



KARNATAK UNIVERSITY, DHARWAD
ACADEMIC (S&T) SECTION
 ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಧಾರವಾಡ
 ವಿದ್ಯಾಮಂಡಳ (ಎಸ್&ಟಿ) ವಿಭಾಗ



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NAAC Accredited
 'A' Grade 2014

website: kud.ac.in

No. KU/Aca(S&T)/RIH-280/BOS /Crim.&For.Sci. (UG) /20-21/ 1042

Date: 19 OCT 2020

NOTIFICATION

Sub: Regarding introduction of the syllabus of Criminology & Forensic Science (UG) under C.B.C.S. w.e.f. the academic year 2020-21 & onwards.

- Ref: 1. UGC Letter DO No. 1-1/2016(SECY), dt. 10.08.2016.
 2. Special BOS Res. No. 01, dt. 10.07.2020.
 3. Special Faculty Res. No. 17, dt. 07.08.2020.
 4. Special Academic Council Res. No. 28, dt. 21.08.2020.
 5. Vice-Chancellor's order dated 8 OCT 2020

Adverting to the above, it is hereby notified to the Principals of all constituent and affiliated degree colleges coming under the jurisdiction of Karnatak University, Dharwad that the Criminology & Forensic Science UG syllabus for I to VI Semester which is annexed herewith in Annexure-A is introduced under C.B.C.S. from the academic year 2020-21 & onwards.

Hence, the contents of this notification may please be brought to the notice of the students and all the concerned. The prescribed C.B.C.S. syllabus may also be obtained through K.U.website (www.kud.ac.in).

(Dr. Hanumantappa K.T)
 REGISTRAR

To,

1. The Chairman, BOS Mass Communication & Journalism (UG/PG), Dept. of Mass Communication & Journalism, K.U.Dharwad.
2. The Chairman, Dept. of Mass Communication & Journalism, K.U.Dharwad.
3. The Principals of all the constituted and affiliated degree colleges under the jurisdiction of Karnatak University, Dharwad. (The same may be sent through e-mail)
4. The Registrar (Evaluation), K.U.Dharwad.

Copy fives to:

1. Dr. M.A.Jalihal, Dean, Faculty of Social Science, Dept. of Psychology, K.U.Dharwad.
2. The Director, IT Section, Examination Section, K.U.Dharwad for information and to upload on K.U.Website (www.kud.ac.in).

Copy to:

1. PS to Vice-Chancellor, K.U.Dharwad.
2. S.A. to Registrar, K.U.Dharwad.
3. O.S., Exam UG / Confl / QP / GAD Section, K.U.Dharwad.
4. The System Analyst, Computer Unit Exam Section, K.U.Dharwad.



KARNATAK UNIVERSITY, DHARWAD

B. A. Programme under

Choice Based Credit System

SYLLABUS FOR THE SUBJECT

CRIMINOLOGY AND FORENSIC SCIENCE

AS DSC AND SEC

Effective from 2020-21

B.A. Programme structure under CBCS.

| Seme ster | *Core | | | Elective | | | | | | Ability Enhancement Course | | | | | | Total Credi |
|--------------|--------|-------|--------|----------|-------|--------|--------|-------|--------|----------------------------|-------|--------|---------------------------|-------|--------|----------------|
| | DSC | | | **DSE | | | ***GE | | | ****SEC | | | AECC | | | |
| | Course | L+T+P | Credit | Course | L+T+P | Credit | Course | L+T+P | Credit | Course | L+T+P | Credit | Course | L+T+P | Credit | |
| I | DSC-1A | 4+0+4 | 4+2=6 | | | | | | | | | | English-1 | 2+1+0 | 2+1=3 | 26 |
| | DSC-2A | 4+0+4 | 4+2=6 | | | | | | | | | | MIL-1 | 2+1+0 | 2+1=3 | |
| | DSC-3A | 4+0+4 | 4+2=6 | | | | | | | | | | ENVIRONMEN TAL SCIENCE | 2+0+0 | 2+0=2 | |
| II | DSC-1B | 4+0+4 | 4+2=6 | | | | | | | | | | English-2 | 2+1+0 | 2+1=3 | 26 |
| | DSC-2B | 4+0+4 | 4+2=6 | | | | | | | | | | MIL-2 | 2+1+0 | 2+1=3 | |
| | DSC-3B | 4+0+4 | 4+2=6 | | | | | | | | | | CONSTITUTI ON OF INDIA | 2+0+0 | 2+0=2 | |
| III | DSC-1C | 4+0+4 | 4+2=6 | | | | | | | | | | English-3 | 2+1+0 | 2+1=3 | 24 |
| | DSC-2C | 4+0+4 | 4+2=6 | | | | | | | | | | MIL-3 | 2+1+0 | 2+1=3 | |
| | DSC-3C | 4+0+4 | 4+2=6 | | | | | | | | | | | | | |
| IV | DSC-1D | 4+0+4 | 4+2=6 | | | | | | | | | | English-4 | 2+1=0 | 2+1=3 | 24 |
| | DSC-2D | 4+0+4 | 4+2=6 | | | | | | | | | | MIL-4 | 2+1=0 | 2+1=3 | |
| | DSC-3D | 4+0+4 | 4+2=6 | | | | | | | | | | | | | |
| V | | | | DSE-1E | 4+0+4 | 4+2=6 | GE-1E | 2+0+0 | 2 | SEC-1E | 2+0+0 | 2 | | | | 22 |
| | | | | DSE-2E | 4+0+4 | 4+2=6 | | | | | | | | | | |
| | | | | DSE-3E | 4+0+4 | 4+2=6 | | | | | | | | | | |
| VI | | | | DSE-1F | 4+0+4 | 4+2=6 | GE-1F | 2+0+0 | 2 | SEC-1F | 2+0+0 | 2 | | | | 22 |
| | | | | DSE-2F | 4+0+4 | 4+2=6 | | | | | | | | | | |
| | | | | DSE-3F | 4+0+4 | 4+2=6 | | | | | | | | | | |
| TOTAL | | | 72 | | | 36 | | | 4 | | | 4 | | | 28 | 144 |

L+T+P= Lecturing in Theory + Tutorial + Tutorial Hours per Week (no tutorial for practical subject).

*If the core course is having Tutorial. Hence, L+T+P = 4+0+2=6 credits (no tutorial for Tutorial subject).

** Each DSE shall have at least two papers and student shall choose any one paper from each DSE.

***GE shall be from other than the discipline.

**** SEC shall be from any one DSC and study one each in 5th and 6th semesters (SEC may be Tutorial or theory for 2 credits only).

Note: 1. Each DSC/DSE Shall have 60hrs syllabus / semester for 100 marks in theory (80 Sem. End exam +20 IA Exam) and 52 hrs Tutorial/sem for 50

IA Exam) wherever applicable.

2. English/MIL Shall have 45 hrs syllabus / semester for 100 marks in theory (80 Sem. End exam +20 IA Exam).

3. Environmental Science/ Constitution of India / SEC /GE shall have 30 hrs syllabus / semester for 50 marks in theory/ Tutorial (40 Sem. End exams +10 IA Exam)

marks

(40 Sem. End exam +10

Karnatak University, Dharwad
B. A. CBCS syllabus for Under Graduate Programme
Subject :- CRIMINOLOGY AND FORENSIC SCIENCE AS DSC
Effective from 2020-21

| Semester | Theory/ Practical | Subject Code | Instruct hrs/wk | Syllabus hrs/ Sem | Duration of Exam. | Internal Assessment Marks | Sem final Exam. Marks | Total Marks | Credits |
|----------|-----------------------|--------------------------------------|--------------------|-------------------------|----------------------|---------------------------------|--------------------------------|----------------|---------|
| I | Theory | DSC-(CRM-T:h A) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC-(CRM-Pr: A) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| II | Theory | DSC-(CRM-Th: B) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC-(CRM-Pr: B) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| III | Theory | DSC-(CRM-Th: C) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC-(CRM -Pr: C) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| IV | Theory | DSC-(CHM -Th: D) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC-(CRM-Pr: D) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| V | *Theory P-I /P- II | DSE-(CRM-Th P-I E CRM-Th: P-II E) | 04 hrs / 04 hrs | 60/60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSE-(CRM-Pr: E) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| VI | *Theory P-I /P- II | DSE-(CRM-Th P-I F CRM-Th: P-II F) | 04 hrs / 04 hrs | 60/60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSE-(CRM-Pr: F) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| Total | | | | | | 180 | 720 | 900 | 36 |

*Candidate shall choose either paper –I or P-II but not both in DSE theory.

**SKILL ENHANCEMENT COURSE (SEC) AND GENERIC ELECTIVE FOR
CRIMINOLOGY AND FORENSIC SCIENCE OPTED AS DSC**

| Sem ester | Theory | Subject Code | Instruction hour per week | Total Syllabus Hrs/ Sem | Duration of Exam. | Internal Assessment Marks | Sem final Exam. Marks | Total Marks | Credits |
|-----------|--------|---------------|---------------------------|-------------------------|-------------------|---------------------------|-----------------------|-------------|---------|
| V | Theory | (SEC-CRM- 1E) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| V | Theory | (GE-CRM- 2E) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| VI | Theory | (SEC-CRM- 1F) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| VI | Theory | (GE-CRM- 2E) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| Total | | | 08 hrs | 120 | | 40 | 160 | 200 | 08 |

GENERAL PATTERN OF THEORY QUESTION PAPER FOR ALL THE SEMESTERS

1. Question number 1-12 carries 2marks to answer any 10 questions : 20 marks
2. Question number 13-21 carries 5marks to answer any 6 questions : 30 marks
3. Question number 22-26 carries 10marks to answer any 3 questions : 30 marks
(*for 10marks each question model would be distributed in manner of 7+3 or 6+4 or 3+3+4)

Total: 80 marks

GENERAL PATTERN OF THEORY QUESTION PAPER FOR ALL GE

1. Question number 1-6 carries 2marks to answer any 5 questions : 10 marks
2. Question number 7-12 carries 5marks to answer any 4 questions : 20 marks
3. Question number 13-14 carries 10marks to answer any 1 question : 10marks

Total: 40 marks

GENERAL PATTERN FOR ALL SEC

1. Lab work/Field work/Dissertation submission : 30 marks
2. Viva voce : 10 marks

Total : 40 marks

B. A. Criminology and Forensic Science

CHOICE BASED CREDIT SYSTEM

Effective from 2020-21

Course Objectives

Crime is one of the major social problems. It has posed a threat to social organization. To maintain peace, harmony and social order scientific approach to this problem is need of the hour. The problem of crime can be effectively tackled with the help of different agencies of Criminal Justice like Police, Prison, Law, Court and various other agencies. The study pertaining to different agencies of Criminal Justice is scientifically studied at the graduation level in Criminology and Forensic Science.

The students are exposed in this course on various aspects of Crime, Criminality, Reformation and Rehabilitation of Criminal, Victim of Crime, Victim Compensation, Victim Assistance and Restorative Justice to the parties concerned, Criminal Law, Forensic Science, Forensic Medicine and Toxicology and other branches.

Objectives of the study of this science is to make the students to understand the process of making laws, breaking of the laws, societal reaction to breaking of the laws and modern crimes.

To understand the application of science in the identification and analysis of physical clues found at the Crime Scene, Criminal and Victims.

To prepare the students to pursue their career in the State and Central Forensic Science Institutes, Law enforcement agencies and Judiciary.

To pursue their career in Social Security and Voluntary Organizations and prevent the occurrence of Crime.

SYLLABUS WITH NEW CBCS REGULATION 2020-21

I - Semester: B.A Degree programme in Criminology and Forensic Science

DSC - CRIMINOLOGY: CRM-Th: A

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: This paper is designed to acquaint the students with:

- a. The importance of criminology.*
- b. The causes of criminal behavior.*
- c. The consequences of crime in society.*
- d. The elements of criminal justice system.*
- e. Study of victim and victim assistance.*
- f. The causes & preventive measures of social problems*

UNIT I: INTRODUCTION

12 hours

- a) Definition, nature, scope and objectives.
- b) Social, psychological and legal approaches.
- c) Criminology as a Science and its relation with other social sciences.
- d) Law and characteristics of good law; Criminal Law-Definition, meaning, origin and characteristics.

UNIT II: CRIME AND CRIMINAL

12 hours

Crime

- a) Definition, concept and characteristics.
- b) Crime in ancient, medieval and modern society.
- c) Classification of crimes – British common law, American and IPC

Criminal

- a) Meaning and classification - Cesare Lombroso, M. J. Sethana, Havelock Ellis and Handerson.

UNIT III: SCHOOLS OF CRIMINOLOGY

12 hours

- a) Pioneers in criminology
- b) Pre-scientific schools
 - i. Demonological School
 - ii. Free-Will, Classical and Neo-Classical Schools.
- c) Cartographic School and Socialistic School.
- d) Typological Schools: Lombrosian, Mental Testers and Psychiatric, physiological make up approach.
- e) Sociological – Imitation, Differential Association and Multiple Factor Approach.

UNIT IV: CAUSES AND TYPES OF CRIME

12 hours

- a) Physical, physiological, psychological causes and crime.
- b) Social and economic causes and crime.
- c) Political causes and crime.
- d) General idea on professional, habitual, organized and white collar criminals.

UNIT V: SOCIAL PROBLEMS: MEANING, CAUSES & PREVENTIVE MEASURES.

12 hours

- a) Social problem : concept and approaches
- b) Juvenile delinquency
- c) Social issues of women
- d) Alcoholism and drug addiction.
- e) Corruption

Suggested Readings :

- Ahmed Siddique – Criminology Problems and Perspectives
- Edwin H. Sutherland and D.R.Crassey – Principles of Criminology
- H.E. Barns and N. K. Teeters – New Horizons in Criminology
- James Vadakumchery – Criminology and Penology
- M. Ponnaian – Criminology and Penology
- Paranjape N. V - Criminology and Penology
- R. S. Cavan - Criminology
- Sethana J. M. J. – Society and the Criminal
- Dr. Srivatsava S. S. – Criminology and Criminal Administration
- Walter C. Reckless – The Crime Problem
- Ram Ahuja – Social Problems in India
- Gireppagowdar. B.S – Aparadhashastra
- Ashoka – Aparadhashastra

**I Semester B.A: LAB COURSE
DSC-CRM-Pr: A**

Marks: IA 10, Main exam = 40 = Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Observation of given- picture and simulated scene of crime.
2. Criminological importance and analysis from daily newspapers.
3. Handling, packing and forwarding of physical clues to concerned expert for his opinion - cloth with red stains, hair, knife, dry stain on the floor.
4. Examination of tool marks

II - Semester: B.A Degree programme in Criminology and Forensic Science

DSC - CRIMINALISTICS: CRM-Th: B

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed with objectives of acquainting the students with:*

- a. *The significance of forensic science to human society.*
- b. *Functioning of the State Forensic Science Laboratory and State Finger Print Bureau*
- c. *The physical evidences at the scene of crime*
- d. *Use of Scientific aids in Criminal Investigation.*
- e. *The working of the forensic establishments in India and abroad*

UNIT I: INTRODUCTION

12 hours

- a) History and development of forensic science.
- b) Definitions, concepts and significance of forensic science.
- c) Pioneers in forensic science.
- d) Principles and branches of forensic science.
- e) Hierarchical set up of forensic science laboratories at central and state level, use of important instruments – Microscopes, Spectroscopy, SDM, and Video Spectral Comparator and Invisible Rays.
- f) Duties, code of conduct and other mandates of Forensic Scientists.

UNIT II: CRIME SCENE EVIDENCE AND MANAGEMENT 12 hours

- a) Crime scene management - types of crime scenes – indoor and outdoor; Securing and isolating the crime scene; Crime scene search methods - photography, videography, sketching and recording; Legal procedures at crime scenes and Reconstruction of crime scene.
- b) Classification of crime scene evidence – physical and trace evidence; Locard principle; Collection, labelling, sealing of evidence; Hazardous evidence and Preservation of evidence.

UNIT III: ANALYSIS OF PHYSICAL EVIDENCES**12 hours**

- a) Tool mark: Forensic importance of tool marks; Classification of tool marks; Collection, preservation and matching of tool marks and Restoration of erased serial numbers.
- b) Blood: Medico–legal importance of blood, Blood Tests- Benzidine, Phenolphthalein, Haemine crystal, Microscopic and Blood grouping.
- c) Hair: Medico-Legal importance of hair, Study of different parts of hair and difference between human and animal hair.
- d) Foot Prints: Examination Foot prints; Importance, Gait pattern, Casting of footprints in different medium and electrostatic lifting of latent footprints.

UNIT IV: FORENSIC BALLISTICS**12 hours**

- a) Firearm: History and development of firearms, Classification of firearms and Firing mechanisms of different firearms.
- b) Ammunition: Types of ammunition, Constructional features and characteristics of different types of cartridges and bullets, Primers and priming compounds, Projectiles and Different types of marks produced during firing process on cartridge (firing pin marks, breech face marks, chamber marks, extractor and ejector marks).
- c) Firearm Evidence: Matching of bullets and cartridge cases in regular firearm; Identification of bullets, pellets and wads fired from improvised, country made firearms; Bullet and cartridge case comparison and Determination of range of fire and time of fire.
- d) Explosives: meaning, types and classification

UNIT V: QUESTIONED DOCUMENT AND CURRENCY**12 hours**

- a) Documents – nature, types and characteristics; general and legal document
- b) Handwriting Identification - Basis of handwriting identification, Characteristics of handwriting – scope and application and Class and individual characteristics.
- c) Nature and Scope of Questioned Documents - Definition of questioned documents, Types of questioned documents, Preliminary examination of documents and Comparison of Documents, laboratory analysis and court permission as evidence.
- d) Legal interpretation of currency note and coins, its preparation, Examination of genuine and counterfeit coins, currency and forged notes.

Suggested Readings :

- B.R. Sharma - Forensic Science in Criminal Investigation and Trials
- B.S. Nabar - Forensic Science in Crime Investigation
- Charle's O'hara - Fundamentals of Criminal Investigation
- Paul Kirk - Crime Investigation
- Richard Saferstein - Criminalistics : An introduction to Forensic Science
- Soderman and O' connel - Modern Criminal Investigation
- Sir Gerald Burrard - Identification of Firearmes and Forensic Ballistics.
- B.S. Nabar – Fundamentals in Crime Investigation
- Anand Murthy Malaki – Aparadha Vignyana Nyayavignyanadha acharane mathu balipashu shashtra
- Gireppagowdar, B.S – Vaidyakra Nyayashastra matthu nyaya vignyana
- Reserve Bank India Act 1934
- Coinage Act 1873

II Semester B.A: LAB COURSE DSC-CRM-Pr: B

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Blood Tests- Benzidine, Phenolphthalein, Haemin Crystal, Microscopic and Blood Grouping.
2. Morphology of hair
3. Glass fracture
4. To identify the given firearms, bullet and cartridge samples
5. Preliminary examination of questioned documents.
6. Physical examination of currency notes and coins

III - Semester: B.A Degree programme in Criminology and Forensic Science DSC – CRIMINAL JUSTICE AND POLICE SCIENCE: CRM-Th: C

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: This paper is designed with objectives of acquainting the students with:

- a. *The Law and principles of Criminal Law.*
- b. *Various offences, the punishment and procedure for the offences as mentioned in the Indian Penal Code. Criminal Procedure and Evidence Act*
- c. *The Police as an important agency of the Criminal Justice System.*
- d. *The powers and duties of Police*
- e. *The procedure of investigation and Preventive measures*

UNIT I: INTRODUCTION

12 hours

- a) Judicial system in India, Importance and reforms in the justice administration.
- b) Meaning, objective and wings of Criminal justice system.
- c) Evolution of Police Administration.
- d) Prosecution organization and its relation with police.
- e) Organizational set up of police in State, Central and special units of police
- f) Salient features of Karnataka Police Act and Police Manual.

UNIT II: CRIMINAL CODES

12 hours

- a) **General explanation** - man, woman, movable property, dishonesty, fraudulently counterfeit, document, offence, life, death and good faith.
- b) **General exception** – Sec 76,82,83,84,85,87,96,97,103,106 of IPC.

- c) **Indian Penal Code**
 - i. Offences against persons – Sec 121A, 299, 300, 302, 304A, 304B, 307, 309, 319, 320, 324, 326, 351, 354, 359, 362. Sec 375 & 377 and their amendments.
 - ii. Offences against property Sec – 378, 383, 390, 391, 405, 415, 420, 441, 463, 489A, 497, 499, 503, 511.
- d) **Criminal Procedure Code** –Functionaries under the code: police, prosecutors, defense counsel and prison authorities. Sec 61-69 summons, Sec 70-72 warrant, Sec 154 FIR, Sec 173 Charge sheet , Expert Witness (291 -93) and Sec 437 provision of bail.
- e) **Indian Evidence Act** – Evidence and rules of relevancy in brief, Expert witness and Cross examination and re-examination of witnesses. Sect 32, 45, 46, 47, 57, 58, 60, 73, 135, 136, 137, 138, 141.
- f) **Constitution of India** –Preamble and Fundamental Rights Article 20, 21, 22.

UNIT III: SOCIAL LEGISLATIONS

12 hours

- a) Social legislation – its historical perspective
- b) Narcotic Drugs and Psychotropic Substances Act, Prevention of Food Adulteration Act, I.T. Act, Arms Act, Prevention of Corruption Act, Wildlife Protection Act and Environment Protection Act etc.
- c) Children in conflict with law Act, Protection of children from sexual offences Act, Dowry prohibition Act, SC & ST (Prevention of Atrocities) Act, Immoral traffic acts etc.

UNIT IV: METHODS OF POLICE INVESTIGATION

12 hours

- a) Investigation- Meaning & importance, Tools of Investigation – information, interrogation and instrumentation.
- b) General procedure of Investigation of a cognizable offence.
- c) Powers and duties of police, Qualities of Investigating Officer.
- d) Arrest, search, seizure under Cr PC
- e) Modus operandi, police dog squad

UNIT V: PRACTICAL POLICE WORK

12 hours

- a) Role of Police at the Crime scene, scientific help at the scene, handling of various types of crime scenes by police.
- b) Relationship between police and forensic expert, forensic teaching of police personals, forensic case documentation by Police and Technological Advance.
- c) Investigation & examination of various types of cases (a) Murder (b) Rape (c) Burglary (d) Railway & Air Crashes (e) Road Accidents etc.
- d) Prevention of crime - Beats, Patrol and surveillance, Community Policing, Police Public relations and Security and vigilance.

Suggested Readings :

- N. S. Sangoli - Bharat Danda Samhite
- N. S. Sangoli - Danda prakriya Samhite
- N. S. Sangoli - Bharat Saksha Adhinyam
- Omprakash Srivastava – Principles of Criminal Law
- Ratanlal R. and Dhirajlal K. - Indian Penal Code
- Ratanlal R. and Dhirajlal K. - Code of Criminal Procedure
- Ratanlal R. and Dhirajlal K. - Indian Evidence Act
- V. N. Shukla – Constitution of India
- Bayley D. H. – The Police and Political Development in India
- Charles's Ohara - Fundamentals Criminal Investigation
- Government of India Publications – 1979 – 1982 : Report of the National Police Commission.
- Government of Karnataka - Karnataka Police Act, Police Manual.
- J.C. Curry - The Indian Police
- R.V. Kelkar- Lectures on Criminal Procedure.
- T. Ramanujam. - Prevention and Detection of Crimes

III Semester B.A: LAB COURSE
DCS-CRM-Pr: C

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Preparation of Simulated Summons - To accused, to witness and to produce a document or a thing. Petty Offence
2. Preparation of Simulated Warrants - Warrant of arrest to an accused, Warrant of arrest to a witness, warrants of search a suspected place of deposit and Warrants of seizure.
3. Recording of F I R /Complaint in the prescribed form, Case Diary/Charge Sheet/ Final Report.
4. Inspection of simulated scene of crimes of Burglary, Suicide, Homicide, Motor Vehicle Accident. Location and fixing of the clues, sketching the scene of crime and reconstruction.
5. Visit to a police station to study its functioning.
6. Visit to the following institutions to study their functioning
 - a. DAR Bell of Arms.
 - b. Police Dogs Squad.
 - c. Police control room.

IV - Semester: B.A Degree programme in Criminology and Forensic Science
DSC – DECTYLOSCOPY AND DNA FINGER PRINTING:
CRM-Th: D

Marks: IA – 20, Main exam - 80 Total Marks - 100
Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04
Total number of teaching hours - 60

Objectives: This paper is designed with objectives of acquainting the students with:

- a. The history and fundamental principles of fingerprinting.*
- b. Application of Fingerprints as the most infallible means of identification.*
- c. The physical and chemical techniques of developing fingerprints on crime scene evidence.*
- d. The significance of foot and tyre prints.*
- e. The forensic significance of DNA typing.*
- f. The importance of short tandem repeats and restriction fragment length polymorphism in DNA technique.*

UNIT I: BASICS OF FINGERPRINTING **12 hours**

- a) History and development of finger prints as an identification science
- a) Central and State finger print bureau.
- b) Formation of ridges.
- c) Fundamental principles and characteristics of fingerprinting.

UNIT II: COMPARISON AND CLASSIFICATIONS **12 hours**

- a) Recording of finger prints, Taking of finger prints from living and dead persons (Plain and rolled prints).
- b) Identification and Comparison of finger prints.
- c) Henry's primary and secondary classification; Battley's single digit classification.
- d) Significance of poroscopy and edgeoscopy.

UNIT III: LATENT FINGERPRINTS **12 hours**

- a) Developing Latent fingerprints detection by physical techniques - Grey, Graphite and Anthracene powder.
- b) Mechanism of detection of fingerprints by different Chemical techniques: Ninhydrin and its analogue silver nitrate, fuming method - Iodine, Vacuum Metal Deposition (VMD) Method.
- c) Automated Fingerprint Identification System (AFIS) and application of light sources in fingerprint detection.
- d) Preserving and lifting of fingerprints, Photography of fingerprints, digital transmission, application of laser technologies, Biological methods of development of latent prints on skin.

UNIT IV: FOOTPRINTS **12 hours**

- a) Meaning, types and importance.
- b) Components and measuring of walking picture.
- c) Tracing and casting of foot prints.
- d) Electrostatic lifting of latent foot prints.

UNIT V: DNA FRINGERPRINTING (PROFILING)**12 hours**

- a) DNA (Deoxy ribo Nucleic Acid): fundamentals, structure, composition.
- b) Extraction of DNA for analysis and Evidentiary clue materials - collection of specimens.
- c) Polymerase Chain Reaction (PCR), Short Tandem Repeats (STR) - Role of fluorescent dyes, Restriction Fragment Length Polymorphism (RFLP), Touch DNA.
- d) Individuality determination – maternity and paternity issues.
- e) Role of DNA typing in identifying unclaimed bodies.

Suggested Readings :

- B.R. Sharma - Forensic Science in Criminal Investigation and Trials
- B.S. Nabar - Forensic Science in Crime Investigation
- B.C. Bridges - Practical Finger Printing
- Paul Kirk - Crime Investigation
- S.K. Chatterjee - Finger, Palm and Sole Prints
- Eshwara Yeneera – Beralu Mudregalu
- Goyal and Kapoor – Scientific aid of fingerprinting
- Surendranath – Fingerprints
- Venkiah – Law of Prints and Impressions
- Lorne Kirby : DNA Fingerprinting – An Introduction
- Lalji Singh : DNA Fingerprinting

IV Semester B.A: LAB COURSE
DSC-CRM-Pr: D

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Taking the finger prints of living persons.
2. To identify the given fingerprint pattern types.
3. To develop and examine the latent fingerprint by physical and chemical methods.
4. Comparison fingerprints
5. Classify the fingerprints by ten digit classification.
6. Tracing footprint and taking plaster cast of sunken footprints.

V - Semester: B.A Degree programme in Criminology and Forensic Science

DSE – P-I CORRECTIONAL ADMINISTRATION:

CRM-Th: E

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed with objectives of acquainting the students with:*

- a. Concepts of punishment and Correctional Administration.*
- b. Types of punishments in the past and present.*
- c. To make the students to understand about Juvenile Correctional institutions*
- d. To understand about Probation, Parole and After Care Services.*
- e. Victimology.*

UNIT I: INTRODUCTION

12 hours

- a) Historical development of Penology
- b) Meaning definition and scope of Punishment.
- c) Salient features of prison manual and act
- d) Correctional Administration.
- e) Meaning, development, and importance of Victimology.

UNIT II: PUNISHMENT

12 hours

- a) Theories of punishments – retributive, prevention, deterrence and reformatory.
- b) Types of punishments –
- c) Imprisonment and fine and forfeiture of property
- d) Corporal and capital Punishments
- e) Punishment under Indian Penal Code

UNIT III: PRISON SYSTEM

12 hours

- a) Historical development and Prison administration.
- b) Non-institutional programmes – probation, parole and after care service.
- c) Juvenile correctional institutions.
- d) Problems in correctional institutions – Homosexuality, Prison violence – human rights violation, Psychotherapy – client centered therapy and free association and Treatment of prisoners.

UNIT IV: VICTIMOLOGY

12 hours

- a) National & International thinking: UN Amnesty International, NHRC etc.
- b) Patterns of Criminal Victimization: Role of victims in Criminal Occurrence, Victim - Offender relationship.
- c) Victim typologies, Victim of abuse of power, Women and crime victimization, Children and crime victimization.
- d) Impact of Victimization- physical and financial, on family and psychological stress.

UNIT V: CRIMINAL JUSTICE SYSTEM AND COMPENSATION

12 hours

- a) Victim & Police: Lodging of FIR and recording of statement; Deposition and cross examination in courts.
- b) NGO intervention: victim-witness association, victim association.
- c) Restitution, ex-gratia payment & insurance.
- d) Victim Compensation in India: Provisions under Cr. P.C, SC ST atrocities (Prevention) Act, rape victims, industrial disasters etc.

Suggested Readings :

- Ahmed Siddique – Criminology Problems and Perspectives
- Edwin H. Sutherland and D.R.Crassey – Principles of Criminology
- H.E. Barns and N. K. Teeters – New Horizons in Criminology
- James Vadakumchery – Criminology and Penology
- Government of Karnataka Publications and Government of India Reports-Prison Manual, Prison Act, Probation of Offenders Act, Juvenile Justice Act and Mulla Committee report on Prison Reform
- Paranjape N. V - Criminology and Penology
- Dr. Srivatsava S. S. – Criminology and Criminal Administration
- Walter C. Reckless – The Crime Problem
- V. N. Rajan – Victimology in India
- Paranjape – Criminology and Penology
- Ponnaian N. – Criminology and Penology
- Rajesh M.R – Aparadhashastra mathu sudharana adalitha
- Sethna M.J. – Society and criminal
- Sirohi J.P.S – Criminology and Criminal administration

V Semester B.A: LAB COURSE, DSE-E (P – I)
CRM-Pr: E

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Visit to the following institutions to study their functioning and report writing:
 - a. Prison/ Borstal School, Observation Home, children home for boys/ children home for girls, Juvenile Home, State Home for men / State Home for women and Protective Home for women.
2. Computerised Portrait building.
3. Visit to Court of Law & Preparation of Report
4. Recent case studies on capital punishments and victims under Supreme Court guidelines.

V - Semester: B.A Degree programme in Criminology and Forensic Science

DSE – P-II MEDICAL JURISPRUDENCE AND TOXICOLOGY:

CRM-Th: E

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: This paper is designed to make the students to know:

- a. The application of Forensic Medicine and Toxicology in the field of criminal investigation*
- b. About Medical Evidence, Medical Report and other certificates*
- c. About autopsy its procedure and purpose*
- d. About poisons, their actions, antidotes etc.*

UNIT I: INTRODUCTION

12 hours

- a) Forensic Medicine
 - i. Meaning and definition.
 - ii. Importance of Forensic Medicine in the detection of Crime
 - iii. Medical Evidence, Medical Report, Certificates, Dying
 - iv. Declaration and Expert Opinion.
- b) Toxicology.
 - i. Meaning and definition.
 - ii. Classification of poisons.
 - iii. Medico- legal importance of poisons.

UNIT II: MEDICO LEGAL ASPECTS OF DEATH

12 hours

- a) Death- Meaning, modes of death, signs of death, changes after death.
- b) Difficulties experienced by I.O in the detection of crime in medico-legal cases.
- c) Inquest- Coroners, Magistrate and police, Exhumation body.
- d) Identification of living and dead.

UNIT III: AUTOPSY

12 hours

- a) Autopsy- procedure and purpose.
- b) Investigation of sexual offences – Feticide, Infanticide and Abortion.
- c) Hanging and drowning- definition, symptoms, causes and post-mortem appearances.
- d) Injuries - Types and classification of injuries, Ante mortem and post mortem injuries, aging of injuries and artificial injuries.

UNIT IV: POISON AND ANTIDOTES

12 hours

- a) Accidental, suicidal and homicidal poisonings.
- b) Signs and Symptoms of common poisons and their antidotes.
- c) Factors modifying the action of poisons.
- d) Routes of administration and elimination.
- e) Antidotes and stomach wash tube.
- f) Isolation, identification and estimation of poison from viscera.

UNIT V: STUDY OF POISONS

12 hours

- a) Symptoms, characteristics, fatal dose and fatal period.
- b) Post-mortem appearances and analysis of the following poisons:
 - i. Agricultural poisons – pesticides, fertilizers, herbicides.
 - ii. Corrosive poisons – sulphuric acid, hydrochloric acid, nitric acid.
 - iii. Metallic poisons – arsenic, mercury, lead
 - iv. Inorganic irritant poisons – phosphorus, iodine, chlorine
 - v. Organic irritant poisons – opium, datura, snake venom
 - vi. Depressants and stimulants – alcohol, caffeine
 - vii. Miscellaneous poisons – Drugs, bacterial food poisoning and mushroom.

Suggested Readings :

- A. Keithmant (Editor) 0 Taylor's Principles and Practice of Medical Jurisprudence
- C. A. Franklin (Editor) - Modi's Medical Jurisprudence and Toxicology
- Dr. R. M. Jhala and V. B. Raju - Medical Jurisprudence
- Keith Simpson - Forensic Medicine
- Parikh C. K - Medico-Legal: Post- mortems in India
- S.D.S. Grewal – Lyons Medical Jurisprudence for India
- Narayana Reddy – Forensic medicine and Toxicology
- V.V. Pillay – Forensic science and Toxicology

V Semester B.A: LAB COURSE, DSE-E (P-II)
CRM-Pr: E

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Examination of Skeletal remains for age and sex determination.
2. Identification of wounds and injuries through models and charts.
3. Visit to the following local / outside institutions to study their functioning and writing the report: Medico-legal institutions.
4. Identification of fiber
5. District Single digit Unit and Computer Portrait Building Section.

**V SEMESTER B.A SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Criminology and Forensic Science (SEC-CRM- 1E)**

(For those students who have opted Criminology and Forensic Science as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50
Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02
Total number of teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Illegal trade of wildlife
2. Concept of global crime
3. Misuses of smart phones
4. Criminal trial
5. Constitutional validity of capital punishment
6. Awareness among students regarding drugs and alcohol
7. Youth unrest
8. Mapping the crime
9. Lockup deaths
10. Working of parole board
11. Plastic money and crime
12. Autopsy witnessing
13. Global types of capital punishments
14. Participating in patrol duty along with police
15. Reference of criminology, forensic science books and preparing the report.(50 books)
16. Modus operandi at scene of crime
17. Collect the police opinion regarding the police
18. Model of forensic lab

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
-
- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
 - The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
 - The designated classes for the field work will be mentioned in the college and department time table.
 - The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
 - Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
 - The report shall contain letters of permission from the institutions and endorsement thereof as to having visited the institution for collection of information.
 - The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
 - The reports shall be evaluated at the term end examination, conducted by the Karnataka University.
 - The evaluation will also be based upon the *viva-voce*, in relation to the report.

V SEMESTER B.A GENERIC ELECTIVE

Criminology and Forensic Science [GE-CRM-1E]

(For those students who have not opted Criminology and Forensic Science as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50

Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02

Total number of teaching hours – 30

GE-1E: PRICIPLES OF CRIMINOLOGY AND PENOLOGY

UNIT I: CRIMINOLOGY.

10 hours

- a) Definition, Nature, Scope, Objectives and Relevance of criminology to contemporary society.
- b) Criminology as a Science and its relation with other social sciences
- c) Law and Criminal Law-Definition, meaning, origin and characteristics.
- d) Definition, concept, characteristics and scope of crime.
- e) Causes and types of Crime.

UNIT II: PENOLOGY

10 hours

- a) Historical development of Penology
- b) Meaning definition and scope of Punishment.
- c) Theories of punishments
- d) Correctional Administration.
- e) Juvenile correctional institutions.

UNIT III: VICTIMOLOGY

10 hours

- a) Meaning, development, and importance of Victimology
- b) Patterns of Criminal Victimization.
 - i. Victims of traditional Crimes.
 - ii. Women victims.
 - iii. Victims of violence.
- c) Victim Compensation in India.

Suggested Readings :

- M. Ponnaian – Criminology and Penology
- Paranjape N. V - Criminology and Penology
- Dr. Srivatsava S. S. – Criminology and Criminal Administration
- Rajan V N – Victimology in India
- Gireppagowdar. B.S – Aparadhashastra
- Ashoka – Aparadhashastra

VI - Semester: B.A Degree programme in Criminology and Forensic Science

DSE –: P-I SOCIOLOGY AND PSYCHOLOGY OF CRIME:

CRM-Th: F

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed to make the students:*

- a. Role of sociology and psychology in studying a criminal*
- b. Important sociological theories*
- c. Psychological disorders in criminal behaviour*

UNIT I: INTRODUCTION

12 hours

- a) Criminal sociology – society, definition, nature and characteristics.
- b) Individual and society.
- c) Criminal psychology – definition, scope and purpose.
- d) Abnormal psychology, abnormalities and criminal behaviour.

UNIT II: SOCIOLOGICAL THEORIES

12 hours

- a) Ecological and Delinquency theory - Clifford Shaw.
- b) Structural theories – Social structures and crime: Differential Association theory – E.H. Sutherland and Anomie theory - Durkheim and Merton.
- c) Sub –cultural theories: Delinquent Subculture theory- Albert Cohen and Theory of Imitation. – Gabriel Tarde.
- d) Social Process Theory: Labelling theory - Howard Becker, Containment theory – Walter Reckless, New Deviance theory - Richard Quinny.
- e) Conflict theory - Culture Conflict theory- Thorsten Sellin ; Multiple- Factor theory.

UNIT III: SOCIAL CONCEPTIONS AND ISSUES

12 hours

- a) Social disorganization, social deviation, social pathology and social change.
- b) Family and disorganization – desertion and divorce, poverty and unemployment
- c) Movies and crime, pornography and crime, mass media and crime
- d) Terrorism and criminality, communalism, Urbanization and crime.

UNIT IV: CRIMINAL BEHAVIOUR

12 hours

- a) Psychiatric theory - Mental disorders or emotional disturbance.-William Helay.
- b) Psychoanalytical theory – Instincts or underdeveloped ego, or guilt feelings, or inferiority complex- Adler Abrahamsen etc.
- c) Personality and its classification, Learning criminal behaviour - Frustration induced personality, situational factors; psychopathic personality.
- d) criminal profiling – psychometric test
- e) Application of psychology - police, court and prison.
- f) Crime – psychology of rapist and juvenile offender

UNIT V: PSYCHOLOGICAL DIORDERS AND TECHNIQUES 12 hours

- a) Emotional disturbance and crime – the Id, the ego and the super ego.
- b) Psychosis
 - i. Organic psychosis – senile psychosis, Paresis and alcoholic psychosis.
 - ii. Functional psychosis – manic depressive, schizophrenia, paranoi, melancholia.
- c) Psycho neurosis – hysteria, anxiety, obsessive (kleptomania and pyromania).
- d) Sexual deviant behavior
- e) Psychological Techniques: Polygraphy, Narco- Analysis and Brain Electrical Oscillation Signature (BEOS) Profiling: Historical aspects, Principle and Theory, General Procedure - Legal and Ethical aspects, Human rights of individual.

Suggested Readings :

- E.H. Sutherland & D.R. Cressey - Principles of Criminology, The Times of India Press, Bombay, 1965
- Harman Mannheim – Pioneers in Criminology, ISBN – 0-87585-902-X, Patterson and Smith, New Jersey – 07042.
- G.R.Madan – Social problems
- CB.Memoria – Social problems and social disorganisation
- C.N.Shankar Rao – Sociology
- Ram Ahuja – Social Problems in India
- Bhatia – General Psychology
- Colman – Abnormal Psychology
- Dennis Howitt - Forensic and Criminal Psychology
- Encyclopedia of Criminal and Deviant behavior
- Bartal, Curt R N- Criminal Behaviour: A Psychosocial Approach
- Hollin, live R Routledge & Kegan Paul - Psychology and Crime: An introduction to Criminal Psychology
- Dartmouth Aldershot - Criminal detection and psychology of crime.

VI Semester B.A: LAB COURSE, DSE-F (P-I)

CRM-Pr: F

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Intelligence test, color blindness test, test of recognition, personality test and adjustment test
2. Introvert and extrovert test, aggression test, superstition test, security – insecurity inventory, risk taking questionnaire
3. Polygraph/ lie detector - visit to Forensic Institutions.
4. Psychological observation and Kim's game
5. Visit to Dharwad Institute of Mental Health and Neuro Science.

VI - Semester: B.A Degree programme in Criminology and Forensic Science

DSE – P-II DIGITAL FORENSIC AND CYBER CRIME

CRM-Th: F

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: This paper is designed to make the students to know:

- a. *The basics of digital forensics.*
- b. *The cases which fall under the purview of digital crimes.*
- c. *The types of digital crimes.*
- d. *The elements involved in investigation of digital crimes.*
- e. *The fundamentals of cyber security.*

UNIT I: FUNDAMENTALS OF COMPUTER AND SMART PHONE

12 hours

- a) History of computer and mobile generations.
- b) General awareness of mobile and computer hardware devices, software, memory and processors.
- c) Basic operating system in smart phone and computer – Android, kitkat, MS Dos and Windows, NT/ 2000/ XP, Linux
- d) Internet: Basic setup and internet working, Forensic utility of smart phone, computer and internet.
- e) Networks – LAN, WAN and MAN.

UNIT II: COMPUTER, SMART PHONE AND CYBERCRIME 12 hours

- a) Definition, distinction between computer, smart phone crimes and conventional crimes and reasons for commission of such crimes.
- b) Different types of cybercrimes
 - i. Identity theft, cyber defamation, Hacking, Viruses, Trojan and worms, spoofing, spamming, phishing, Program and data manipulations, Software piracy, printing of Counterfeit currency and other documents.
 - ii. Cloning of mobile and SIM cards, Imaging Software (Photoshop, Photo paint etc.), logic bombs, cyber stalking, pornography, cyber terrorism, Email crimes and internet relay chat crimes, credit card information theft etc.

UNIT III: CYBER LAWS

12 hours

- a) Provisions of IT Act - 65, 66, 66A, 66B, 66C, 66D, 67, 67A, 67B, 67C, 68, 69, 70 and 71.

- b) Changes made in IPC, CrPC and Evidence Act in the light of 2008 amendment Act.
 - i. Indian Penal Code - Sec 292, 294 – obscenity, Sec 378 – theft of movable property of any data online or otherwise, Sec 424 – data theft, Sec 425 – damaging computer system and denying access, Sec 411 – dishonestly receiving information, Sec 419 – punishment for cheating by impersonation, Sec 463, 465, 468 deal with forgery for the purpose of cheating and punishment
 - ii. CrPC Sec 144 and Evidence Act – sec 65 B.

UNIT IV: INVESTIGATION OF CYBER CRIME

12 hours

- a) Seizure of computers - Seizure of suspected computer, Preparation required prior to seizure, Collection and seizure of magnetic data, Treatment of exhibits, and Extraction of information from the hard disk.
- b) Restoration of deleted files – familiarization of software, Encase, Cyber check suites, Encryption and decryption methods.
- c) Forensic examination Procedure.
- d) Password cracking and tracking users and Email.
- e) Legal and privacy issues.

UNIT V: CYBER SECURITY

12 hours

- a) Fraud detection in computer and mobile forensic: detecting fraud, technologies used for fraud detection: data mining and fraud detection.
- b) Database and its security: concepts, components and advantages of using databases. Security requirements, backup and recovery techniques, attacks on databases.
- c) Internet security system, tracing domain name or IP address, firewall security systems, browser security, wireless network security, biometric security system and website history and favorites.
- d) Digital document security; Access control, Authentication and Authorization. Information assurance and defensive measures.
- e) Security using Cryptography and Steganography.

Suggested Readings :

- R.K. Tiwari, P.K. Sastry and K.V. Ravikumar: Computer Crimes and Computer Forensics
- C.B. Leshin: Internet Investigations in Criminal Justice
- R. Saferstein: Criminalistics
- E. Casey: Digital Evidence and Computer Crime
- B.S.Nabar – Fundamental of Forensic Science
- Nina Godbole and Sunit Belapore: Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives
- William Stallings: Cryptography and Network Security: Principles and Practices
- Atul Jain: Cyber Crime: Issues, Threats and Management.
- Majid Yar: Cybercrime and Society
- Raef Meeuwisse: Cybersecurity for Beginners

VI Semester B.A: LAB COURSE, DSE-F (P-II)

CRM-Pr: F

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. To detect deletions, obliterations and modifications of files using encase software.
2. To trace routes followed by e-mails and chats.
3. To identify the IP address of the sender of e-mails.
4. To identify encrypted files.
5. To identify hidden files.
6. To acquire data from PCs/laptops/HDDs/USBs, pen drives, memory cards and SIM cards.
7. Study of cyber crime cases and report writing.

VI SEMESTER B.A SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Criminology and Forensic Science (SEC-CRM- 1F)

(For those students who have opted Criminology and Forensic Science as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50
Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02 Total number of
teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Mock courts
2. Bail procedure
3. Victim rights
4. Analysis of crime statistics
5. Use of technology in terrorism
6. Inquest procedure
7. Mock police station
8. Security system in bank
9. Conducting the interrogation sessions
10. Study of furlough and parole prescribed form
11. Smuggling of antiquities
12. Mass media and crime
13. Preparing the pre and post polygraph test questionnaire
14. Utility of artificial intelligence
15. Digital currency – bit coins
16. Analysis of 10 criminal convicted cases
17. Designing the model of single digit classification rack
18. Red corridor (naxalism)

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
 - The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
 - The designated classes for the field work will be mentioned in the college and department time table.
 - The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
 - Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
 - The report shall contain letters of permission from the institutions and endorsement thereof as to having visited the institution for collection of information.
 - The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
 - The reports shall be evaluated at the term end examination, conducted by the Karnataka University.
 - The evaluation will also be based upon the *viva-voce*, in relation to the report.

VI SEMESTER B.A GENERIC ELECTIVE

Criminology and Forensic Science [GE-CRM-1F]

(For those students who have not opted Criminology and Forensic Science as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50

Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02

Total number of teaching hours – 30

GE-1E: FUNDAMENTALS OF FORENSIC SCIENCE AND POLICE SCIENCE

UNIT 1: FOENSIC SCIENCE

10 hours

- a) History, Development of Forensic Science.
- b) Definitions, significance of Forensic Science.
- c) Pioneers in Forensic science.
- d) Principles and Branches of Forensic Science.

UNIT- II: PHYSICAL CLUES AT SCENE OF CRIME

10 hours

- a) Meaning and types of Physical clues.
- b) Scene of Crime.-Meaning and types.
- c) General idea on finger prints and Foot prints
- d) Importance of blood, Hair ,DNA, ballistics and documents

UNIT III POLICE SCIENCE

10 hours

- a) Historical development and. Organizational set up of police
- b) Qualities of investigating officer.
- c) Duties of Police under Karnataka State Police Act.
- d) Methods of Police Investigation
- e) General idea on FIR, Case Diary, and Charge Sheet.

Suggested Readings :

- Paul Kirk - Crime Investigation
- Richard Saferstein - Criminalistics : An introduction to Forensic Science
- B.S. Nabar - Fundamentals in Crime Investigation
- Gireppagowdar, B.S – Vaidyakia Nyayashastra matthu nyaya vignyana.
- J.C. Curry - The Indian Police
- R.V. Kelkar- Lectures on Criminal Procedure.
- T. Ramanujam. - Prevention and Detection of Crimes



KARNATAK UNIVERSITY, DHARWAD

B.Sc Programme

under

Choice Based Credit System

SYLLABUS FOR THE SUBJECT

FORENSIC SCIENCE AND CRIMINOLOGY

AS DSC AND SEC

Effective from 2020-21

B.Sc. Programme structure under CBCS

| Semester | *Core | | | Elective | | | Ability Enhancement Course | | | | | | Total Credits |
|----------|--------|-------|--------|----------|-------|--------|----------------------------|-------|--------|-----------------------|-------|--------|---------------|
| | DSC | | | **DSE | | | ***SEC | | | AECC | | | |
| | Course | L+T+P | Credit | Course | L+T+P | Credit | Course | L+T+P | Credit | Course | L+T+P | Credit | |
| I | DSC-1A | 4+0+4 | 4+2=6 | | | | | | | English-1 | 2+1+0 | 2+1=3 | 26 |
| | DSC-2A | 4+0+4 | 4+2=6 | | | | | | | MIL-1 | 2+1+0 | 2+1=3 | |
| | DSC-3A | 4+0+4 | 4+2=6 | | | | | | | ENVIRONMENTAL SCIENCE | 2+0+0 | 2+0=2 | |
| II | DSC-1B | 4+0+4 | 4+2=6 | | | | | | | English-2 | 2+1+0 | 2+1=3 | 26 |
| | DSC-2B | 4+0+4 | 4+2=6 | | | | | | | MIL-2 | 2+1+0 | 2+1=3 | |
| | DSC-3B | 4+0+4 | 4+2=6 | | | | | | | CONSTITUTION OF INDIA | 2+0+0 | 2+0=2 | |
| III | DSC-1C | 4+0+4 | 4+2=6 | | | | | | | English-3 | 2+1+0 | 2+1=3 | 24 |
| | DSC-2C | 4+0+4 | 4+2=6 | | | | | | | MIL-3 | 2+1+0 | 2+1=3 | |
| | DSC-3C | 4+0+4 | 4+2=6 | | | | | | | | | | |
| IV | DSC-1D | 4+0+4 | 4+2=6 | | | | | | | English-4 | 2+1=0 | 2+1=3 | 24 |
| | DSC-2D | 4+0+4 | 4+2=6 | | | | | | | MIL-4 | 2+1=0 | 2+1=3 | |
| | DSC-3D | 4+0+4 | 4+2=6 | | | | | | | | | | |
| V | | | | DSE-1E | 4+0+4 | 4+2=6 | SEC-1E | 2+0+0 | 2 | | | | 22 |
| | | | | DSE-2E | 4+0+4 | 4+2=6 | SEC-2E | 2+0+0 | 2 | | | | |
| | | | | DSE-3E | 4+0+4 | 4+2=6 | | | | | | | |
| VI | | | | DSE-1F | 4+0+4 | 4+2=6 | SEC-1F | 2+0+0 | 2 | | | | 22 |
| | | | | DSE-2F | 4+0+4 | 4+2=6 | SEC-2F | 2+0+0 | 2 | | | | |
| | | | | DSE-3F | 4+0+4 | 4+2=6 | | | | | | | |
| TOTAL | | | 72 | | | 36 | | | 08 | | | 28 | 144 |

L+T+P= Lecturing in Theory + Tutorial + Practical Hours per Week (no tutorial for practical subject).

* If the core course is Mathematics, there shall be two papers of 75 marks each. Then L+T+P = (2x3)+(2x1)+0, but credit shall be 6 only.

** Each DSE shall have at least two papers and student shall choose any one paper from each DSE.

*** SEC shall be from anyone DSC and. Study two each in 5th and 6th semester (SEC may be practical or theory for 2 credits)

Note: 1. Each DSC/DSE Shall have 60hrs syllabus / semester for 100 marks in theory (80 Sem. End exam +20 IA Exam) and 52 hrs practical/sem for 50 marks(40 Sem. End exam +10 IA Exam).

2. English/MIL Shall have 45 hrs syllabus / semester for 100 marks in theory (80 Sem. End exam +20 IA Exam).

3. Environmental Science/ Constitution of India / SEC shall have 30 hrs syllabus / semester for 50 marks in theory/ Practical (40 Sem. End exams +10 IA Exam).

Karnatak University, Dharwad
B. Sc. CBCS syllabus for Under Graduate Programme
Subject: - **FORENSIC SCIENCE AND CRIMINOLOGY AS DSC**
Effective from 2020-21

| Sem ester | Theory/ Practical | Subject Code | Instruct hrs/wk | Syllabus hrs/ Sem | Duration of Exam. | Internal Assessment Marks | Sem final Exam. Marks | Total Marks | Credits |
|-----------|--------------------|--------------------------------------|-----------------|-------------------|-------------------|---------------------------|-----------------------|-------------|---------|
| I | Theory | DSC (FSC-Th A) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC (FSC-Pr: A) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| II | Theory | DSC (FSC-Th: B) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC (FSC- Pr: B) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| III | Theory | DSC (FSC-Th: C) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC (FSC -Pr: C) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| IV | Theory | DSC (FSC -Th: D) | 04 hrs | 60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSC (FSC-Pr: D) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| V | *Theory P-I /P- II | DSE (FSC-Th P-I E FSC-Th: P-II E) | 04 hrs / 04 hrs | 60/60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSE (FSC-Pr: E) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| VI | *Theory P-I /P- II | DSE (FSC-Th P-I F FSC-Th: P-II F) | 04 hrs / 04 hrs | 60/60 | 03 hrs | 20 | 80 | 100 | 04 |
| | Practical | DSE (FSC-Pr: F) | 04 hrs | 52 | 03 hrs | 10 | 40 | 50 | 02 |
| Total | | | | | | 180 | 720 | 900 | 36 |

*Candidate shall choose either paper –I or P-II but not both in DSE theory.

**SKILL ENHANCEMENT COURSE (SEC) for
FORENSIC SCIENCE AND CRIMINOLOGY opted as DSC**

| Sem ester | Theory | Subject Code | Instruc tion hour per week | Total Syllabus Hrs/ Sem | Duration of Exam. | Internal Assess ment Marks | Sem final Exam. Marks | Total Marks | Credits |
|-----------|--------|---------------|--|----------------------------------|----------------------|-------------------------------------|--------------------------------|----------------|---------|
| V | Theory | (SEC-FSC- 1E) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| V | Theory | (SEC-FSC- 2E) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| VI | Theory | (SEC-FSC- 1F) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| VI | Theory | (SEC-FSC- 2F) | 02 hrs | 30 | 1.5 hrs | 10 | 40 | 50 | 02 |
| Total | | | 08 hrs | 120 | | 40 | 160 | 200 | 08 |

GENERAL PATTERN OF THEORY QUESTION PAPER FOR ALL THE SEMESTERS

1. Question number 1-12 carries 2marks to answer any 10 questions : 20 marks
2. Question number 13-21 carries 5marks to answer any 6 questions : 30 marks
3. Question number 22-26 carries 10marks to answer any 3 questions : 30 marks
(*for 10marks each question model would be distributed in manner
of 7+3 or 6+4 or 3+3+4)

Total: 80 marks

GENERAL PATTERN OF THEORY QUESTION PAPER FOR ALL SEC

GENERAL PATTERN FOR ALL SEC

3. Lab work/Field work/Dissertation submission : 30 marks
4. Viva voce : 10 marks

Total : 40 marks

B. Sc. Forensic Science and Criminology
CHOICE BASED CREDIT SYSTEM
Effective from 2020-21

Course Objectives

Crime is one of the major social problems. It has posed a threat to social organization. To maintain peace, harmony and social order scientific approach to this problem is need of the hour. The problem of crime can be effectively tackled with the help of different agencies of Criminal Justice like Police, Prison, Law, Court and various other agencies. The study pertaining to different agencies of Criminal Justice is scientifically studied at the graduation level in Forensic Science and Criminology.

The students are exposed in this course on various aspects of Crime, Criminality, Reformation and Rehabilitation of Criminal, Victim of Crime, Victim Compensation, Victim Assistance and Restorative Justice to the parties concerned Victim of Crime, Criminal Law, Forensic Science, Forensic Medicine and Toxicology and other branches.

Objectives of the study of this science are to make the students to understand the process of making laws, breaking of the laws, societal reaction to breaking of the laws and modern crimes.

To understand the application of science in the identification and analysis of physical clues found at the Crime Scene, Criminal and Victims.

To prepare the students to pursue their career in the State and Central Forensic Science Institutes, Law enforcement agencies and Judiciary.

To pursue their career in Social Security and Voluntary Organizations and prevent the occurrence of Crime.

SYLLABUS WITH NEW CBCS REGULATION 2020-21

I - Semester: B.Sc Degree programme in Forensic Science and Criminology

DSC - CRIMINOLOGY: FSC-Th: A

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: This paper is designed to acquaint the students with:

- g. The importance of criminology.**
- h. The causes of criminal behavior.**
- i. The consequences of crime in society.**
- j. The elements of criminal justice system.**
- k. Study of victim and victim assistance.**
- l. The causes & preventive measures of social problems**

UNIT I: INTRODUCTION

12 hours

- e) Definition, Nature, Scope and Objectives.
- f) Social, psychological and legal approaches.
- g) Criminology as a Science and its relation with other social sciences.
- h) Law and Characteristics of good law, Criminal Law-Definition, meaning, origin and characteristics.

UNIT II: CRIME AND CRIMINAL

12 hours

Crime

- d) Definition, concept and characteristics.
- e) Crime in ancient, medieval and modern society.
- f) Classification of crimes – British common law, American and IPC

Criminal

- b) Meaning and Classification - Cesare Lombroso, M. J. Sethana, Havelock Ellis and Handerson.

UNIT III: SCHOOLS OF CRIMINOLOGY

12 hours

- f) Pioneers in criminology
- g) Pre-Scientific Schools
 - i. Demonological School
 - ii. Free-Will, Classical and Neo-Classical Schools.
- h) Cartographic School and Socialistic School.
- i) Typological Schools: Lombrosian, Mental Testers and Psychiatric, physiological make up approach.
- j) Sociological – Imitation, Differential Association and Multiple Factor Approach.

UNIT IV: CAUSES AND TYPES OF CRIME**12 hours**

- e) Physical, physiological, psychological causes and crime.
- f) Social and Economic causes and crime.
- g) Political causes and crime.
- h) General idea on Professional, Habitual, Organized and White Collar criminals.

UNIT V: SOCIAL PROBLEMS: CAUSES & PREVENTIVE MEASURES.**12 hours**

- f) Social problem : concept and approaches
- g) Juvenile Delinquency
- h) Social issues of women
- i) Alcoholism and Drug addiction.
- j) Corruption

Suggested Readings :

- Ahmed Siddique – Criminology Problems and Perspectives
- Edwin H. Sutherland and D.R.Crassey – Principles of Criminology
- H.E. Barns and N. K. Teeters – New Horizons in Criminology
- James Vadakumchery – Criminology and Penology
- M. Ponnaian – Criminology and Penology
- Paranjape N. V - Criminology and Penology
- R. S. Cavan - Criminology
- Sethana J. M. J. – Society and the Criminal
- Dr. Srivatsava S. S. – Criminology and Criminal Administration
- Walter C. Reckless – The Crime Problem
- Ram Ahuja – Social Problems in India
- Gireppagowdar. B.S – Aparadhashastra
- Ashoka – Aparadhashastra

I Semester B.Sc: LAB COURSE
DSC-FSC-Pr: A

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

5. Observation of given- Picture and Simulated Scene of Crime.
6. Criminological importance and analysis from daily newspapers.
7. Handling, Packing and forwarding of physical clues to concerned expert for his opinion - Cloth with red stains, Hair, Knife, Dry stain on the floor.
8. Examination of tool marks

II - Semester: B.Sc Degree programme in Forensic Science and Criminology

DSC - CRIMINALISTICS: FSC-Th: B

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed with objectives of acquainting the students with:*

- f. The significance of forensic science to human society.*
- g. Functioning of the State Forensic Science Laboratory and State Finger Print Bureau*
- h. The physical evidences at the scene of crime*
- i. Use of Scientific aids in Criminal Investigation.*
- j. The working of the forensic establishments in India and abroad*

UNIT I: INTRODUCTION

12 hours

- g) History and Development of Forensic Science.
- h) Definitions, concepts and significance of Forensic Science.
- i) Pioneers in Forensic science.
- j) Principles and Branches of Forensic Science.
- k) Hierarchical set up of Forensic Science Laboratories at central and state level, Use of important instruments – Microscopes, Spectroscopy, SDM, and Video Spectral Comparator and Invisible Rays.
- l) Duties, Code of Conduct and other Mandates of Forensic Scientists.

UNIT II: CRIME SCENE EVIDENCE AND MANAGEMENT

12 hours

- c) Crime Scene Management - Types of crime scenes – indoor and outdoor; Securing and isolating the crime scene; Crime scene search methods - photography, videography, sketching and recording; Legal procedures at crime scenes and Reconstruction of crime scene.
- d) Classification of crime scene evidence – physical and trace evidence; Locard principle; Collection, labelling, sealing of evidence; Hazardous evidence and Preservation of evidence.

UNIT III: ANALYSIS OF PHYSICAL EVIDENCES

12 hours

- e) Tool mark: Forensic importance of tool marks; Classification of tool marks; Collection, preservation and matching of tool marks and Restoration of erased serial numbers.
- f) Blood: Medico–legal importance of blood, Blood Tests- Benzidine, Phenolphthalein, Haemine crystal, Microscopic and Blood grouping.
- g) Hair: Medico-Legal importance of hair, Study of different parts of hair

and Difference between human and animal hair.

- h) Foot Prints: Examination Foot prints; Importance, Gait pattern, Casting of footprints in different medium and electrostatic lifting of latent footprints.

UNIT IV: FORENSIC BALLISTICS

12 hours

- e) Firearm: History and development of firearms, Classification of firearms and Firing mechanisms of different firearms.
- f) Ammunition: Types of ammunition, Constructional features and characteristics of different types of cartridges and bullets, Primers and priming compounds, Projectiles and Different types of marks produced during firing process on cartridge (firing pin marks, breech face marks, chamber marks, extractor and ejector marks).
- g) Firearm Evidence: Matching of bullets and cartridge cases in regular firearm; Identification of bullets, pellets and wads fired from improvised, country made firearms; Bullet and cartridge case comparison and Determination of range of fire and time of fire.
- h) Explosives: meaning, types and classification

UNIT V: QUESTIONED DOCUMENT AND CURRENCY

12 hours

- e) Documents – nature, types and characteristics; general and legal document
- f) Handwriting Identification - Basis of handwriting identification, Characteristics of handwriting – scope and application and Class and individual characteristics.
- g) Nature and Scope of Questioned Documents - Definition of questioned documents, Types of questioned documents, Preliminary examination of documents and Comparison of Documents, laboratory analysis and court permission as evidence.
- h) Legal interpretation of currency note and coins, its preparation, Examination of genuine and counterfeit coins, currency and forged notes.

Suggested Readings :

B.R. Sharma - Forensic Science in Criminal Investigation and Trials

- B.S. Nabar - Forensic Science in Crime Investigation
- Charle's O'hara - Fundamentals of Criminal Investigation
- Paul Kirk - Crime Investigation
- Richard Saferstein - Criminalistics : An introduction to Forensic Science

- Soderman and O'Connell - Modern Criminal Investigation
- Sir Gerald Burrard - Identification of Firearms and Forensic Ballistics.
- B.S. Nabar – Fundamentals in Crime Investigation
- Anand Murthy Malaki – Aparadha Vignyana Nyayavignyanadha
acharane mathu balipashu shashtra
- Gireppagowdar, B.S – Vaidyaka Nyayashastra matthu nyaya vignyana
- Reserve Bank India Act 1934
- Coinage Act 1873

II Semester B.Sc: LAB COURSE
DSC-FSC-Pr: B

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) -**
Credits = 02

1. Blood Tests- Benzidine, Phenolphthalein, Haemin Crystal, Microscopic and Blood Grouping.
2. Morphology of hair
3. Glass fracture
4. To identify the given firearms, bullet and cartridge samples
5. Preliminary examination of questioned documents.
6. Physical examination of currency notes and coins

III - Semester: B.Sc Degree programme in Forensic Science and Criminology
DSC – CRIMINAL JUSTICE AND POLICE SCIENCE: FSC-
Th: C

Marks: IA – 20, Main exam - 80 Total Marks - 100
Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04
Total number of teaching hours - 60

Objectives: This paper is designed with objectives of acquainting the students with:

- d. The Law and principles of Criminal Law.*
- e. Various offences, the punishment and procedure for the offences as mentioned in the Indian Penal Code. Criminal Procedure and Evidence Act*
- f. The Police as an important agency of the Criminal Justice System.*
- d. The powers and duties of Police*
- e. The procedure of investigation and Preventive measures*

UNIT I: INTRODUCTION

12 hours

- g) Judicial system in India, Importance and reforms in the justice administration.
- h) Meaning, objective and wings of Criminal justice system.
- i) Evolution of Police Administration.
- j) Prosecution organization and its relation with police.
- k) Organizational set up of police in State, Central and special units of police
- l) Salient features of Karnataka Police Act and Police Manual.

UNIT II: CRIMINAL CODES

12 hours

- g) **General explanation** - man, woman, movable property, dishonesty, fraudulently counterfeit, document, offence, life, death and good faith.
- h) **General exception** – Sec 76,82,83,84,85,87,96,97,103,106 of IPC.
- i) **Indian Penal Code**
 - iii. Offences against persons – Sec 121A, 299, 300, 302, 304A, 304B, 307, 309, 319, 320, 324, 326, 351, 354, 359, 362. Sec 375 & 377 and their amendments.
 - iv. Offences against property Sec – 378, 383, 390, 391, 405, 415, 420, 441, 463, 489A, 497, 499, 503, 511.
- j) **Criminal Procedure Code** –Functionaries under the code: police, prosecutors, defense counsel and prison authorities. Sec 61-69 summons, Sec 70-72 warrant, Sec 154 FIR, Sec 173 Charge sheet , Expert Witness (291 -93) and Sec 437 provision of bail.
- k) **Indian Evidence Act** – Evidence and rules of relevancy in brief, Expert witness and Cross examination and re-examination of witnesses. Sect 32, 45, 46, 47, 57, 58, 60, 73, 135, 136, 137, 138, 141.
- l) **Constitution of India** –Preamble and Fundamental Rights Article 20, 21, 22.

UNIT III: SOCIAL LEGISLATIONS

12 hours

- d) Social legislation – its historical perspective
- e) Narcotic Drugs and Psychotropic Substances Act, Prevention of Food

Adulteration Act, I.T. Act, Arms Act, Prevention of Corruption Act, Wildlife Protection Act and Environment Protection Act etc.

- f) Children in conflict with law Act, Protection of children from sexual offences Act, Dowry prohibition Act, SC & ST (Prevention of Atrocities) Act, Immoral traffic acts etc.

UNIT IV: METHODS OF POLICE INVESTIGATION 12 hours

- f) Investigation- Meaning & importance, Tools of Investigation – information, interrogation and instrumentation.
- g) General procedure of Investigation of a cognizable offence.
- h) Powers and duties of police, Qualities of Investigating Officer.
- i) Arrest, search, seizure under Cr PC
- j) Modus operandi, police dog squad

UNIT V: PRACTICAL POLICE WORK 12 hours

- e) Role of Police at the Crime scene, scientific help at the scene, handling of various types of crime scenes by police.
- f) Relationship between police and forensic expert, forensic teaching of police personals, forensic case documentation by Police and Technological Advance.
- g) Investigation & examination of various types of cases (a) Murder (b) Rape (c) Burglary (d) Railway & Air Crashes (e) Road Accidents etc.
- h) Prevention of crime - Beats, Patrol and surveillance, Community Policing, Police Public relations and Security and vigilance.

Suggested Readings :

- N. S. Sangoli - Bharat Danda Samhite
- N. S. Sangoli - Danda prakriya Samhite
- N. S. Sangoli - Bharat Saksha Adhiniyam
- Omprakash Srivastava – Principles of Criminal Law
- Ratanlal R. and Dhirajlal K. - Indian Penal Code
- Ratanlal R. and Dhirajlal K. - Code of Criminal Procedure
- Ratanlal R. and Dhirajlal K. - Indian Evidence Act
- V. N. Shukla – Constitution of India
- Bayley D. H. – The Police and Political Development in India
- Charle's Ohara - Fundamentals Criminal Investigation
- Government of India Publications – 1979 – 1982 : Report of the National Police Commission.
- Government of Karnatak - Karnatak Police Act, Police Manual.
- J.C. Curry - The Indian Police
- R.V. Kelkar- Lectures on Criminal Procedure.
- T. Ramanujam. - Prevention and Detection of Crimes

III Semester B.Sc: LAB COURSE

DSC-FSC-Pr: C

Marks: IA 10, Main exam = 40= Total Marks 50

Total practical hours- 52

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Preparation of Simulated Summons - To accused, to witness and to produce a document or a thing. Petty Offence
2. Preparation of Simulated Warrants - Warrant of arrest to an accused, Warrant of arrest to a witness, warrants of search a suspected place of deposit and Warrants of seizure.
3. Recording of F I R /Complaint in the prescribed form, Case Diary/Charge Sheet/ Final Report.
4. Inspection of simulated scene of crimes of Burglary, Suicide, Homicide, Motor Vehicle Accident. Location and fixing of the clues, sketching the scene of crime and reconstruction.
5. Visit to a police station to study its functioning.
6. Visit to the following institutions to study their functioning
 - a. DAR Bell of Arms.
 - b. Police Dogs Squad.
 - c. Police control room.

IV - Semester: B.Sc Degree programme in Forensic Science and Criminology
DSC – DECTYLOSCOPY AND DNA FINGER PRINTING:
FSC-Th: D

Marks: IA – 20, Main exam - 80 Total Marks - 100
Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04
Total number of teaching hours - 60

Objectives: This paper is designed with objectives of acquainting the students with:

- a. The history and fundamental principles of fingerprinting.*
- b. Application of Fingerprints as the most infallible means of identification.*
- c. The physical and chemical techniques of developing fingerprints on crime scene evidence.*
- d. The significance of foot and tyre prints.*
- e. The forensic significance of DNA typing.*
- f. The importance of short tandem repeats and restriction fragment length polymorphism in DNA technique.*

UNIT I: BASICS OF FINGERPRINTING **12 hours**

- a. History and development of finger prints as an identification science
- b. Central and State finger print bureau.
- c. Formation of ridges.
- d. Fundamental principles and characteristics of fingerprinting.

UNIT II: COMPARISON AND CLASSIFICATIONS **12 hours**

- a. Recording of finger prints, Taking of finger prints from living and dead persons (Plain and rolled prints).
- b. Identification and Comparison of finger prints.
- c. Henry's primary and secondary classification; Battley's single digit classification.
- d. Significance of poroscopy and edgeoscopy.

UNIT III: LATENT FINGERPRINTS **12 hours**

- a. Developing Latent fingerprints detection by physical techniques - Grey, Graphite and Anthracene powder.
- b. Mechanism of detection of fingerprints by different Chemical techniques: Ninhydrin and its analogue silver nitrate, fuming method - Iodine, Vacuum Metal Deposition (VMD) Method.
- c. Automated Fingerprint Identification System (AFIS) and application of light sources in fingerprint detection.
- d. Preserving and lifting of fingerprints, Photography of fingerprints, digital transmission, application of laser technologies, Biological methods of development of latent prints on skin.

UNIT IV: FOOTPRINTS**12 hours**

- a. Meaning, types and importance.
- b. Components and measuring of walking picture.
- c. Tracing and casting of foot prints.
- d. Electrostatic lifting of latent foot prints.

UNIT V: DNA FRINGERPRINTING (PROFILING)**12 hours**

- a. DNA (DeoxyRibo Nucleic Acid): fundamentals, structure, composition.
- b. Extraction of DNA for analysis and Evidentiary clue materials - collection of specimens.
- c. Polymerase Chain Reaction (PCR), Short Tandem Repeats (STR) - Role of fluorescent dyes, Restriction Fragment Length Polymorphism (RFLP), Touch DNA.
- d. Individuality determination – maternity and paternity issues.
- e. Role of DNA typing in identifying unclaimed bodies.

Suggested Readings :

- B.R. Sharma - Forensic Science in Criminal Investigation and Trials
- B.S. Nabar - Forensic Science in Crime Investigation
- B.C. Bridges - Practical Finger Printing
- Paul Kirk - Crime Investigation
- S.K. Chatterjee - Finger, Palm and Sole Prints
- Eshwara Yeneera – Beralu Mudregalu
- Goyal and Kapoor – Scientific aid of fingerprinting
- Surendranath – Fingerprints
- Venkiah – Law of Prints and Impressions
- Lorne Kirby : DNA Fingerprinting – An Introduction
- Lalji Singh : DNA Fingerprinting

IV Semester B.Sc: LAB COURSE
DSC-FSC-Pr: D

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Taking the finger prints of living persons.
2. To identify the given fingerprint pattern types.
3. To develop and examine the latent fingerprint by physical and chemical methods.
4. Comparison fingerprints
5. Classify the fingerprints by ten digit classification.
6. Tracing footprint and taking plaster cast of sunken footprints.

V - Semester: B.Sc Degree programme in Forensic Science and Criminology

**DSE – P-I CORRECTIONAL ADMINISTRATION:
FSC-Th: E**

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed with objectives of acquainting the students with:*

- a. Concepts of punishment and Correctional Administration.*
- b. Types of punishments in the past and present.*
- c. To make the students to understand about Juvenile Correctional institutions*
- d. To understand about Probation, Parole and After Care Services.*
- e. Victimology.*

UNIT I: INTRODUCTION

12 hours

- a. Historical development of Penology
- b. Meaning definition and scope of Punishment.
- c. Salient features of prison manual and act
- d. Correctional Administration.
- e. Meaning, development, and importance of Victimology.

UNIT II: PUNISHMENT

12 hours

- a. Theories of punishments – retributive, prevention, deterrence and reformatory.
- b. Types of punishments –
- c. Imprisonment and fine and forfeiture of property
- d. Corporal and capital Punishments
- e. Punishment under Indian Penal Code

UNIT III: PRISON SYSTEM

12 hours

- a. Historical development and Prison administration.
- b. Non-institutional programmes – probation, parole and after care service.
- c. Juvenile correctional institutions.
- d. Problems in correctional institutions – Homosexuality, Prison violence – human rights violation, Psychotherapy – client centered therapy and free association and Treatment of prisoners.

UNIT IV: VICTIMOLOGY**12 hours**

- a. National & International thinking: UN Amnesty International, NHRC etc.
- b. Patterns of Criminal Victimizations: Role of victims in Criminal Occurrence, Victim - Offender relationship.
- c. Victim typologies, Victim of abuse of power, Women and crime victimization, Children and crime victimization.
- d. Impact of Victimization- physical and financial, on family and psychological stress.

UNIT V: CRIMINAL JUSTICE SYSTEM AND COMPENSATION**12 hours**

- a. Victim & Police: Lodging of FIR and recording of statement; Deposition and cross examination in courts.
- b. NGO intervention: victim-witness association, victim association.
- c. Restitution, ex-gratia payment & insurance.
- d. Victim Compensation in India: Provisions under Cr. P.C, SC ST atrocities (Prevention) Act, rape victims, industrial disasters etc.

Suggested Readings :

- Ahmed Siddique – Criminology Problems and Perspectives
- Edwin H. Sutherland and D.R.Crassey – Principles of Criminology
- H.E. Barns and N. K. Teeters – New Horizons in Criminology
- James Vadakumchery – Criminology and Penology
- Government of Karnataka Publications and Government of India Reports-Prison Manual, Prison Act, Probation of Offenders Act, Juvenile Justice Act and Mulla Committee report on Prison Reform
- Paranjape N. V - Criminology and Penology
- Dr. Srivatsava S. S. – Criminology and Criminal Administration
- Walter C. Reckless – The Crime Problem
- V. N. Rajan – Victimology in India
- Paranjape – Criminology and Penology
- Ponnaian N. – Criminology and Penology
- Rajesh M.R – Aparadhashastra mathu sudharana adalitha
- Sethna M.J. – Society and criminal
- Sirohi J.P.S – Criminology and Criminal administration

V Semester B.Sc: LAB COURSE, DSE-E (P – I)
FSC-Pr: E

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Visit to the following institutions to study their functioning and report writing:
 - a. Prison/ Borstal School, Observation Home, children home for boys/ children home for girls, Juvenile Home, State Home for men / State Home for women and Protective Home for women.
2. Computerised Portrait building.
3. Visit to Court of Law & Preparation of Report
4. Recent case studies on capital punishments and victims under Supreme Court guidelines.

V - Semester: B.Sc Degree programme in Forensic Science and Criminology
DSE – P-II MEDICAL JURISPRUDENCE AND TOXICOLOGY:
FSC-Th: E

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100
Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04
Total number of teaching hours - 60

Objectives: This paper is designed to make the students to know:

- a. The application of Forensic Medicine and Toxicology in the field of criminal investigation*
- b. About Medical Evidence, Medical Report and other certificates*
- c. About autopsy its procedure and purpose*
- d. About poisons, their actions, antidotes etc.*

UNIT I: INTRODUCTION

12 hours

- a. Forensic Medicine
 - i. Meaning and definition.
 - ii. Importance of Forensic Medicine in the detection of Crime
 - iii. Medical Evidence, Medical Report, Certificates, Dying
 - iv. Declaration and Expert Opinion.
- b. Toxicology.
 - iv. Meaning and definition.
 - v. Classification of poisons.
 - vi. Medico- legal importance of poisons.

UNIT II: MEDICO LEGAL ASPECTS OF DEATH

12 hours

- a. Death- Meaning, modes of death, signs of death, changes after death.
- b. Difficulties experienced by I.O in the detection of crime in medico-legal cases.
- c. Inquest- Coroners, Magistrate and police, Exhumation body.
- d. Identification of living and dead.

UNIT III: AUTOPSY

12 hours

- a. Autopsy- procedure and purpose.
- b. Investigation of sexual offences – Feticide, Infanticide and Abortion.
- c. Hanging and drowning- definition, symptoms, causes and post-mortem appearances.
- d. Injuries - Types and classification of injuries, Ante mortem and post mortem injuries, aging of injuries and artificial injuries.

UNIT IV: POISON AND ANTIDOTES

12 hours

- a. Accidental, suicidal and homicidal poisonings.
- b. *Signs and Symptoms of common poisons and their antidotes.*
- c. Factors modifying the action of poisons.
- d. Routes of administration and elimination.
- e. Antidotes and stomach wash tube.
- f. Isolation, identification and estimation of poison from viscera.

UNIT V: STUDY OF POISONS

12 hours

- a. Symptoms, characteristics, fatal dose and fatal period.
- b. Post-mortem appearances and analysis of the following poisons:
 - i. Agricultural poisons – pesticides, fertilizers, herbicides.
 - ii. Corrosive poisons – sulphuric acid, hydrochloric acid, nitric acid.
 - iii. Metallic poisons – arsenic, mercury, lead
 - iv. Inorganic irritant poisons – phosphorus, iodine, chlorine
 - v. Organic irritant poisons – opium, datura, snake venom
 - vi. Depressants and stimulants – alcohol, caffeine
 - vii. Miscellaneous poisons – Drugs, bacterial food poisoning and mushroom.

Suggested Readings :

- A. Keithmant (Editor) 0 Taylor's Principles and Practice of Medical Jurisprudence
- C. A. Franklin (Editor) - Modi's Medical Jurisprudence and Toxicology
- Dr. R. M. Jhala and V. B. Raju - Medical Jurisprudence
- Keith Simpson - Forensic Medicine
- Parikh C. K - Medico-Legal: Post- mortems in India
- S.D.S. Grewal – Lyons Medical Jurisprudence for India
- Narayana Reddy – Forensic medicine and Toxicology
- V.V. Pillay – Forensic science and Toxicology

V Semester B.Sc : LAB COURSE, DSE-E (P-II)
FSC-Pr: E

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. Examination of Skeletal remains for age and sex determination.
2. Identification of wounds and injuries through models and charts.
3. Visit to the following local / outside institutions to study their functioning and writing the report: Medico-legal institutions.
4. Identification of fiber
5. District Single digit Unit and Computer Portrait Building Section.

V SEMESTER B.Sc SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Forensic Science and Criminology (SEC-FSC- 1E)

(For those students who have opted Forensic Science and Criminology as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50
Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02
Total number of teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Criminal trial
2. Mock courts
3. Constitutional validity of capital punishment
4. Victim rights
5. Working of probation officer
6. Bail procedure
7. Theory of probability in fingerprint evidence
8. Concept of global crime
9. Analysis of crime statistics
10. Post crime status of victim
11. Workshop on why one becomes the victim of crime
12. Misuses of smart phones
13. Constitutional validity of some forensic techniques
14. Use of technology in terrorism
15. Illegal trade of wildlife
16. Preventing the suicidal tendencies through counseling

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
-
- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
 - The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
 - The designated classes for the field work will be mentioned in the college and department time table.
 - The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
 - Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
 - The report shall contain letters of permission from the institutions and endorsement thereof as to having visited the institution for collection of information.
 - The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
 - The reports shall be evaluated at the term end examination, conducted by the Karnataka University.
 - The evaluation will also be based upon the *viva-voce*, in relation to the report.

**V SEMESTER B.Sc SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Forensic Science and Criminology (SEC-FSC- 2E)**

(For those students who have opted Forensic Science and Criminology as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50

Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02

Total number of teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Lockup deaths
2. Inquest procedure
3. Working of parole board
4. Mock police station
5. Designing the models of community policing and area policing
6. Recording the 10 digit fingerprints
7. Determination of impact in a broken glass
8. Security system in bank
9. Brain mapping
10. Mapping the crime
11. Biological warfare
12. Moral policing
13. Criminalization of politics in India
14. Awareness among students regarding drugs and alcohol
15. Youth unrest
16. Speed calculation with help of skid mark

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
-
- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
 - The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
 - The designated classes for the field work will be mentioned in the college and department time table.
 - The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
 - Finalization and submission of the report will have to take place at least one week before the scheduled university practical examination.
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 - The copies of the filled in questionnaires will have to be submitted in a separate file in case if the student has used the survey method.
 - The reports shall be evaluated at the term end examination, conducted by the Karnataka University.
 - The evaluation will also be based upon the *viva-voce*, in relation to the report.

VI - Semester: BSc Degree programme in Forensic Science and Criminology

**DSE –: P-I SCIENTIFIC FORENSIC TECHNIQUES
CRM-Th: F**

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100

Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04

Total number of teaching hours - 60

Objectives: *This paper is designed to make the students:*

- a. The significance of microscopy in visualizing trace evidence and comparing it with control samples.*
- b. The usefulness of photography and videography for recording the crime scenes.*
- c. The importance of chromatographic and spectroscopic techniques in processing crime scene evidence.*

UNIT I: INTRODUCTION

12 hours

- a) Importance and application of scientific techniques in forensic science
- b) Application of Artificial intelligence in forensic science
- c) Role of scientific techniques in establishing a crime

UNIT II: MICROSCOPY

12 hours

- a) Fundamental principles.
- b) Different types of microscopes: Simple microscope, research microscope, binocular microscope, Comparison Microscope, Electron microscope and Scanning Electronic Microscope (SEM).
- c) Magnification and Resolution.
- d) Transmission Electron Microscopy (TEM), Stereomicroscope Polarization and application Forensic applications of microscopy.
- e) Stereo-zoom Microscopy, Video Spectral Comparator (VSC) and Electrostatic Detection Apparatus (ESDA)
- f) Softwares of fingerprints, classification and detection of cyber crimes

UNIT III: FORENSIC PHOTOGRAPHY**12 hours**

- a) Basic principles and applications of photography in forensic science.
- b) Photographic evidence.
- c) 3D photography, Infrared and ultraviolet photography, Digital photography, Videography and CCTVs.
- d) Crime scene and laboratory photography.

UNIT IV: SPECTROSCOPIC TECHNIQUES**12 hours**

- a) Introduction, Review of Spectroscopic.
- b) Fundamental principles and Instrumentation and Techniques, Qualitative and Quantitative methods.
- c) Ultraviolet-visible spectroscopy, Infrared spectroscopy, atomic absorption spectroscopy, Atomic emission spectroscopy and Mass spectroscopy.
- d) Colorimetric analysis and Lambert-Beer law, Forensic Applications.

UNIT V: CHROMATOGRAPHIC AND ELECTRO AND RADIO ANALYTICAL TECHNIQUES**12 hours**

- a) Fundamental principles and forensic applications of thin layer chromatography, gas chromatography and liquid chromatography.
- b) Sample preparation for chromatographic and spectroscopic evidence.
- c) Chromatographic methods.
- d) X-ray spectrometry.
- e) Electrophoresis – fundamental principles and forensic applications.
- f) Neutron activation analysis – fundamental principles and forensic applications.

Suggested Readings :

- W. Kemp - Organic Spectroscopy
- J.W. Robinson - Undergraduate Instrumental Analysis
- D.R. Redsicker - The Practical Methodology of Forensic Photography
- Yinon - Forensic Application of Mass Spectrometry
- Wouldard H. H. - Instrumental Methods of Analysis
- Moonesens A. A. - Scientific Evidence in Criminal Cases
- Curry - Analytical Methods in Human Toxicology
- Lee & Gaensslen - Advances in Forensic Science, (Vol. 2) Instrumental Analysis.
- Settle, F. A. - Handbook of Instrumental Techniques for Analytical Chemistry

VI Semester B.Sc: LAB COURSE, DSE-F (P-I)
FSC-Pr: F

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. To carry out thin layer chromatography of ink samples.
2. To carry out separation of organic compounds by paper chromatography.
3. To identify drug samples using UV-Visible spectroscopy.
4. To take photographs of crime scene exhibits at different angles.
5. To record videography of a crime scene.
6. Students would make a visit to Forensic Science Laboratory and they would submit assignments on the organizational setup and working of different divisions of FSL/ CFSL.
7. Demonstration of some forensically important instruments
Like UV- vis/ FTIR and AAS etc

VI - Semester: B.Sc Degree programme in Forensic Science and Criminology
DSE – P-II DIGITAL FORENSIC AND CYBER CRIME
FSC-Th: F

(Candidate shall choose either Paper-I or paper-II)

Marks: IA – 20, Main exam - 80 Total Marks - 100
Exam Duration: 03 Hrs - Teaching Hours - 04 Hrs/week Credits – 04
Total number of teaching hours - 60

Objectives: This paper is designed to make the students to know:

- a. *The basics of digital forensics.*
- b. *The cases which fall under the purview of digital crimes.*
- c. *The types of digital crimes.*
- d. *The elements involved in investigation of digital crimes.*
- e. *The fundamentals of cyber security.*

UNIT I: FUNDAMENTALS OF COMPUTER AND SMART PHONE

12 hours

- a. History of computer and mobile generations.
- b. General awareness of mobile and computer hardware devices, software, memory and processors.
- c. Basic operating system in smart phone and computer – Android, kitkat, MS Dos and Windows, NT/ 2000/ XP, Linux
- d. Internet: Basic setup and internet working, Forensic utility of smart phone, computer and internet.
- e. Networks – LAN, WAN and MAN.

UNIT 2 COMPUTER, SMART PHONE AND CYBERCRIME

12 hours

- a. Definition, distinction between computer, smart phone crimes and conventional crimes and reasons for commission of such crimes.
- b. Different types of cybercrimes
 - i. Identity theft, cyber defamation, Hacking, Viruses, Trojan and worms, spoofing, spamming, phishing, Program and data manipulations, Software piracy, printing of Counterfeit currency and other documents.
 - ii. Cloning of mobile and SIM cards, Imaging Software (Photoshop, Photo paint etc.), logic bombs, cyber stalking, pornography, cyber terrorism, Email crimes and internet relay chat crimes, credit card information theft etc.

UNIT III: CYBER LAWS

12 hours

- a. Provisions of IT Act - 65, 66, 66A, 66B, 66C, 66D, 67, 67A, 67B, 67C, 68, 69, 70 and 71.
- b. Changes made in IPC, CrPC and Evidence Act in the light of 2008 amendment Act.

- i. Indian Penal Code - Sec 292, 294 – obscenity, Sec 378 – theft of movable property of any data online or otherwise, Sec 424 – data theft, Sec 425 – damaging computer system and denying access, Sec 411 – dishonestly receiving information, Sec 419 – punishment for cheating by impersonation, Sec 463, 465, 468 deal with forgery for the purpose of cheating and punishment
- ii. CrPC Sec 144 and Evidence Act – sec 65 B.

UNIT IV: INVESTIGATION OF CYBER CRIME

12 hours

- a. Seizure of computers - Seizure of suspected computer, Preparation required prior to seizure, Collection and seizure of magnetic data, Treatment of exhibits, and Extraction of information from the hard disk.
- b. Restoration of deleted files – familiarization of software, Encase, Cyber check suites, Encryption and decryption methods.
- c. Forensic examination Procedure.
- d. Password cracking and tracking users and Email.
- e. Legal and privacy issues.

UNIT V: CYBER SECURITY

12 hours

- a. Fraud detection in computer and mobile forensic: detecting fraud, technologies used for fraud detection: data mining and fraud detection.
- b. Database and its security: concepts, components and advantages of using databases. Security requirements, backup and recovery techniques, attacks on databases.
- c. Internet security system, tracing domain name or IP address, firewall security systems, browser security, wireless network security, biometric security system and website history and favorites.
- d. Digital document security; Access control, Authentication and Authorization. Information assurance and defensive measures.
- e. Security using Cryptography and Steganography.

Suggested Readings :

- R.K. Tiwari, P.K. Sastry and K.V. Ravikumar: Computer Crimes and Computer Forensics
- C.B. Leshin: Internet Investigations in Criminal Justice
- R. Saferstein: Criminalistics
- E. Casey: Digital Evidence and Computer Crime
- B.S.Nabar – Fundamental of Forensic Science
- Nina Godbole and Sunit Belapore: Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives
- William Stallings: Cryptography and Network Security: Principles and Practices
- Atul Jain: Cyber Crime: Issues, Threats and Management.
- Majid Yar: Cybercrime and Society
- Raef Meeuwisse: Cybersecurity for Beginners

VI Semester B.Sc: LAB COURSE, DSE-F (P-II)
FSC-Pr: F

Marks: IA 10, Main exam = 40= Total Marks 50

Teaching Hours - 04 Hrs/week

Exam Duration: 03 Hrs

Total practical hours- 52

***Each practical is of 4 hours duration (2hours practical = 01 credit) - Credits = 02**

1. To detect deletions, obliterations and modifications of files using encase software.
2. To trace routes followed by e-mails and chats.
3. To identify the IP address of the sender of e-mails.
4. To identify encrypted files.
5. To identify hidden files.
6. To acquire data from PCs/laptops/HDDs/USBs, pen drives, memory cards and SIM cards.
7. Study of cyber crime cases and report writing.

**VI SEMESTER B.Sc SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Forensic Science and Criminology (SEC-FSC- 1F)**

(For those students who have opted Forensic Science and Criminology as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50
Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02
Total number of teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Conducting the interrogation sessions
2. Preparing the pre and post polygraph test questionnaire
3. Participating in patrol duty along with police
4. Study of furlough and parole prescribed form
5. Autopsy witnessing
6. Arranging the slips as per 10 digit classification system in a rack
7. Reference of criminology, forensic science books and preparing the report.(50 books)
8. Study of nature of crimes in banks
9. Plastic money and crime
- 10.Digital investigation - virtual scene of crime
- 11.Global types of capital punishments
- 12.Sketching the college campus
- 13.Smuggling of antiquities
- 14.Police reforms in India
- 15.Khap panchayats
- 16.Mass media and crime

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
-
- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
 - The student will have to attend the designated classes and the teacher assigned will conduct the contact session in relation to the research methods to his/her assigned students.
 - The designated classes for the field work will be mentioned in the college and department time table.
 - The contact sessions will be deemed to be a part of the practical workload of the designated teacher.
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 - The reports shall be evaluated at the term end examination, conducted by the Karnataka University.
 - The evaluation will also be based upon the *viva-voce*, in relation to the report.

**VI SEMESTER B.Sc SKILL ENHANCEMENT COURSE
(SEC) COMPULSORY PAPER LAB WORK/FIELD
WORK / DISSERTATION
SEC - Forensic Science and Criminology (SEC-FSC- 2F)**

(For those students who have opted Forensic Science and Criminology as one of the subject)

Marks: IA – 10, Main exam - 40 Total Marks - 50

Exam Duration: 01Hr 30 Min - Teaching Hours - 02 Hrs/week Credits – 02

Total number of teaching hours – 30

LAB WORK/FIELD WORK/DISSERTATION TOPICS

1. Collect the police opinion regarding the police
2. Suggesting the model for criminal cases classification and recording
3. Modus operandi at scene of crime
4. Forensic Odontology
5. Designing the model of single digit classification rack
6. Listing the criminological journals and briefing
7. Model of forensic lab
8. Utility of artificial intelligence
9. Digital currency – bit coins
10. Block chain technology
11. Red corridor (naxalism)
12. Witch hunting
13. Money laundering
14. Crime against transgender and their rights
15. Establishing the counseling centers in the department by students
16. Analysis of 10 criminal convicted cases

STUDY METHODOLOGY:

The students are given an option to select one of the above mentioned topics. During the allocated session, the topic will have to be studied and a specific methodology is to be followed:

1. Selection of the topic
 2. Study the topic to evolve the statement of the problem
 3. Literature survey
 4. Methodology
 5. Collection of data or information on the institution or case (depending upon the topic and method)
 6. Analysis and interpretation of the data.
 7. Findings and conclusions.
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- Each of the students will be assigned a study supervisor.
 - The pedagogy to be followed is to mentor the student, review progress and suggest corrections.
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