



Master of Advanced Studies in

Digital Forensics & Cyber Investigation

The digital transformation of society is creating new challenges and new opportunities, both for criminals and for criminal investigators. Today forensic and cyber investigators must collect and analyze digital evidence from a diverse landscape of technically complex sources. Our unique Master program gives you a wide range of practical skills needed for an exciting career in digital forensics and cyber investigation.

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1 Why DFCI?

The digital transformation of society is affecting crime, criminals and criminal investigation. New cyber crime methods using advanced technical tools and exploitation are an opportunity for criminals and a challenge for investigators. Technically complex illegal activities are being sold as services to less skilled criminals (Crime-as-a-Service), increasing the challenge of fighting cybercrime. On the other hand, criminals face challenges trying to hide and avoid attribution. The large amount of digital traces stored across multiple locations creates an opportunity for criminal investigators.

Crime scenes are also changing. With the growth of cybercrime, crime scenes are becoming virtual, global, and multi-jurisdictional. Investigating a trans-national cyber crime scene requires investigative tools to remotely gather information, and also collaboration between entities in both the public and private sectors. Modern physical crime scenes have a comprehensive set of digital evidence sources. In addition to PCs and notebooks, digital evidence traces can be found in mobiles, IoT devices, automobiles, smart control systems, data stored with cloud providers, and distributed on servers across the Internet.

With the increase in digital and online payment systems, and also crypto currencies, financial transactions are also becoming an important digital evidence source, especially in financially motivated crimes like fraud or crimes involving payments for illegal products and services.

These shifts are fundamentally changing the way police, government, and industry investigators are operating, and creating a demand for new skills not offered by traditional education. The degree programs in Digital Forensics & Cyber Investigation (DFCI) at BFH were created to address this education requirement and to help fill the demand for skilled digital forensic and cyber investigators.

BFH is in a unique position to provide high quality education in digital forensics and cyber investigation. We are a technically focused Swiss Applied Sciences University. Our Engineering and Computer Science department (BFH-TI) specializes in areas of IT/Cyber security, cyber fraud, hardware/electronics security, medical device technology, industrial engineering, and automotive technology. This Master program leverages existing expertise at BFH to create a digital forensics and cyber investigation MAS with a format and modules not found at other universities.

We want to improve the safety and security of society. This can be achieved by educating the next generation of digital forensics and cyber investigators, and giving them the knowledge and skills needed

to effectively fight crime. I warmly invite you to attend our programs in Digital Forensics & Cyber Investigation (DFCI), and wish you much success in your studies!

Kind Regards

Prof. Dr. Bruce Nikkel, Head of Degree Program



2 Who Should Apply?

The Master of Advanced Studies in Digital Forensics & Cyber Investigation (MAS DFCI) is designed for two groups of professionals:

- Experienced forensic investigators who want to increase their technical skills in digital forensics and cyber investigations
- Experienced engineers and technicians who want to transition into the field of digital forensics and cyber investigations.

3 Learning Objectives

Graduates will understand the fundamental concepts of modern digital forensics and cyber investigations. They will have the skills to collect and analyze digital evidence from a variety of sources, and have the ability to investigate complex cyber incidents.

4 Career Opportunities

The MAS DFCI prepares students for jobs in law enforcement, military, government CERTs, cyber-fraud investigation teams in the finance industry, cyber claims investigators in the insurance industry, security and incident response teams in large firms, consulting and security service providers, and specialized digital forensic and investigation firms.

5 Requirements

Admission into the MAS DFCI requires at least one of the following qualifications:

- a bachelor's degree or equivalent professional education degree in computer science, computer engineering, or related field
- professional experience in digital forensics or IT investigation together with a related industry certification
- If applicant qualifications are unclear or inconclusive, further information or an interview may be requested.

6 Course Format

The MAS DFCI is designed for remote and international students pursuing a master's Degree part-time. The program has 4 taught semesters (4 CAS modules) and a final master's thesis semester. Each semester (CAS) has four modules taught in English by experienced industry professionals. The modules are one full week of theory and practice with lab work, giving students a «hands-on» learning experience. Classes are taught in a combination of online and onsite formats in the Canton of Bern, Switzerland.

The Master of Advanced Studies (MAS) degree is 60 ECTS, and a 12 ECTS Certificate of Advanced Studies (CAS) is awarded after each semester.

7 Semester and Module Content

7.1 Required Modules

DFCI Fundamentals–CAS/Semester 1 (12 ECTS)

- Digital Forensic Fundamentals – standards, processes, cyber laws
- Cybercrime Overview – crimes, criminals, and victims
- Cyber Investigation Fundamentals – basic investigations and intelligence
- Digital Forensic Acquisition – forensic imaging of storage media

DFCI Advanced–CAS/Semester 2 (12 ECTS)

- File System Forensics – storage and filesystem analysis
- Operating System Forensics – Windows, Mac, Linux artifacts
- Memory Forensics – acquisition and analysis
- Application and Media Forensics – artifacts and file metadata

7.2 Module Options for Semester 3+4 (24 ECTS)

Students may choose from a pool of available SAS modules, totalling 24 ECTS. Included in this pool are SAS modules from:

- DFCI-Portfolio SAS modules (taken from the former DFCI CAS Specialist 1 & 2)
- [CAS Cyber Threat Intelligence Analyst \(CTI\)](#)
- [CAS Linux Cyber Security \(LCS\)](#)
- [CAS Security Incident Prevention and Detection \(SIPD\)](#)
- [CAS Security Incident Analysis and Reaction \(SIAR\)](#)

Note: Pool/portfolio Modules are run subject to student demand, and may be postponed if demand is too low.

7.3 Master's Thesis – MAS/Semester 5 (12 ECTS)

The research and write-up of the Thesis requires one full semester of work. This includes:

- choosing a thesis topic
- writing a thesis proposal
- finding a Thesis expert (advisor)
- conducting the research project work
- writing up the dissertation
- the Thesis defense

The master's thesis is typically started after completion of the first four taught semesters (48 ECTS or 16 modules total). The expected workload for completing the master thesis is a minimum of 360 hours. Depending on the external examiner/expert, the dissertation and thesis defense may be written in German or French. During the final thesis semester, students may also attend elective modules that were unavailable during semesters 3 and 4.

8 Costs

The program costs can be found on our website (in German):

<https://www.bfh.ch/ti/de/weiterbildung/ueber-die-weiterbildung/durchfuehrungsdaten-und-preise/>

9 Registration

Students may start the DFCI DAS in any semester, with registration required one month in advance. Semesters typically start in Week 17 (end of April) and Week 43 (end of October) according to [the schedule](#).

Modules previously taken at BFH or other Applied Sciences Universities can be evaluated for possible credit transfer to the DFCI DAS.

10 Organisation

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During the CAS programme, adjustments may be made to the content, learning objectives, lecturers and competence assessments. Lecturers and programme directors are authorised to make adjustments to the CAS programme based on current developments in a subject area, the specific prior knowledge and interests of participants, and for didactic and organisational reasons.

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