTIGATORS

Module 3D: Macintosh Forensics, Basic

7,5 ECTS

Approved by the Police University College Board
5th of December 2018

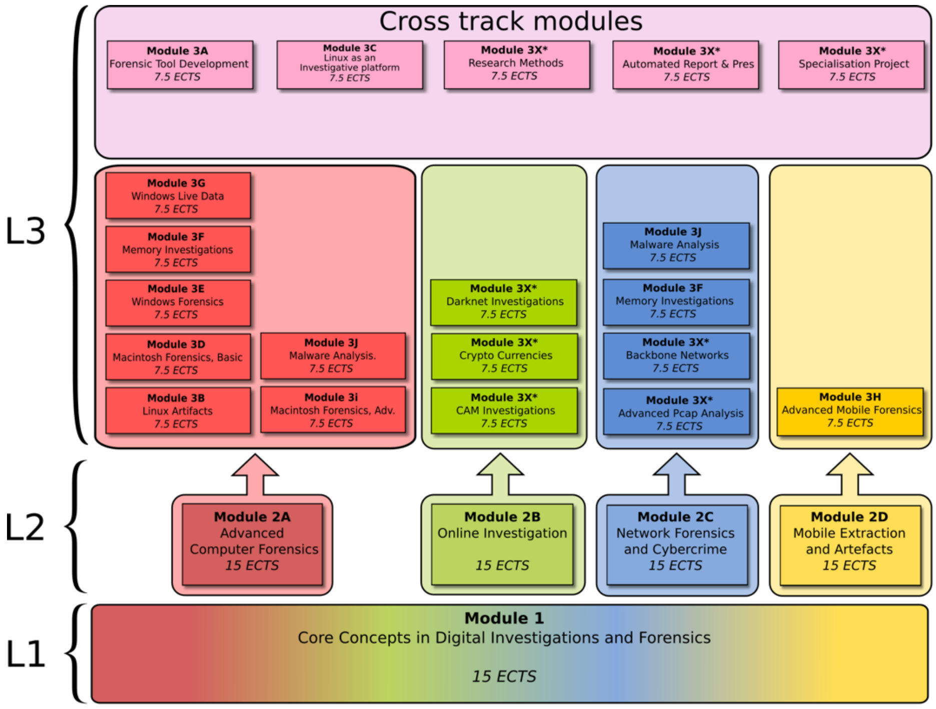
1. Introduction

Law enforcement’s need for digital forensics is constantly increasing. Traditionally digital forensics was utilised in only a small number of investigations, however, with the advent of the web and smart devices there is the potential for digital evidence in all cases.

The need for special investigative competence in Apple-based units has increased considerably the last years, and reports from computer investigators indicate that such units make up an ever-increasing proportion of seizures. These are units with particular features and technology requiring special competence to handle.

This course provides the students with the basic skills needed to document and develop a forensically sound tool utilising current best practice.

This module is part of the NCFI programme which consists of the following:



*) Under development

2. Aim

The aim of this program is to ensure that the quality of computer forensic investigation is of a high level, guaranteeing legal protection and the right to privacy.

3. Target group and admission criteria

3.1 Target group

The primary target group is police staff in the Nordic countries whose main task is handling and investigating digital evidence. It is a prerequisite that participants are selected in accordance with local competency plans.

Employees in other International police services or governmental agencies who work, or will work, with digital evidence are also eligible to apply.

3.2 Admission criteria

Applicants for module 3D must:

- possess higher Education Entrance Qualification
- be employed by a national or local governmental agency
- have passed NCFI Module 2A Advanced Computer Forensics. The former NCFI Module 2 (25 ECTS) is also accepted
- have at least one year's experience in digital forensics or cybercrime investigation.

Foreign applicants are only entitled to apply if:

- the applicant's country has a partnership with PHS
- they have been selected in accordance with the partner's competency plans

Applicants who do not have the higher education entrance qualification have to provide:

- a minimum of 5 years work experience, of which maximum 2 years can be education, replace the requirements for Higher Education Entrance Qualification. This arrangement only applies to applicants over the age of 25

The prerequisite of having completed NCFI modules may be overridden if the applicant can:

- either provide documentation for having completed equivalent education
- or demonstrate qualifying skills and knowledge necessary to follow the module

To be considered as equivalent education or qualifying experience, the following topic must be documented:

- computer forensic methodology

and in addition document education or experience in at least one of the following topics:

- network forensics
- cybercrime
- mobile forensics

The total workload of the education should be equivalent to approximately 30 ECTS. For they who are applying on the basis of their experience, a relevant test will be provided in order to demonstrate necessary skills and knowledge.

4. Learning outcome

4.1 General competence

After completion of the module candidates will:

- perform professional tasks in the role of digital forensic investigator with increased insight and confidence
- see the role of digital forensics in a broader perspective during an investigation
- identify ethical and legal issues during investigation

4.2. Knowledge

After completion of the module candidates will have knowledge about:

- outlining the benefits in using macOS as a forensic platform in the investigation
- identifying and recognising the architecture of macOS and iOS
- identifying various data structures specific to macOS and iOS
- identifying the mechanisms used to protect user data
- outlining and order the various methods to perform live data collection

4.3. Skills

After completion of the module candidates will be able to:

- use macOS as a forensic platform in the digital investigation to solve investigational tasks
- practice the use of command line interface and demonstrating skills in combining different techniques to solve forensic problems
- demonstrate the ability to interpret Apple file systems
- demonstrate the ability to interpret various macOS/iOS and Unix artefacts
- analyse and demonstrate the ability to identify and handle correctly data and hardware which are locked
- demonstrate the ability to perform live data collection of data according to important principles and best practice

5. Organization and Study Requirements

This module is delivered on-line as a part-time education, and the students are expected to complete the program within one semester. The approximate duration of the module is 210 hours of study.

The module comprises lectures, individual and group work, exercises, quizzes, assignments and literature study. Student support will be delivered via electronic means such as: email, discussion fora, chat and virtual classrooms. Certain mandatory live online lectures, no more than 4 days, will be conducted during the course.

The working methods of the study should help to provide students with good learning outcomes, and the emphasis is on flexible and diverse forms of work with a high degree of student activity. The program is organized around key issues and challenges in the investigation of electronic traces, which is illuminated with relevant theory.

An e-learning platform is used for the administration and implementation of the module.

Study requirements

The following requirements have to be approved before students may sit the exam:

- two individual assignments

- two graded quizzes
- attendance at mandatory online lectures

6. Assessment

The module is concluded with a two day take-home practical exam.

Students will be graded on a scale from A – F. A – E are passing grades and F is a failing grade.

7. Literature (450 pages)

7.1. Mandatory literature

The students will include an individual literature research on macOS and iOS Forensics, and the selected literature will be examinable.

In addition to the mandatory literature research, students need to read and use a number of specific web resources, lessons and academic research papers. These will also form part of the mandatory reading requirements and thus be examinable. Due to the rapid changes in the fields of digital forensics and cybercrime investigation, these need to be provided to students during the course of the study, to ensure they are up to date and based on current trends.

The mandatory reading shall not exceed 450 pages.

7.2. Assumed knowledge

Literature from NCFI Module 1 Core Concepts in Digital Investigation and NCFI Module 2A Advanced Computer Forensics (or similar educations).