UNIVERSITY OF CALICUT
DEPARTMENT OF FORENSIC SCIENCE
KERALA POLICE ACADEMY
THRISSUR.

Open Elective Course

Course Code: FSC07E502
Course Name: INTRODUCTION TO FORENSIC SCIENCE
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Syllabus

FSC07E502 INTRODUCTION TO FORENSIC SCIENCE

(4 credit, 60 hrs)

COURSE OUTCOMES [COs]

COs	Course Outcome Statements	Cognitive level
CO1	Understand the principles and branches of forensic science.	K2
CO2	Understand the basics of fingerprints, questioned documents and digital forensics.	K2
CO3	Application of various subjects of biology in forensic science.	K4
CO4	Application of physics in forensic science.	K4
CO5	Understand about firearms, ammunition and its forensic examination.	K2
CO6	Application of chemistry and toxicology in forensic science.	K4
K1– Remember K2 – Understand K3 – Apply K4 – Analyze K5 – Evaluate		

MODULE 1: Introduction to Forensic Science **(10 hrs)**

- Principles of Forensic Science.
- Branches of Forensic Science, Forensic Science Laboratory.
- State, Central and Directorate of Forensic Sciences and allied institutions.
- Laws relating to expert evidence, with reference to new Criminal Laws.

MODULE 2: Fingerprints, Questioned Documents and Digital Forensics **(15 hrs)**

- Development of Fingerprint Science, Various systems for Fingerprint classification.

- Development of Latent Prints and Lifting techniques.
- Development, Identification and Presentation of Fingerprint.
- Scope and importance of forensic document examination.
- Introduction to Principles of hand writing & signature identification.
- Forgeries and its types and their detections.
- Computer facilitated crimes.
- Digital evidence.
- Collection of digital evidence.
- Digital forensic software and hardware tools.
- Hashing and imaging of digital evidence.

MODULE 3: Forensic Biology **(15 hrs)**

- Collection and preservation of biological fluids.
- Preliminary and confirmatory test for blood, semen, saliva and other body fluids.
- Forensic hair examinations, human v/s non-human hair.
- Diatoms.
- Introduction to Forensic Medicine- Cause and manner of death.
- Medico legal examination.
- Forensic anthropology and odontology.
- DNA evidence- Sources of DNA, extraction/ isolation of DNA.
- Introduction to DNA profiling.

MODULE 4: Forensic Physics and Ballistics **(10 hrs)**

- Forensic examination of glass.
- Forensic examination of paints.
- Soil and its composition- analysis of soil samples.
- Introduction to tool marks.
- Forensic Ballistics- Classification of firearms and ammunition; Identification of firearm, shooter.
- The range of firing and determination of trajectory.

MODULE 5: Forensic Chemistry and Toxicology **(10 hrs)**

- Types of cases/exhibits in forensic chemistry and toxicology.
- Narcotics drugs and psychotropic substances and their forensic examination.
- Classification of poisons.
- Collection and preservation of toxicological exhibits.
- Arson and its forensic examination.
- Explosive devices and explosion.
- Adulterants in food and food products, cement, petroleum products, pharmaceutical products, medicines, beverages.

Recommended reading:

1. Sharma, B.R; Forensic Science in Criminal Investigation & Trials, Universal Publishing Co., New Delhi, 2003
2. Nanda B.B and Tewari, R.K; Forensic Science in India- A vision for the Twenty First Century, Select Publisher, New Delhi, 2001.
3. Saferstein; Criminalistics- An Introduction of Forensic Science, Prentice Hall Inc, USA,2007.
4. Barry, A.J. Fisher; Techniques of Crime Scene Investigation, 7th Ed, CRC Press, NewYork, 2003.
5. The Indian Evidence Act,(1872), Amendment Act (2002); Universal Law Publishing Co., 2003.
6. The Code of Criminal Procedure (1973) Amendment Act, (2001); Universal Law Publishing Co., 2002.
7. R.C. Nigam, Law of Crimes in India, Volume I, Asia Publishing House, New Delhi (1965).
8. Miller M.: Absolute Beginner's Guide to Computer basics (5th Edn.), Que, 2009.
9. Block diagram of a generic computer (Ref: Figure 1-11 of https://www.oreilly.com/library/view/designing-embedded-hardware/0596007558/ch01.html).
10. Bill Nelson, Amelia Phillips; Guide to Computer Forensics and Investigation, ISBN-10: 1435498836, ISBN-13: 978-1435498839.

Mapping of COs with POs and PSOs

Course Outcomes\ POs & PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO14	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	1	2	1	1	2	1	2	1	2	1	2	2	1	3	3	2	1	3	2
CO2	3	2	1	1	1	2	1	2	1	2	1	2	2	1	3	3	2	1	3	2
CO3	3	3	2	1	1	3	1	2	1	2	2	3	2	1	3	3	3	2	3	3
CO4	3	2	2	1	1	3	1	2	1	2	2	3	2	1	3	3	3	2	3	2
CO5	3	2	1	1	1	2	1	2	1	2	2	3	2	1	3	3	2	1	3	2
CO6	3	3	2	2	1	3	1	3	1	2	2	3	2	2	3	3	3	2	3	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High