COMMON POOL OF GENERIC ELECTIVE COURSES
OFFERED BY DEPARTMENT OF ANTHROPOLOGY

Category-IV

GENERIC ELECTIVES (GE-1)

Credit distribution, Eligibility and Pre-requisites of the Course

Course t itle & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Forensic and Criminal investigations	4	3	0	1	Class X II pass with biology	NIL

Learning Objectives

The Learning Objectives of this course are as follows:
- Give exposure of Forensic Science to students which focus on the investigation process of a crime.
- Enhance understanding of forensic applications and criminal investigations by teaching and research.
- Develop skills in forensic identification and problem solving methods.
- Keep up to date knowledge about all recent developments and emerging trends in Forensic science and criminal investigation.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Understand the aim, concept and significance of Forensic Science and Criminal Investigation.
- To make aware about recent techniques and developments of Forensic Science and Criminal Investigation.

SYLLABUS OF GE-1

UNIT – I: Forensic Science, Crime Scene Management and criminal investigation **(9 hours)**
- Introduction, history, development, laws and branches of Forensic Science.
- Organizational set-up of Forensic science laboratories.
- Crime scene protection, isolation, documentation, sketching, field notes and photography.
- Definition, concept, types and scope of crime, various control and prevention methods of crime.
- Criminology, criminal anthropology and criminal law

UNIT – II Forensic Ballistics and Explosives (9 hours)
- History, background, classification and characteristics of Firearms
- Internal, External, Terminal (wound) ballistics

- Classification, synthesis and characteristics of explosives.
- Examination and identification of firearms and explosives evidences.

UNIT – III Forensic Chemistry and toxicology (9 hours)

- Introduction, sampling, presumptive, screening and analytical techniques in Forensic Chemistry.
- Definition, classification and extraction of poisons.
- Toxicological techniques used in poisoning cases.
- Classification of drugs, Field and laboratory tests of drugs of abuse.

UNIT – IV Questioned Documents and fingerprint examination (9 hours)

- Classification of forensic documents, importance of natural variation and disguised writing
- Class and individual characteristics of handwriting and documents examination.
- History and classification of fingerprints, Conventional and modern methods of developing latent fingerprint.
- Automated Fingerprint Identification System (AFIS).

UNIT – V Forensic anthropology, Serology and DNA profiling (9 hours)

- Personal identification of living and non- living individual through various anthropological techniques.
- Forensic morphometric techniques of skeleton remains, Human and non-human identification.
- Sex determination, stature and age estimation from skeleton remains
- History, biochemistry and genetics of ABO, Rh, MN and other blood systems. Blood pattern analysis and blood stains ageing.
- DNA profiling and its application in criminal and civil investigations.

Practical component (if any) -
1. Descriptive study of organizational structure of a forensic science laboratory.
2. Interpretation of crime scene notes, photos, sketches, crime scene reconstruction and mock crime scene investigation.
3. Linkage of suspected bullet and cartridge case with the class and individual characteristics of firearms.
4. TLC and spot test for different toxic and drugs substances
5. Forensic identification of class and individual characteristics of handwriting
6. Examination of passports and currency notes
7. Various powder and chemical methods used for latent fingerprints.
8. Ridge characteristics, counting, and fingerprint comparison
9. Morphometric examination of skeleton remains
10. Sex determination, age and stature estimation from skeleton remains.
11. Examination of blood groups from fresh and dried blood stains
12. Preliminary and confirmatory tests for blood stains.

Essential/recommended readings

1. Sharma, B.R; Forensic Science in Criminal Investigation & Trials, Universal Publishing Co., New Delhi, 2003
2. Saferstein; Criminalistics- An Introduction of Forensic Science, Prentice Hall Inc, USA,2007.
3. Swansson, C.R, Chamelin, N.C, &Territ, L; Criminal Investigator, McGrawhill, New York, 2000.
4. The Indian Evidence Act,(1872), Amendment Act (2002); Universal Law Publishing Co., 2003.
5. The Code of Criminal Procedure (1973) Amendment Act, (2001); Universal Law Publishing Co., 2002.
6. Rattan Lal &DhirajLal; The Indian Penal Code, 28th Ed. Wadhwa& Co. Nagpur, 2002.
7. Clark E.G.C; Isolation and Identification of drugs, Academic Press, London, 1986
8. Feigl, F; Spot Test in Inorganic Analysis, Elsevier Publ. New Delhi, 2002
9. Sharma, B.R.; Firearms in Criminal Investigation & Trials, 4th Ed, Universal Law Publishing Co Pvt Ltd, New Delhi, 2011.
10. Hilton, O; Scientific Examination of Questioned Documents. Revised Edition, Elsevier, New York, 1982.
11. Singh, I.P. & Bhasin M.K; A manual of biological Anthropology, Kamla Raj Enterprises, New Delhi, 2004.
12. Eveleth, P.B. & Tanner, J.M; Worldwide Variation in Human Growth, Cambridge University Press, London, 1976.
13. Seigel, J.A, Sukoo, R.J, &Knupfer, G.L; Encyclopaedia of Forensic Science, Academic Press, London, 2000.
14. Pickering, R. & Bachman D; The use of Forensic Anthropology, CRC Press, Costa Rica, 2009.
15. Butler, J; Advanced Topics in Forensic DNA Typing: Methodology, 1st Ed., Academic Press, London, 2009.
16. Cummins, H., &Midlo, C. (1961). Finger Prints, Palms and Soles. New York: Dover Publications.

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

Course t itle & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
Anthropology of Sustainable Development	4	3	0	1	Class X II pass with biology	NIL