FACULTY OF SCIENCE

SYLLABI

FOR

DIPLOMA IN FORENSIC SCIENCE AND CRIMINOLOGY (SEMESTER SYSTEM)

EXAMINATIONS 2011-2012

--:O:--
DEPARTMENT OF ANTHROPOLOGY, P.U., CHANDIGARH

Outlines of tests, syllabi and courses of readings in the subject of Diploma in Forensic Science and Criminology Course for the examination of 2011-2012.

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<th>Paper No.</th>
<th>Title</th>
<th>Marks of</th>
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<tr>
<td></td>
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<td>Annual</td>
<td>Int.</td>
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<td>SEMESTER I</td>
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<tr>
<td>I.</td>
<td>Fundamentals of Forensic Science-Part I</td>
<td>40</td>
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<td>II</td>
<td>Forensic Anthropology - I</td>
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<td>V</td>
<td>Practical in Forensic Science I</td>
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SEMESTER II

| I.        | Fundamentals of Forensic Science Part-II  | 40      | 10   | 50    | DFSc 2.1  |
| II        | Forensic Anthropology - II  | 40       | 10   | 50    | DFSc 2.2  |
| III       | Forensic Physical Science - II  | 40       | 10   | 50    | DFSc 2.3  |
| IV        | Criminology and Criminal Law II  | 40       | 10   | 50    | DFSc 2.4  |
| V         | Practical in Forensic Science II  | 40       | 10   | 50    | DFSc 2.5  |
The objective of the paper is to introduce the discipline to students and understand the various scientific principles involved in forensic science and to conduct the scientific studies on various physical parameters such as Law of Individuality, Principle of Exchange, Law of Probability, Principle of Comparison, Principle of Analysis, Presentation of expert evidence in the court of Law and basic understanding of different tools and techniques involved in forensic sciences.

SECTION-I


SECTION-II


SECTION-III

Practical Police work – Scientific aspects : surveillance, interrogation, examination of scene of crime, scientific help at the scene.

SECTION-IV

Presentation of evidence and evidentiary clue; expert’s presentation, presenting counsel’s contributions, defence counsel’s role, court’s participation; evidentiary clue.

NOTE:
(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; atleast one from each Section and the compulsory question.
(c) Each question will carry 8 marks.
SUGGESTED BOOKS

Essential Readings:


Further Readings:


DFSc 1.2
Paper-II: Forensic Anthropology-I

Total Marks: 50
Annual Exam:40
Internal Assessment: 10

The course introduces basic principles of forensic anthropology – a major branch of forensic science and an applied field of biological anthropology. Forensic anthropology uses human osteology and other biological anthropological techniques to solve problems of medicolegal significance, especially personal identity and cause of death from human remains. The present syllabus is designed in such away to offer hands-on-experience that will adapt to virtually any professional situation to follow in the forensic career. The student will be trained at identifying human remains including bones and teeth, anthropometry, analysis of hair, fingerprint identification, examination of human body fluids and hematological markers and basic postmortem examination.
SECTION-I

Forensic anthropology: definition, aims and scope and its relevance in forensic science.

SECTION-II

Anthropometry and somatoscopy: Bertillon system of identification, scope and present status.

SECTION-III

Forensic Osteology: elementary study of human skeleton, personal identification from bones, determination of age, sex, stature, reconstruction of skull and face.

SECTION-IV

Forensic Odontology: definition, personal identification from teeth, morphological variations and bite marks.

NOTE:

(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; at least one from each Section and the compulsory question.
(c) Each question will carry 8 marks.

SUGGESTED BOOKS

Essential Readings:


The objective of this paper is to conduct scientific study of various physical evidences such as firearms, ammunition, tool marks, foot prints, questioned documents, speech samples, toxicological material such as various kinds of poisons and drugs etc. These physical evidences have potential evidential value in various crime cases such as shooting incidence, forgery, hit and run vehicle accidents, murder, suicide, kidnapping and threatening, if collected and examined properly to link the culprit with the crime or vice versa.

**SECTION-I**

Identification and evaluation of: foot prints, tracks and trails.
SECTION-II

Handwriting and questioned documents: documents, handwriting development, forgeries, typescripts, anonymous letters, disguised handwriting.

SECTION-III

Forensic toxicology: Poisons, Narcotic drugs and Psychotropic substances, alcohol, addiction and intoxication.

SECTION-IV

Arson: Investigation of fires, seat, time, natural cause, suspected arson, motive search for evidence & its collection and evaluation.
Explosives: Definition, type, uses, improvised explosive devices, investigation of site of blasts, collection of evidence and its evaluation.

NOTE:
(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; atleast one from each Section and the compulsory question.
(c) Each question will carry 8 marks.

SUGGESTED BOOKS

Essential Readings:


Further Readings:

Sharma B.R. (1976) Fire on Investigation in Criminal Investigation and Trials, Bombay


**DFSc 1.4**

**Paper-IV: Criminology and Criminal Law I**

**SECTION-I**

1. Criminology: Definition, Scope and development
2. Indian Penal Code
   Definitions: (a) Dishonesty Section 23, 24; Fraudulently Section 25; Good Faith Section 52; Inquiry Section 44; Voluntarily Section 39.

**SECTION-II**
3. Indian Penal Code
   (a) General exceptions (sections 74 to 104); Criminal Conspiracy
       (Sections 1 to 13).
   (b) Crime Against Person: Hurt (Sections 323 to 327); Murder (Sections
       299 to 302).

   SECTION-III

6. Theories of punishment.

   SECTION-IV

8. Prostitution: Background, Causes and the laws.
10. Case study.

Note: (a) In all nine questions to be set, four questions each from Sections A&B of the
    syllabus. Section C of the question paper will consist of 4-8 short answer type
    questions covering the whole syllabus given in Section A&B. There will be no
    choice in the compulsory question.
(b) Students will be required to attempt five questions, at least two from each
    Section and the short answer type question will be compulsory.
(c) All questions will carry equal marks, including the compulsory question

SUGGESTED BOOKS

Paper-IV : Criminology and Criminal Law


Criminal Procedure Code.
Indian Penal Code.
Indian Evidence Act.
Indian Constitution.


DFSc 1.5 Practical in Forensic Science I

Total Marks: 50
Annual Exam: 40
Internal Assessment: 10


Determination of Age, Sex and Stature from Human Skeletal material.

Demonstration of and interpretation of different types of mechanical injuries

Suggested Readings


SEMESTER II

DFSc 2.1
Paper-I: Fundamentals of Forensic Science-Part II

The objective of the paper is to understand the material evidence and its strength in forensic science and tools and techniques in forensic science. Studies on elements of statistics will also be carried out for inter and intra comparison of physical clue material/evidences. These clue material/evidences have potential evidential value in various criminal cases to link the criminals with crime with great certainty, if these are collected and examined properly

SECTION-I

Material evidence, its strengths and weaknesses, alternative to material evidence, its strengths and weaknesses.

SECTION-II

Tools and techniques in forensic science.

SECTION-III

Problems of proof.

SECTION-IV

Elements of statistics in Forensic Science.

NOTE:
(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; at least one from each Section and the compulsory question.
(c) Each question will carry 8 marks.

**SUGGESTED BOOKS**

**Essential Readings:**


**Further Readings:**


**DFSc 2.2**

**Paper-II: Forensic Anthropology-II**

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The second part of the forensic anthropology course introduces forensic analysis of hair, fingerprint identification and their forensic significance. The course also introduces examination of human body fluids and hematological markers and basic postmortem examination with special emphasis on time and cause of death.
SECTION-I
Hair: morphology of hair, distinction between human and animal hair, differentiation of scalp, body and pubic hair; determination of age and sex from hair; population differences.

SECTION-II
Dermatoglyphics: Personal identification from finger, palm and sole prints; latent prints – methods of development and identification;

SECTION-III
Body fluids and Haematological markers: detection of blood, blood stains, and other body fluids (semen, saliva, milk, urine, sweat); composition of blood, genetics of ABO, MN, Rh systems, ABH secretion; application of blood groups in personal identification and paternity disputes. Molecular anthropology & basics of DNA profiling technique and its application in crime detection.

SECTION-IV
Death investigations: time and cause of death, Post-mortem examination.

NOTE:
(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; atleast one from each Section and the compulsory question.
(c) Each question will carry 8 marks.

Essential Readings:


The objective of this paper is to conduct scientific study of various physical evidences such as firearms, ammunition, speech samples, glass, paint, soil, fire debris etc. These physical evidences have potential evidential value in various crime cases such as shooting incidence, forgery, hit and run vehicle accidents, murder, suicide, kidnapping and threatening, if collected and examined properly to link the culprit with the crime or vice-versa. The paper will further explore use of photography and speaker identification and psychological evidence in forensic analysis. The paper will also shed light on examination of various kinds of accidents like Accidents: road accident, airplane crash, train accident, natural disasters.

**SECTION-I**

Forensic ballistics and tool marks: firearms, ammunition, powder residue, identification of firearm injuries, reconstruction.

**SECTION-II**

Photography and speaker identification, Tape authentication, Computer Forensics, Forensic Psychology.

**SECTION-III**

Trace, element analysis: glass, paint, soils, inks, papers, greases, lubricants, waxes.

**SECTION-IV**
Accidents: road accident, airplane crash, train accident, natural disasters.

NOTE:
(a) In all nine questions to be set, two questions each from Sections I-IV and one compulsory question of 4-8 short answer type questions covering the whole syllabus. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions in all; atleast one from each Section and the compulsory question.
(c) Each question will carry 8 marks.

SUGGESTED BOOKS

Essential Readings:


**Further Readings:**


**Paper-IV: Criminology and Criminal Law II**

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**SECTION-I**

3. Theories of criminal behavior: Classical Theory

**SECTION-II**

   (a) Definition: Cognizable, Non-Cognizable, Complaint, Bailable, Non-Bailable, Summons case, Warrant case, Compoundable offence (Section 2).
   (b) Arrest (Sections 41 to 60).
   (c) FIR and Powers of Police to investigate (Sections 154 to 176).
5. Theories of criminal behavior: Positivist Theory.

**SECTION-III**

6. Criminal Procedure Code (II):
   (a) Process to compel the appearance of a person (Sections 61 to 90).
   (b) Complaint case (Sections 190 to 204).
   (c) Classification of Criminal Courts and their powers (Sections 6 to 35)
SECTION-IV

8. Indian Evidence Act:
   (a) Definition: Section 3 – Evidence, Facts Proved, Disproved and Not Proved; May Presume, Shall Presume and Conclusive Proof.
   (b) Confession by Accused (Sections 24 to 30).
   (c) Expert Opinion (Sections 45 to 47).


10. Case study.

Note: (a) In all nine questions to be set, four questions each from Sections A&B of the syllabus. Section C of the question paper will consist of 4-8 short answer type questions covering the whole syllabus given in Section A&B. There will be no choice in the compulsory question.
(b) Students will be required to attempt five questions, at least two from each Section and the short answer type question will be compulsory.
(c) All questions will carry equal marks, including the compulsory question

SUGGESTED BOOKS

Paper-IV : Criminology and Criminal Law


Criminal Procedure Code.

Indian Penal Code.

Indian Evidence Act.

Indian Constitution.


**DFSc 2.5 Practical in Forensic Science II**

**Total Marks: 50**
**Annual Exam: 40**
**Internal Assessment: 10**

Introduction to the practice of Human Somatometry and Somatoscopy and its applications in Forensic Sciences.

Somatoscopy and Somatometry (cranio-facial and other body measurements)

Overview of dermatoglyphic studies in Forensic practice, Finger Dermatoglyphics of human subjects.

Basic Blood grouping Techniques

Observation and record of Post Mortem Examinations.

Visit to Forensic Science Laboratory/ Finger print Bureau/ Police Station/ other relevant institutions. Students shall make a record of their visits and submit the same in the form of a report for examination.

**Suggested Reading**


Vij, Krishan 2005 Forensic medicine & Toxicology 3rd edition NOIDA: Saurabh Printers

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