



Naif Arab University for Security Sciences  
Arab Journal of Forensic Sciences and Forensic Medicine

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المجتمعة العربية للعلوم الجنائية والطب الشرعي  
Arab Society for forensic Sciences and forensic Medicine

## The College of Forensic Sciences at NAUSS: The pioneer of Forensics in the Arab world

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Naif Arab University for Security Sciences (NAUSS) has been providing training and conducting academic research in forensic sciences since its establishment. This is part of its belief in the importance of forensic science in crime investigation, and the importance of providing forensic scientists and experts with the latest knowledge and skills.

The Department of Forensic Science Laboratories at the University served Arab security sectors for almost a quarter of a century until, by the official decree of the Council of Arab Interior Ministers, it became the College of Forensic Sciences (CFS) in 2004. This was a natural progression of the work of the University in forensic science teaching, research, and training – and the new college was built upon this firmly grounded and lengthy experience. The College was supplied with the

latest forensic laboratory equipment to facilitate teaching and research to the highest levels; and academic staff and research teams of the highest caliber were chosen to lead and conduct its activities. Now, with more than a decade of experience in teaching and research as an independent college, it is at the forefront of forensic teaching and research in the Middle East.

The College has played a fundamental role in stressing the importance of providing Arab female security personnel with the opportunity to study and train in forensics due to their essential role in fighting and preventing crime. Female students are among those undertaking diplomas and master's degrees in the College in a study environment that serves their needs and gives them the peace of mind to excel in their academic pursuits.

The College of Forensic Sciences offers two master's degree programs specializing in forensic toxicology and forensic DNA analysis. In addition to these programs, the College provides training courses in different areas of forensic science along with a forensic science diploma in different specializations. This wide choice of courses serves to develop forensic experts involved in crime investigation at every level, both practical and academic.

The College aims to provide graduates with a strong theoretical and practical foundation in the application

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doi: 10.12816/0005642



Production and hosting by NAUSS

of recent and advanced technologies for the analysis and evaluation of various types of evidence materials. It aims to produce high quality forensic scientists able to properly collect, preserve, analyze and interpret laboratory results and provide expert testimony in a court of law. Another important objective is to develop critical research skills among students to meet new challenges in crime investigation. The College has well equipped laboratories and enjoys the use of the most up to date forensic and educational technologies in teaching and research.

As well as providing the above courses, the College is involved in the latest forensic research and regularly organizes and participates in forensic science conferences, symposiums, and workshops. It also publishes important forensic research at the University and provides vital forensic consultation services to official bodies involved in crime investigation.

The College has strong links with other universities and centers around the world and strives to cooperate in exchanging knowledge and information. Due to the success of the College in teaching and research, and because of its regional prominence, it has played a fundamental role in the formation of the Arab Society for Forensic Sciences and Forensic Medicine (ASF SFM) and in the launching of this journal – the Arab Journal of Forensic Sciences and Forensic Medicine (AJF SFM). This is a testimony to the successful ongoing development of the College and a testimony to its respected status in the Arab world and internationally.

The College has successful and productive relations with regional and international universities, colleges, and institutions specialized in forensic science work and investigation. These relations help strengthen the College and enable the effective exchange of ideas and experience. It is the success of these relations that has enabled the College to prosper and establish its regional status. The creation of the ASF SFM, and the AJF SFM is a natural progression of these successful relations that contribute towards the betterment of teaching and research in forensic science.

International relations outside the Middle East with whom the College has established good academic and professional relations include the following:

- Center for Forensic Science, University of Strathclyde,

UK

- John Jay College of Criminal Justice, The City University of New York, USA
- Ministry of Justice Investigation Bureau (MJIB), Taiwan
- Police Academy of the Czech Republic, Prague, Czechoslovakia
- The United Nations Office on Drugs and Crime (UNODC), Vienna, Austria
- University of Lyon, France
- University of Lille Nord de France, France

### Vision

To be a world leading and inspiring educational institution for providing a high standard of education and professional training in various disciplines of forensic science.

### Mission

The College of Forensic Sciences recognizes the importance of forensic science education and research in crime investigation and, therefore, it seeks to produce highly skilled forensic scientists and professionals, who can compete in a diverse world and apply their knowledge and expertise to improve the quality of law and justice. The CFS strives to provide high standard training and academic programs to keep up-to-date with scientific and technical developments, taking into account the needs of Arab forensic science laboratory personnel. The College seeks to be a vibrant and challenging academic institution that opens the minds and hearts of our students. We are committed to providing a high quality educational experience and professional training to students in a diverse learning environment, thereby promoting the values of justice and their responsibility towards the community.

### Aims

- Developing and establishing the College as a regional and international center for forensic science education, research, and training.
- Providing a high standard of education and training in various disciplines of forensic science, both at basic and advanced levels.
- Improving the administrative and technical capabilities of forensic scientists in the Arab world.



- Encouraging, supporting, and carrying out scientific research in forensic sciences and criminal investigation in order to improve the quality of forensic science practice and research in the Arab world.
- Encouraging the exchange of knowledge and expertise by strengthening relationships between NAUSS and forensic scientists, universities, scientific bodies, and research centers both regionally and internationally.
- Helping the Arab world to maintain the highest academic, technical, and practical standards in forensic investigation through quality control and performance testing.

### Academic Departments

There are four departments within the College of Forensic Sciences: the Department of Forensic Chemistry (DFC), the Department of Forensic Biology (DFB), the Department of Physical Evidence (DPE) and the Department of Crime Scene Investigation (DCSI). Each department has competent faculty and well-equipped laboratories to meet and maintain the required academic standards of teaching, research and professional training. Departments also provide expert consultation and evaluation of forensic case work.

#### Department of Forensic Chemistry (DFC)

This department is involved in teaching and research into the analysis of both synthetic and natural physical trace evidences using the latest analytical instruments and technology; it also concentrates on developing new techniques for the analysis and forensic evaluation of various types of evidence materials.

The Department is involved in teaching and research in many areas of forensic chemistry including the following:

- Drugs of abuse and other substances
- Poisons and other toxic substances
- Clinical Toxicology
- Fire Accelerants and Propellants
- Explosives and Ballistics
- Soil and Glass
- Paints, Inks, and Dyes
- Advanced Instrumental Analysis
- Alcohol
- Methods of Separation and Extraction of Drugs and Toxins

#### Department of Forensic Biology (DFB)

The Department of Forensic Biology (DFB) is one of the most important academic organs of the College of Forensic Sciences and is actively engaged in providing high standard education and professional training through its Diploma and M.Sc programs in Forensic DNA Analysis. This department is involved in teaching and research in the analysis and evaluation of trace evidence of a biological nature including biological fluids, bones, tissues, hair and fiber. The DFB has the latest DNA technology to establish the identity of both victims and criminals as well as investigate cases of disputed paternity and missing persons.

The DFB is involved in teaching, analysis and research in all areas of forensic biology that include the following:

- Identification of biological fluids (blood, saliva, semen, sweat, urine, etc.)
- Microscopic examination and analysis of trace evidence (hair, fiber, soil and plant materials)
- Forensic Entomology
- Biochemical and immunological polymorphic markers of human identity
- Extraction, quantitation and genotyping of human autosomal and Y-chromosome short tandem repeat (STR) loci from all types of biological evidence materials
- Forensic Analysis and Evaluation of Touch DNA (Trace DNA)
- Cases of disputed paternity
- Population genetics and DNA Data Base
- Y- Chromosome ancestral studies
- Scanning Electron Microscopy (SEM) of biological evidence materials
- Research and development – Forensic DNA Technology and its applications in clinical diagnosis of genetic diseases

#### Department of Physical Evidence (DPE)

This department is involved in teaching and research into Dactyloscopy and, in particular, the processes involved in the collection, analysis, and archiving of prints and impressions using the latest technologies. This department also conducts teaching and research into the correct methods of preserving trace evidence, and areas of forensics including the examination of documents and how to reveal



the crimes of counterfeiting and forgery. It also looks at the analysis of handwriting, signatures, printing analysis, writing implements, and indented and unclear written texts within the scope of criminal investigation.

Subjects taught and researched include the following:

- Automated Fingerprint Identification System (AFIS)
- Laser detection of print and impression evidence
- Document Examination
- Counterfeiting and Forgery
- Forensic Handwriting and Signature Analysis
- Digital Forensics
- Credit card and other Cyber crimes
- Personal Identification using Iris and Facial Characteristics
- Firearms and Tool Marks
- Comparison Microscopy for fire arms and impression analysis

### Department of Crime Scene Investigation (DCSI)

This department conducts teaching, training, and research into the procedures used to lift trace evidences from crime scenes and how to preserve them in order to maintain their integrity and credibility in a court of law. It also examines how to document crime scenes both in writing and by using traditional and digital photography. It also concentrates on the preparation of crime scene reports that form part of criminal investigations.

Subjects taught and researched at this department include the following:

- Crime Scene Preservation
- Crime Scene Documentation
- Crime Scene Photography
- Mechanisms and Tools of Crime Scene Investigation
- Crime Scene Inspection and Searching Techniques
- Collection Methods of print and impression evidence (Fingerprints, Tires, Footwear and Tools)
- Methods of Documentation, Lifting and Preservation of physical evidence items at the crime scene
- Use of Alternate Light Sources (ALS)
- Report Writing in Crime Scene Investigation
- Crime Scene Reconstruction

### Academic Programs

The College of Forensic Sciences offers two Master's

degree programs as well as a Diploma and short-term Certificate Training Courses in different fields of forensic sciences.

### Master's Degree Programs

The College offers two master's degree programs: A Master's Degree in Forensic Toxicology and a Master's Degree in Forensic DNA Analysis. The Master's Degree in Forensic Toxicology is taught in the Department of Forensic Chemistry (DFC) and the Master's Degree in Forensic DNA Analysis is taught in the Department of Forensic Biology (DFB).

The main objective of these programs is to provide graduates with a strong theoretical and practical foundation in the application of recent and advanced technologies for the analysis and evaluation of various types of evidence materials. It aims to produce high quality academics working as forensic scientists, able to properly collect, preserve, analyze, and interpret laboratory results and provide expert testimony in a court of law. Another important objective is to develop applied research skills to successfully face new and existing challenges in crime investigation.

The Master degree program in Forensic Toxicology or Forensic DNA Analysis involves a study period of three years (six semesters). A student has to complete 38 credit hours of taught courses during the first two years or four semesters, and 10 credit hours of a Master thesis project in his/her 3<sup>rd</sup> year, or two semesters. The entire academic curriculum consists of 48 Credit Hours and is distributed over the 6 semesters (three years) as follows:

- Common courses within the University: 9 Credit hours
- Common courses within the College of Forensic Sciences: 10 Credit hours
- Forensic Toxicology or Forensic DNA Analysis Courses: 29 Credit hours
- Thesis: 10 Credit hours

The CFS has well equipped state of the art research laboratories where Diploma and Master's degree students learn basic and advanced forensic investigation techniques and conduct their thesis research projects. In order to expand academic and professional relations with other educational and research institutions, students are also encouraged to conduct their research work in collaboration with other universities, teaching hospitals and research



centers involved in forensic science research.

### Diploma Program in Forensic Sciences

This diploma is designed for graduate personnel working in forensic laboratories, or similar fields. It develops their skills and experience and enables them to assume more responsible and effective roles in the forensic investigation of crime. The Diploma program provides them with the necessary technical, experimental, and academic knowledge to carry out their responsibilities according to the latest academic standards and developments.

This Diploma program is offered in several fields of forensic science and involves a study period of one academic year (two semesters). A student has to complete 28 credit hours of taught courses during these two semesters along with submission of a graduation research project report (2 credit hours). A Diploma is awarded after the successful completion of 30 credit hours, with an overall standing of not less than 70%.

The College offers this diploma in the following forensic specializations:

- Analysis of toxins and drugs of abuse
- Laboratory analysis of explosives and Arson cases
- Laboratory analysis of inks, dyes and paints
- Forensic Serology
- Analysis of hair, fiber, and tissues
- Forensic DNA analysis
- Crime Scene Documentation
- Forensic Photography
- Techniques of Personal Identification
- Examination of documents and currencies
- Firearms and Tool Marks
- Computer Forensics and Cyber Crime

### Certificate (Short-Term) Training Courses:

In addition to the Masters and Diploma programs, the

CFS also offers short-term training courses of 1-4 weeks duration in almost every discipline of forensic science. Thousands of forensic scientists and technologists from the Arab world have attended and benefited from these courses. These courses are conducted throughout the year, mostly on the main college campus. However, depending upon the nature of the course and availability of expertise, these training courses are sometimes organized at other locations in the Arab world or any other non-Arab country. The curricula of these short-term courses are designed very carefully, reflecting the current needs of Arab forensic scientists and experts working in this field. In addition to the CFS faculty and experts, international experts are also invited to lecture on various topics during these courses.

### Future Goals

Academic programs offered by the College of Forensic Sciences have attracted hundreds of male and female students from all over the Arab world to advance their knowledge and skills in the field of forensic science. The College has become a model institution for studying and training in forensic science, both for beginners as well as highly trained professionals.

In order to pursue its vision and mission, and achieve its objectives, the College of Forensic Sciences is utilizing all of its available resources to fulfill its commitments towards society and justice. Accordingly, the CFS plans to start PhD programs in Forensic Chemistry and Forensic Biology in the near future to keep up with the growing challenges in crime investigation, prosecution, prevention and control. With the cooperation of the Arab Society for Forensic Sciences & Forensic Medicine (ASFSSFM) and other international forensic science organizations, the CFS will continue to play a leading role in improving the quality of forensic science practice, education and research in the Arab world.

