COURSE DATA

DATA SUBJECT

Code: 35077
Name: Scientific Police
Cycle: Undergraduate Studies
ECTS Credits: 7.5
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1302 - Degree in Criminology	Facultat de Dret	3	First quarter
1923 - Double Degree Programme Law-Criminology	Facultat de Dret	4	First quarter, Annual

SUBJECT-MATTER

Degree	Subject-matter	Character
1302 - Degree in Criminology	Forensic techniques	COMPULSORY
1923 - Double Degree Programme Law-Criminology	Year 4 compulsory subjects	COMPULSORY

COORDINATION

BOTIAS PEREZ JUAN ANTONIO

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SUMMARY

Descriptive summary of the subject

Forensic Science is part of the subject Scientific Techniques, included in the degree course with a total of 31.5 Cr. encompassing the Criminalistic Techniques, the Scientific Police with techniques of Criminal Analysis; Transmissions, image and sound.

Within the set of studies that make up the degree of Graduate in Criminology and Criminalistics, the degree of Graduate in Criminology and Criminology.

Forensic Science brings to the investigation of crime objective elements about the participants and "modus

operandi', by studying and analysing, by means of techniques of increasing implementation and the elements of action and participation in the criminal phenomenon.

This subject provides an approximation to the knowledge of the techniques used by the Police Forensic laboratories in Spain, which shine at a world-renowned level for their focus on excellence and which, in other states, are attributed to different bodies, either dependent on ministerial departments related to the under the ministerial departments related to Justice, or to those related to science and technology, but that in all of them it is the aim to take advantage of technological resources that provide objective elements to the judiciary,

The knowledge of these techniques will provide the criminologist with the sufficient knowledge to interpret the partial reports of the different combined techniques, that take advantage of technological developments, for the organisation of services and the scientific investigation of crimes with a scientific method, as they are confronted with forms of action that evolve with the times, social changes, geographical diversity and global influence.

Forensic science is more than a mere association of disparate techniques, it applies its own methods and criteria, specific procedures and doctrines, which are developed in laboratories and which are surrounded by quality controls in accordance with the procedure manual, which is refined and perfected with data obtained from the experience of many years of experience, with objectivity and constant adaptation to the historical moment, as an efficient response to the quantitative increase and qualitative diversity of crime, its progress, evolution, adaptations and transformations, at the same time as the Administration of Justice calls for more convincing means of proof, which can only be achieved with an accurate and rigorous police investigation, imposing a constant improvement of technology and specialisation, applying all the necessary scientific knowledge and any of the advances that contribute to it.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

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Saber aplicar las técnicas de investigación adecuadas para la persecución de delitos y la resolución de conflictos sociales, garantizando la seguridad ciudadana y los derechos fundamentales.

Saber asesorar en la interpretación y valoración de los informes forenses.

Saber utilizar las Tecnologías de la Información y Comunicación en el manejo de datos.

Saber utilizar un lenguaje técnico que permita expresar los conceptos correctamente y desde una

perspectiva de género.

Ser capaz de analizar el delito, el delincuente y la víctima, y diseñar estrategias de prevención e intervención, desde el respeto a los derechos humanos, la igualdad entre hombres y mujeres, la paz, sostenibilidad, accesibilidad universal y diseño para todos y valores democráticos.

Tener iniciativa creativa, promoviendo el análisis crítico y espíritu de liderazgo con capacidad de gestión y dirección.

DESCRIPTION OF CONTENTS

Unit 1 FORENSIC POLICE: Concepts and History

Criminalistics, police techniques, and forensic police. Basic principles of criminalistics. Historical background and the origins of the Forensic Police in Spain. Purpose of forensic police. Structure, functions, and areas of activity of the General Commissariat of Forensic Police.

Unit 2 TECHNICAL PHOTOGRAPHY AND IMAGE PROCESSING: Introduction

The camera as an auxiliary tool in criminalistics. Camera components. Image capture, management, processing, and archiving. Basic concepts. Chemical photography and digital photography. Light: sources, direction, and intensity. Police and identification photography. Photography in Technical Police Scene Inspection. Photo editing software: introduction to Photoshop.

Unit 3 TECHNICAL POLICE SCENE INSPECTION (I)

Scene inspection in the Criminal Procedure Law (LECr). Concept and objectives. Clues, traces, and evidence. Phases of scene inspection. General methodology and specialties. Step-by-step scene inspection. Human team and material resources. Search, discovery, and collection of biological traces, fingerprint evidence, ballistic elements, stains, footprints, tool marks, and samples for chemical analysis.

Unit 4 TECHNICAL POLICE SCENE INSPECTION (II)

Fingerprint development: physical developers and chemical reagents, application techniques. Lighting and use of forensic lights. Scene inspection report. Chain of custody.

Unit 5 PERSONAL IDENTIFICATION

Identity and identification. Regulations on personal identity, ID card, and passport. Evolution and development of personal identification. Identification systems: fingerprinting, biometrics, and DNA. Fingerprinting in Spain and its pioneers, from Federico Olóriz Aguilera to Francisco Antón Barberá.

Unit 6 FINGERPRINTING (1): PAPILLARY RIDGES

Biological configuration of papillary ridges. Natural, artificial, and latent fingerprint patterns. Ridges and papillary patterns as the basis for personal identification. Types of fingerprinting: dactyloscopy, palmistry, and plantar prints. The DELTA: characteristics, morphology, classification, and delta point. The CORE: definition, varieties, and central point. Ridge systems in the fingerprint. Characteristic points: definition, morphology, and common varieties. Palm prints, writer's posture, and palmar regions. Automated fingerprint identification system: SAID.

Unit 7 FINGERPRINTING (2): FINGERPRINT IDENTIFICATION

Spanish fingerprint system. Classification of fingerprints. Ambiguities. Fingerprint formula: elements and purpose. Subformula: elements and varieties. Determination of hand and finger. Introduction to fingerprint identification.

Unit 8 DETAINEE RECORDING

Biographic and biometric records. Fingerprint recording: ink and Livescan. Ink printing: materials and methods (practical exercises). Detainee identification protocol and custody chain. Comparison sheets and identity verification. Recommendations for SAID recording. Photographic record. Genetic record.

Unit 9 BIOMETRIC TECHNIQUES

Bertillon¿s composite sketch. Physiognomic and anthropometric studies: facial features, facial geometry, ear structure, comparative image studies. Forensic acoustics and speaker identification. Forensic odontology: oral morphology, dental pieces, odontogram, palatoscopy, rugoscopy, and cheiloscopy. Forensic use of DNA: types of DNA and their relevance in criminal investigation. Search, collection, and analysis of biological traces. Technical or expert report on DNA studies. Interpretation of results. Identification through DNA analysis. DNA in the Criminal Procedure Law. Organic Law 10/2007 regulating the police database of DNA identifiers.

Unit 10 BALLISTICS AND TOOL MARKS

Weapons: definition and classification. Pistols: operation and main components. Revolvers: operation and main components. Cartridge concept and parts. Weapon caliber and ammunition. Operational and identification ballistics, ballistics classification. Collection of weapons, ballistic elements, and gunshot residues. Trajectories and impacts. Effect ballistics and wound ballistics. Ballistic scene inspection. Integrated Ballistic Identification System (IBIS). Tool marks, footprints, tire marks, and tool impressions.

Unit 11 FIRE INVESTIGATION (I)

Arson crime. General theory of fire. Heat transmission methods. Thermal load. Combustibility and

flammability of materials. Interpretation of marks and signs. Combustion accelerants. Prevention regulations.

Unit 12 FIRE INVESTIGATION (II)

Technical fire inspection in various scenarios: industrial, domestic, vehicles, forest. Sample collection. Investigation methodology. Special photography in fire scenes. Case study analysis.

Unit 13 DOCUMENT EXAMINATION: FORGERY AND HANDWRITING ANALYSIS

Security features: paper, inks, printing systems, optical devices, and others. Lighting in document examination. Technical tools. Network system for authentic and fake documents: FADO.
Handwriting analysis: concept and components. Laws of writing. Graphic elements: essential and complementary. Operational procedures in handwriting analysis. Writing body. Signature and rubric. Guidelines from the National Institute of Toxicology and Forensic Sciences for document sample preparation and collection.

Unit 14 RESPONSE TO INCIDENTS WITH MULTIPLE VICTIMS

Disaster classification. Coordination between forensic doctors and forensic police: Royal Decree 32/2009 of January 16. Response phases. IVD teams. Data Integration Center. Individualization of bodies, remains, and objects. Work forms, reports, and custody chain. Necroidentification and necrorecording systems.

Unit 15 EXPERT REPORT

Expert and technical reports. Structure and characteristics. Legal references to the expert and the report. Expert's role in oral trial.

Unit 16 FORENSIC COMPUTING, QUALITY SYSTEMS, BINCIPOL

Concept and objectives of forensic computing. Operational procedures. Types of analysis: forensic tools. Quality systems in forensic laboratories: European regulations. Traceability, reproducibility, and validation. Police Scientific Intelligence Database.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	75,00
Total hours	**75,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	8,00
Individual or group project	21,00
Independent study and work	31,00
Preparation of lessons	13,00
Preparation for assessment activities	29,00
Resolution of case studies	10,00
Total hours	**112,00**

TEACHING METHODOLOGY

The development of the subject is structured in 14 thematic units, each of which is planned to be developed in approximately 5 to 6 hours, adjusting them to the sessions, of face-to-face classes, that the schedule establishes.
The peculiarity of this subject, which requires the knowledge and handling of materials, methods and systems that are rare in legal degrees, makes it necessary to explain:
Theoretical subjects, to develop the exposition of the points of the program, with the support of audiovisual techniques.
Practice exercises for the application of the explained matter. These practices have two phases, one in the laboratory where the techniques are observed and verified and another for resolution and delivery of work, via email.
The practical works, very important in this subject, can be individual with delivery and evaluation, to control the evolution in the learning and application of the acquired knowledge and also for group management of complex works, with a number of participants from 3 to 5 , with personalized tasks and collective coordination.
Curriculum tutorials and personalized attention to students that can, to facilitate the student's queries, be made through email, always on specific issues. Likewise, individual and group face-to-face tutorials will be held.
Timely information on the work carried out, for self-assessment.
The teacher will attend to the doubts that arise from the students when analyzing and completing any specific question of those developed in class and guiding the research process, acting as a mediator in learning.
In these meetings, the different aspects of the work carried out will be discussed, both correcting those faults that are detected in the theoretical understanding and in the practical application.
To teach the subject, the available technical resources will be used: Web CT platform. Internet and other UV computer applications accessible from a standard browser, with which students will access a password-protected work environment in which they can carry out the appropriate actions:
Access online content related to the course: notes, presentations, links, videos...
Take exams, quizzes and self-assessments.
Submit assignments to teacher
Access discussion forums to post messages addressed to the entire group or to subgroups of the class, answering questions raised by the teacher.

EVALUATION

The qualification of the subject will be determined from the qualifications obtained from the continuous

evaluation developed in each group, which corresponds to 30% of the final qualification, and from the completion of the final test on the dates set by the Faculty. which corresponds to 70% of the final grade.It will be necessary to obtain a minimum passing grade in the final test to pass the subject, regardless of the grade obtained in the continuous evaluation.The professor's annex will detail the conditions of the continuous evaluation and the oral or written nature of the final test, as well as whether a partial test, of a liberating nature or not, will be carried out on the dates set by the Faculty.Students who do not take the continuous assessment may take the final test on the first call, and the grade obtained will be limited to the weighted value that this test has in the final grade (70%), so that, at most, You can get a 7 as a final grade. In case of suspending the first call, for the second call the grade obtained in the continuous evaluation is kept. If the teacher's annex foresees that there is some activity as recoverable, it will determine the way to obtain the qualification of the same/s in the second call.

REFERENCES

BÁSICAS

- 1.- MANUAL DE POLCIA CIENTÍFICA: entre la teoría y la experiencia. José Francisco Planells Garcés, Ed Tirant lo Blanch 2022.
- 2.- Policía científica. Antón Barberá, Francisco y Luis y Turégano, Juan Vicente de. Valencia: Tirant lo Blanch, 2012.
- 3.- Normativa: Código Civil. Código Penal, LEC, LECr, Reglamento de Armas. Protocolo Nacional de Actuación Médico-forense y de Policía Científica en sucesos con víctimas múltiples. Reglamento del Instituto de Toxicología, Ley Orgánica 4/2015 de Protección de la Seguridad Ciudadana, RD 1553/2005, de 23 de diciembre, que regula la expedición del DNI y sus certificados electrónicos, RD 896/2003, de 11 de julio, por el que se regula la expedición del pasaporte ordinario, Reglamento de Seguridad contra incendios en los Establecimientos Industriales (RSCIEI), (RD 2267/2004, de 3 de diciembre), Reglamento de Instalaciones de Protección contra Incendios (RIPCI), (RD 513/2017, de 22 de mayo). Código Técnico de la Edificación (CTE), (RD 314/2006, de 17 de marzo).

COMPLEMENTARIAS

- Sistemas operativos de informática: DOS, WINDOWS, LINUX, Mac.
- Accesos a paginas web especializadas
- Utilización del sistema informático de la UV