



**RANI CHANNAMMA UNIVERSITY,
VIDYASANGAMA BELAGAVI**

**UNDER GRADUATE PROGRAMME
(Three Major Subjects with Practical)**

BSc. Criminology and Forensic Science

Semester I – VI

**DISCIPLINE SPECIFIC CORE COURSE (DSC) FOR SEM I -VI,
SKILL ENHANCEMENT COURSE(SEC)FOR SEMIV/V/VI and
ELECTIVE COURSES FOR SEM V AND VI**

w.e.f

Academic Year 2024-25 onwards.

**Chairperson
UG Board of Studies
Criminology and Forensic Science
Rani Channamma University
Belagavi**

**Dean
Faculty of Science
Rani Channamma University
Belagavi**

RANI CHANNAMMA UNIVERSITY
B.Sc. in Forensic Science and Criminology
Effective from 2024-25

Sem.	Type of Course	Theory/ Practical	Course Code	Course Title	Instructi on hour/we ek	Total hours / sem	Duration of Exam	Marks			Credits
								Formative	Summat ive	Total	
I	DSC-1	Theory	C1FSC1T1	Introduction to Criminology	04hrs	60	03hrs	20	80	100	04
	DSC-2	Practical	C1FSC1P1	Crime Data Analysis	04hrs	56	03hrs	10	40	50	02
II	DSC-3	Theory	C2FSC1T1	Fundamental of Forensic Science	04hrs	60	03hrs	20	80	100	04
	DSC-4	Practical	C2FSC1P1	Scene of Crime Investigation	04hrs	56	03hrs	10	40	50	02
III	DSC-5	Theory	C3FSC1T1	Police Science	04hrs	60	03hrs	20	80	100	04
	DSC-6	Practical	C3FSC1P1	Criminal Investigation	04hrs	56	03hrs	10	40	50	02
IV	DSC-7	Theory	C4FSC1T1	Criminal Law and Penology	04hrs	60	03hrs	20	80	100	04
	DSC-8	Practical	C4FSC1P1	Criminal Justice Institutions Visits	04hrs	56	03hrs	10	40	50	02
*V	DSC-9A	Theory	C5FSC2T1	Forensic Medicine and Toxicology	04hrs	60	03hrs	20	80	100	04
	DSC-10A	Practical	C5FSC2P1	Medico legal Examination and Digital Forensic Investigation	04hrs	56	03hrs	10	40	50	02
	DSC-9B	Theory	C5FSC2T2	Digital Forensic and Cyber Crime	04hrs	60	03hrs	20	80	100	04
*VI	DSC-11A	Theory-	C6FSC2T1	Forensic Documents and Ballistics	04hrs	60	03hrs	20	80	100	04
	DSC-12A	Practical	C6FSC2P1	Questioned Documents and Ballistics and Fingerprint Analysis	04hrs	56	03hrs	10	40	50	02
	DSC-11B	Theory-	C6FSC2T2	Dactyloscopy and DNA Fingerprinting	04hrs	60	03hrs	20	80	100	04
III	EC-1	Theory	C5FSC5T1	Crime Scene Management	03hrs	45	03hrs	20	80	100	03
IV	EC-2	Theory	C6FSC5T1	Forensic Tools and Techniques	03hrs	45	03hrs	20	80	100	03
IV/V/VI **	Skill	Practical	C0FSC6T1	Study of Marks and impression	04hrs	56	03hrs	10	40	50	02

*Student shall either opt DSC 9A and DSC10A or DSC 9B and DSC10B in 5th semester. Similarly, DSC 11A and DSC12A or DSC 11B and DSC12B in 6th semester.

** Student shall study Skill of this subject either in 4th / 5th / 6th but not in all the semester.

Rani Channamma University, Belagavi

B.Sc.in Forensic Science and Criminology

Programme Specific Outcomes (PSO):

On completion of the 03 years Degree in Criminology and Forensic Science students will be able to:

- Demonstrate, solve and understand the major concepts in all the disciplines of Criminology and Forensic Science
- Understand practical skills so that they can understand and assess risks and work safely and competently in the laboratory.
- To apply standard methodology to the solutions of problems in the concerned field
- Provide students with the ability to plan and carry out experiments independently and assess the significance of outcomes.
- Develop in students the ability to adapt and apply methodology to the solution of unfamiliar types of problems.
- Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of crime investigations.
- To build confidence in the candidate to be able to work on his own in industry and institution of higher education.
- To develop an independent and responsible work ethics.
- The basic concept of forensic science and the organizational setup of forensic science laboratories in India.
- Methods of securing, searching, and documenting the scene of crime.
- The significance of physical (including forensic ballistics), toxicological, and biological evidence in criminal investigation.
- The preliminary examination of arson, toxicological, blood and vitriolage related exhibits.
- The significance of the questioned document and fingerprint examination.

B.Sc. Semester-I

Discipline Specific Course (DSC-1)

Course Title: -INTRODUCTION TO CRIMINOLOGY

Course Code: C1FSC1T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-1	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs): At the end of the course students will be able to:

- CO1: Explain the history, origin, scope and definition of crime, its relevance in the present scenario and its relation to other social sciences.
- CO2: Understand the interdisciplinary nature of Criminology and the role of criminologist in the criminal justice system.
- CO3: Describe the different schools of Criminology and critically identify the contribution of each school of thought for the growth and development of Criminology.
- CO4: Describe the different typologies of crime including crimes against body, crimes against property, contemporary crimes like cyber crime, white-collar crime, etc.

Unit	Course Title: INTRODUCTION TO CRIMINOLOGY	60 hrs/sem
Unit I	HISTORICAL PERSPECTIVE Meaning, Definitions, Nature, Origin and Scope of Criminology Historical Development of Criminology Importance of Criminology Criminology as a Science Interdisciplinary nature of Criminology and its relations with Penology, Sociology, Psychology, Criminal Law and Forensic science.	15hrs
Unit II	CONCEPT OF CRIME AND CRIMINAL Crime: Meaning and Definitions Difference between Crime, Sin, Vice and Tort Classification of Crimes: i) Indian, British Common Law and American. ii) Cyber-Crime: concept and Types iii) Corporate Crime: concept and Types Criminal: Meaning and Definitions Classification of Criminal: Cesare Lombroso, M J Sethana, Havelock Ellis and Handerson Criminal Patterns: Professional, Habitual, White Collar and Organized Criminals	15hrs
Unit III	SOCIAL PROBLEMS AND CRIME Social Problems: Meaning and Definitions Social issues of Women and children Alcoholism and Drug Addiction Corruption, Terrorism and Social Discrimination	15hrs

Unit IV	<p style="text-align: center;">CAUSES AND PREVENTION OF CRIME</p> <ul style="list-style-type: none"> • Causes: Individual-Family, Socio-Economic, Political, Psychological, Biological and Environmental. • Prevention of Crime: Primary, Secondary and Tertiary. • Crime Prevention through Environmental Design (CPTED) • Crime Prevention by Police and Crime Prevention Organizations 	15hrs
---------	--	-------

References:

1. Hagan F. E. Daigle L. E. (2018). *Introduction to Criminology: Theories, Methods, and Criminal Behavior*, SAGE Publications.
2. Siegel, Larry J. (2019). *Criminology: the core*, Australia: Cengage.
3. Sutherland Edwin H. and Crassey D.R.(1965). *Principles of Criminology*, Times of India Press, Bombay.
4. Cavan R. S. (1962). *Criminology*, Thomas Y. Crowell Company, New York.
5. Robert Lilly J., Cullen F. T., Ball R. A., (2018). *Criminological Theory: Context and Consequences*, SAGE Publications.
6. Sethana J. M. J. (1989). *Society and the Criminal*, N. M. Tripathi Pvt. Ltd., Bombay.
7. Ahuja Ram, (2000). *Criminology*, Rawat Publications, New Delhi.
8. Reid, Sue Titus. (2006), *Crime & Criminology*, New York: McGraw-Hill.
9. Paranjape N. V. (2005). *Criminology and Penology*, Central Law Publications, Allahabad.
10. Alison Liebling, Shadd Maruna, and Lesley McAra. (2017). *The Oxford Handbook of Criminology*, (6th edn), Oxford University Press.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
Internal Assessment Test 1	05
Internal Assessment Test 2	05
Assignment	10
Total	20 Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester-I

Discipline Specific Course (DSC-2)

Course Title: CRIME DATA ANALYSIS

Course Code: C1FSC1P1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-2	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1 : To identify the crime news

CO 2 : Practice to collection of crime news clipping

CO 3 : To understand different types of crime through experiments

CO 4 : To understand crimes of different place

List of the Experiments

1. Analysis of News Items of Criminological Importance.
2. The Daily News Paper analysis
3. Case study of crime news
4. Collection of Crime News Clippings
5. Classification of crimes
6. Types of cyber crimes
7. Crime statistics analysis
8. Crime against person
9. Crime against property
10. Motor Vehicle theft
11. Graphical Representation of Crime Statistics
12. Study of Traffic Signs and Symbol
13. Kim's Game: Observation, Retention, Memory and Interpretation

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical Record Book	05 marks
Experiment based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester– II

Discipline Specific Course(DSC-3)

Course Title:- FUNDAMENTALS OF FORENSIC SCIENCE

Course Code: C2FSC1T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-3	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

- CO1: Understand the definition, scope and basic principles of Criminalistics, exhibit the various tools and techniques utilized in the application of the subject.
- CO2: Explain the significance of evidence, types and classification of physical evidences such as blood, fibre, paint, firearms, fingerprints, etc.
- CO3: Examine the forensic documents, tools and techniques employed, types of forgeries, types of handwriting and its characteristics, etc.
- CO4: Explain the basic principles and stages involved in crime scene reconstruction.

Unit	Course Title: FUNDAMENTALS OF FORENSIC SCIENCE	60 hrs/sem
Unit I	INTRODUCTION TO FORENSIC SCIENCE Forensic Science: Meaning, Definition, Nature and Scope. History and Development of Forensic Science. Principles of Forensic Science. Pioneers of Forensic science and Branches Importance and Application of forensic science.	15 hrs
Unit II	PHYSICAL EVIDENCE Physical Evidence: Meaning and Importance Types of evidence: Conclusive and corroborative Classification of Physical Evidence: viz., Blood, Saliva, Semen, Hair, Fiber, Paint, Tyre Marks, Fingerprints, Footprints, Bite Marks. DNA Profiling: Concept and Importance.	15 hrs
Unit III	FORENSIC SCIENCE LABORATORIES AND INSTITUTIONS Forensic science laboratories: historical development Administration of state and central forensic science laboratories Divisions of forensic science laboratories Finger print bureau: functions and importance Chemical examiners and serologist, The security printing & minting Corporation of India	15 hrs
Unit IV	CRIME SCENE RECONSTRUCTION (CSR) Nature and Importance of CSR Basic Principles and Stages and Involved Type and Classification of Reconstruction Role of Logic in CSR and Writing the Construction Report Cases of Special Importance Pertaining to Forensic examination	15hrs

References:

1. James S. H., Nordby J. J., and Suzanne Bell., (2014). *Forensic Science: An Introduction to Scientific and Investigative Techniques*, Boca Raton, Florida : CRC Press/Taylor & Francis Group.
2. Richard Saferstein. (2017). *Criminalistics: An Introduction to Forensic Science*, Pearson Education.
3. Sharma, J. D. (1988). *Forensic Science and Toxicology*, Lawyers Home, Indore
4. Richard Saferstein.(2009). *Forensic Science: from the crime scene to the crime lab*, Upper Sadder River, N. J.: Pearson Prentice Hall.
5. Bertino, Anthony J. (2016). *Forensic Science: fundamentals & investigations*, Boston, MA : Cengage Learning.
6. Nabar, B. S. (2003). *Forensic Science in Crime Investigation*, Hyderabad, India: Asia Law House Hyderabad.
7. Sharma, B R. (2014). *Forensic Science in Criminal Investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
8. Nanda, B. B, (2001). *Forensic Science in India*, Select Publishers, New Delhi.
9. Krishnamurthy, R. (2011). *Introduction to Forensic Science in Crime Investigation*, India: Selective & Scientific Books.
10. Harris H. A., Henry C. Lee. (2019). *Introduction to Forensic Science and Criminalistics*, (2nd edn), eBook Publication, Boca Raton.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester-II

Discipline Specific Course(DSC-4)

Course Title: SCENE OF CRIME INVESTIGATION

Course Code: C2FSC1P1

Type of Course	Theory /Practical	Credits	Instruction hour per week	TotalNo.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-4	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1 : to identify the Physical evidences

CO 2 : practice on Basic Forensic Science Equipment

CO 3 : to understand different types of Scene of crime

CO 4 : to understand crimes of different place

List of the Experiments

1. Scene of crime types
2. Photography of Crime Scene
3. Sketch (rough and neat) the scene of Crime.
4. Searching, Locating and Fixing of the Clues
5. Crime scene measurement types
6. Collection and Preservation of Physical Evidences
7. Inspection of Simulated Scene of Crimes of Burglary
8. Simulated Scene of Crimes of Homicide
9. Simulated Scene of Crimes of Suicide.
10. Inspection of Outdoor Scene of Crime: Simulated Motor Vehicle Accident Case
11. Crime scene report writing
12. Reconstruction of Crime Scene

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical Record Book	05 marks
Experiment based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester–III

Discipline Specific Course (DSC 5)

Course Title: -POLICE SCIENCE

Course Code: C3FSC1T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-5	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs): At the end of the course students will be able to:

- CO1: Understand the concept and purpose of Police Science and its importance in crime prevention, investigation and maintaining social order peacefully.
- CO2: Develop the knowledge regarding the Police Administration, Enforcement of Laws of the nation, Maintaining the Law and Order.
- CO3: Understanding the various challenges faced by police in their day to day policing.
- CO4: Become aware about the different types of crime scenes, investigations and their related legal procedures.

Unit	Course Title: POLICE SCIENCE	60 hrs/sem
Unit I	<p>INTRODUCTION OF POLICE SCIENCE</p> <p>Police System: Concept and Historical Development in India. State and Central Police Organization. International Police Organization. Recruitment and Training of Police. Police station: Meaning, Types and Structure.</p>	15 hrs
Unit II	<p>POLICE UNITS AND THEIR FUNCTIONS</p> <p>State Police Units: i). Civil, Reserve, Traffic, Coastal, Fire, Technical wings. ii). Dogs Squad, and Crime Record Statistics. Central Police Units: i). Armed Reserved, BSF, CISF, CRPF, ITBP, NSG, SSB, ii) RAW, CBI, NCB, NIA, BPR&D and NCRB.</p>	15 hrs
Unit III	<p>POWERS AND FUNCTIONS OF POLICE</p> <p>Qualities of Investigating Officer. Registration of Cases: Recording of FIR, Case Diary and Charge Sheet. Investigation: i) Meaning and Importance. ii). Tools of Investigation: Information, Interrogation and Instrumentation. Executive Powers and duties of Police in Arrest, Search, Seizure Under Bharatiya Nagarik Suraksha Sanhita (BNSS).</p>	15 hrs

Unit IV	<p style="text-align: center;">PREVENTION OF CRIME</p> <p>Beat, Patrol and Surveillance. Community Policing. Police-Public relations. Security and Vigilance. Modus Operandi Bureau. Advance Technology in Policing.</p>	15hrs
---------	--	-------

References:

1. Cox S. M., Marchionna S. and Fitch B. D. (2016). *Introduction to Policing*, SAGE Publicatons.
2. Cordner G. W. (2019). *Police Administration*, 10th edn, New York, eBook.
3. Horder J. (2022). *Ashworth's Principles of Criminal Law*, 10th edn, Oxford University Press.
4. Lushbaugh C. and Weston P. (2015). *Criminal Investigation: Basic Perspectives*, Pearson Education.
5. Foster R. E. (2005). *Police Technology*, Pearson Prentice Hall.
6. Katz C. M. and Walker S. (2017). *The Police in America: An Introduction*, McGraw-Hill Education.
7. Walsh W. F., Vito G. F. and Vito G. F. (2018). *Police Leadership and Administration*, New York, eBook.
8. Miller L. S., Hess K. M., and Orthmann C. H. (2017). *Community Policing: Partnerships for Problem Solving*, Cengage Learning.
9. Srivastava Aparna. (1999). *Role of Police in Changing Society*, APH Publishing House.
10. Walker S. E., and Archbold C. A. (2018). *The New World of Police Accountability*, SAGE Publications.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester– III

Discipline Specific Course (DSC-6)

Course Title: CRIMINAL INVESTIGATION

Course Code: C3FSC1P1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-6	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs): At the end of the course, students will be able to:

CO 1: Aware the importance of physical evidences and need for handling, packing and Preservation

CO 2: Understand the different methodologies used in different scene of crimes

CO 3: Understand the need and types of crime scene documentation

CO 4: Understand the importance of Scene of Crime

List of the Experiments

1. Recording of Complaint and FIR in the prescribed form
2. Recording of Case Diary
3. Recording of Panchanama
4. Charge Sheet/Final Report.
5. Handling, Packing and forwarding of physical clues to concerned expert for opinion
6. Handling, Packing and forwarding of Cloth with red stains.
7. Handling, Packing and forwarding of Hair samples
8. Handling, Packing and forwarding of Knife with the suspected Finger prints.
9. Handling, Packing and forwarding of Dried stain on the Floor.
10. Handling, Packing and forwarding of Cup with the suspected Finger prints.
11. Handling, Packing and forwarding of Bottle with the suspected Finger prints.
12. Handling, Packing and forwarding of Bullets and Cartridge cases

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical Record Book	05 marks
Experiment based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester–IV

Discipline Specific Course(DSC-7)

Course Title: CRIMINAL LAW AND PENOLOGY

Course Code: C4FSC1T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-7	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

CO1: Enhance the ability of the students to understand the history of criminal law, The Bhartiya Nyaya Samhita, Bhartiya Nagarik Suraksha Sanhita and Bhartiya Sakshya Adhiniyam along with some selected sections.

CO2: Understand about the meaning, concept and scope of penology and Correctional Administration

CO3: Explain the theories and types of punishments in the past and present in India and abroad.

CO4: Understanding the concepts of institutional (prison) and non-institutional treatments of prisoners, types and the legal provisions.

Unit	COURSE TITLE: CRIMINAL LAW AND PENOLOGY	60 hrs/sem
Unit I	<p>INTRODUCTION TO CRIMINAL LAW Meaning, Definitions and Characteristics of Criminal Law History of Indian Penal Code – Code of Criminal Procedure – Indian Evidence Act (New and Indigenous laws 2023)</p> <p>The Bharatiya Nyaya Samhita: Definition of Crimes and Punishments Crimes against Property: Theft, Robbery, Dacoity and Forgery. Crimes against Persons: Culpable homicide, Murder, Rape, Hurt and Defamation.</p>	15 hrs
Unit II	<p>THE BHARATIYA NAGARIK SURAKSHA SANHITA AND THE BHARATIYA SAKSHYA ADHINIYAM</p> <p>The Bharatiya Nagarik Suraksha Sanhita Organizational set-up of courts in India Public prosecutor, Defense counsel and Concept of fair trail Arrest, Rights of arrested person and types of bail</p> <p>The Bharatiya Sakshya Adhiniyam Evidence: Meaning, types, concept of relevancy and admissibility Confessions, Dying Declaration and Expert opinion Burden of proof, Cross-examination and re-examination.</p>	15 hrs

Unit III	<p>INTRODUCTION TO PENOLOGY</p> <p>Penology: Meaning, Definitions, nature and scope Punishment: Meaning and Types of Punishment Theories of Punishment: i) Deterrence theory, ii) Retributive theory , iii) Preventive theory and iv) Reformation theory.</p>	15 hrs
Unit IV	<p>INSTITUTIONAL AND NON-INSTITUTIONAL TREATMENT</p> <p>Institutional Treatment: Meaning and purpose Types of institutions: adult, women and children Constitutional and legal provisions of prisoners Remission, temporary release and premature release</p> <p>Non-Institutional Treatment for Prisoners: Community based corrections: Probation, Parole, and After care services, Role of NGOs in reformation and rehabilitation</p>	15hrs

References:

1. LaFave, Wayne R. (200). *Criminal Law*, St. Paul Minn. : West Group
2. Ashworth A., and Horder J. (2013). *Principles of Criminal Law*, 10th edn, Oxford University Press.
3. BasuDuraga Das, (2005). *Introduction to Constitution of India*, (19th edn), Wadhwa and Company Law Publishers.
4. Gaur, KD. (1999). *Criminal Law and Procedure (cases)*, (3rd edn), Butterworth Tripathi Publications.
5. Ratan Lal and Dhirajlal. (2002). *Indian Penal Code*, Wadhwa and Company Pub.
6. Criminal Law Journal Published by All India Reporter Pvt. Ltd. Nagpur.
7. Kaplan J., Weisberg R., and Binder G. (2021). *Criminal Law : cases and Materials*, Aspen Publishing.
8. Liebling A., Maruna S, and Lesley McAra. (2017). *The Oxford Handbook of Criminology*, (6th edn), Oxford University Press.
9. Paranjape N. V. (2005). *Criminology and Penology*, Central Law Publications, Allahabad.
10. The Bharatiya Nyaya Samhita 2023, The Bharatiya Nagarik Suraksha Sanhita 2023 and The Bharatiya Sakshya Adhinyam 2023.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester–IV

Discipline Specific Course (DSC-8)

Course Title: CRIMINAL JUSTICE INSTITUTIONS VISITS

Course Code: C4FSC1P1

Type of Course	Theory /Practical	Credits	Instruction hour per week	TotalNo. Of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-8	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs): At the end of the course, students will be able to:

CO 1 : Understand Prison administration □

CO 2: Prisoners facilities and Problems □

CO 3: Understand the functions of Juvenile Rehabilitation centers □

CO 4: Understand the powers and functions of JJB and CWC □

List of the Experiments/ Institution visits.

1. Visit to Police station
2. Visit to District Police/Sub Division Office
3. Visit to Bell of Arms
4. Visit to Police Dog Squad
5. Visit to Judicial Magistrate of First Class (JMFC) court to observe and record the trial proceedings.
6. Visit to Family Court to observe and record the trial proceedings.
7. Visit to Sessions courts – to observe and record the trial proceedings.
8. Visit and study the overview of Prison as a correctional institution.
9. Study the various facilities, reformatory measures, training and rehabilitation process in correctional institution
10. Visit and study the functions and powers of Juvenile Justice Board
11. Visit and study the functions and powers of Child Welfare Committee
12. Visit and study the aftercare services
13. NGOs working toward reformation, rehabilitation and resocialization of inmates.

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical/ Visits Book	05 marks
Experiment/ institutes visits based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester–V

Discipline Specific Course(DSC-9A)

Student shall select DSC 9A & 10 A or 9B & 10 B for 06 credits only

Course Title:- FORENSIC MEDICINE AND TOXICOLOGY

Course Code: C5FSC2T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-9A	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

CO1: To understand the basics of Medical Jurisprudence and Toxicology

CO2: Demonstrate the medico-legal importance of Death.

CO3: To familiarize with the poisons and their effects on human body.

CO4: To Familiarize with autopsy and its importance.

Unit	Course Title: FORENSIC MEDICINE AND TOXICOLOGY	60 hrs/sem
Unit-I	FORENSIC MEDICINE Forensic Medicine: Meaning, definition and Importance History of Forensic Medicine Need, Scope, Importance and probative value of medical evidence in Crime Investigation Legal and Ethical Aspects of Practice of Medicine The Indian Medical Council and State Medical Council: Formation, Functions Rights, Privileges and Duties of Registered Medical Practitioners.	15 hrs
Unit-II	THANATOLOGY Thanatology, death, its causes, stages of death, signs of death and changes following death, Asphyxia and accidents Death due to heat, cold and electrocution Injuries classification and medico legal aspects Sexual offences Forensic psychiatry	15 hrs
Unit-III	FORENSIC TOXICOLOGY Forensic Toxicology: Meaning, Definitions and Importance General consideration and Laws in relation to poisons / Narcotic drugs and Psychotropic substances Act, Common poisons and their classification Identification of common poisons Analytical Toxicology (Principles: Bedside & Common Lab. Tests),	15 hrs

	Collection, Preservation and Dispatch of Viscera to FSL Regulatory Toxicology for prevention of Hazards to Health and Ecology.	
Unit-IV	<p>POISONS AND ITS STUDY</p> <p>Corrosive & irritant poisons: Inorganic Corrosives: Sulphuric, Nitric & Hydrochloric Acid Organic Corrosives: Phenol, Oxalic Acid Inorganic Non-Metallic Irritants: Phosphorus, Halogens, Inorganic Metallic Irritants- Arsenic, Lead, Mercury, Copper Organic Vegetable Irritants: Abrus, Castor, Croton, Calotropis, Semi carpus, Ergot.</p> <p>Neurotoxin: Inebriates: Ethyl, Alcohol and Methyl Alcohol Somniferous and Sedative Hypnotics – Opium and Derivatives, Barbiturates Deliriant- Dhathura, Cannabis, Cocaine</p> <p>Asphyxiants and Other Poisons: Asphyxiants (Gases): Carbon monoxide, Carbon Dioxide and Cyanides Cardiac Poisons: Oleanders, Aconite and Tobacco Other Poisons- Domestic/ Household Poisons- Kerosene, Detergents</p>	15hrs

References:

1. James J. P., Busuttill A., and Smock W. (2003). *Forensic Medicine: Clinical and Pathological Aspects*, Cambridge University Press.
2. Dettmeyer R. B., Verhoff M. A., and Schutz H. F. (2013), *Forensic Medicine: Fundamentals and Perspectives*, Springer Science & Business Media.
3. Guharaj P.V. & R. Chandran. (1982). *Forensic medicine*, Orient Longman Pvt ltd.
4. Lahiri S.K.. (1973). *Elements of medical jurisprudence*, Prabasi press.
5. Nandy. (1995). *Principals of forensic medicine*, New central book agency.
6. Mant A.K.(2003). *Taylor's principles & practice of medical jurisprudence*, Wingking Tong co.ltd.
7. Gordon I & Shapiro H.A.(1982). *Forensic medicine*, Longman group ltd.
8. Lappas, Nicholas T., (2016). *Forensic Toxicology : Principles and Concepts*, Amsterdam: Elsevier.
9. Biswas G.,(2012). *Review of Forensic Medicine and Toxicology*, JP Medical Ltd.
10. Levine B. S., Kerrigan S.,(2020). *Principles of Forensic Toxicology*, Springer Cham.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester–V

Discipline Specific Course (DSC-10A)

Course Title: Medico legal Examination and Digital Forensic Investigation

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-10A	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs):At the end of the course, students will be able to:

CO1: Understand about Medico-legal cases

CO2: Know about body Fluids

CO3: Examine the importance of physical evidence

CO4: Evaluate wounds and injuries

List of the Experiments

1. Medico-legal aspects of Homicidal / Suicidal
2. Medico-legal aspects of Accidents
3. Examination of Human Skeleton
4. Identification of Sex and age through examination Bone remains
5. Examination of different wounds and injuries.
6. Preliminary Blood tests; Benzidine, phenolphthalein
7. Confirmatory Blood tests : Haemin crystal,
8. Microscopic and blood grouping.
9. Examination of morphology of hair
10. Examination and identification of fibres.

CO1: Understand about cyber crime

CO2: Analyze modus operandi of Cyber crime CO3: Evaluate forensic tools for cyber investigation CO4: Know about recent trends in cyber crimes

1. List of the Experiments
2. Detection of deletions / Obliterations
3. Detection of modifications of files using encase software.
4. Tracing the routes followed by e-mails and chats.
5. Identification of the IP address of the sender of e-mails.
6. Identification of memories Hardware in PCs/laptops
7. Identification of proxy applications , encryption files and Hidden files
8. Acquire the data from USBs PC,s, Laptops, HDD, pen drives, memory cards and SIM cards.
9. Study of cybercrime cases and report writing.

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical/ Visits Book	05 marks
Experiment/ institutes visits based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester–V

Discipline Specific Course (DSC-9B)

Student shall select DSC 9B & 10 B or DSC 9A & 10 A for 06 credits only

Course Title:- DIGITAL FORENSICS AND CYBER CRIME

Course Code: C5FSC2P2

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-9B	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs): At the end of the course students will be able to:

CO1: To understand the concept of digital evidence, collection and preservation of evidence and its significance.

CO2: To understand the importance of Cyber Security

CO3: Demonstrate the methods and techniques, best practices to protect against various kind of cyber- attacks.

CO4: To familiarize with the application of Cyber laws in general.

Unit	Course Title: DIGITAL FORENSICS AND CYBERCRIME	60 hrs/ sem
Unit I	INTRODUCTION TO DIGITAL FORENSICS History of computers and mobile generations. General awareness of mobile and computer hardware devices, software, memory and processors. Basic operating system in smart phone and computer- Android, KitKat, MS Dos and Windows. Internet: Basic setup and internet working, Forensic utility of Smartphone, computer and internet. Networks- LAN, WAN and MAN	15 hrs
Unit II	COMPUTER, SMART PHONE AND CYBERCRIME Definition, distinction between computer, smart phone crimes and conventional crimes and reasons for commission of such crimes. Different types of cybercrime: i. Identity theft, cyber defamation, hacking, viruses, trojan and worms, spoofing, spamming, phishing, software piracy. ii. Cloning of mobile and sim cards, Imaging software, logic bombs, cyber stalking. Cyber terrorism, credit and information theft.	15 hrs

Unit III	<p>CYBER RELATED LAWS AND ENFORCEMENT AGENCIES</p> <p>Information Technology Act 2000 and Information Technology (Amendment) Act 2008, Objectives, Applicability, Non-applicability, Definitions, Amendments and Limitations.</p> <p>Offences Under IT Act, Offences Related with Digital Signature and Electronic Signature Under IT Act. Various cyber-crimes under Sections 43(a) to (j), 43A, 65, 66, 66A to 66F, 67, 67A, 67B, 70, 70A, 70B, 80 etc..Penalties Under IT Act, Regulation of Certifying Authorities, Appointment and Powers and Functions of Controller, Cyber Appellate Tribunals. Investigation of malicious applications Agencies for investigation in India, their powers and their constitution as per Indian Laws Procedures, Intellectual Property Rights in the Cyber World.</p>	15 hrs
Unit IV	<p>CYBER SECURITY AND INVESTIGATION OF CYBERCRIME</p> <p>Fraud detection in computer and mobile forensic: detecting fraud, technologies used for fraud detection; data mining and fraud detection.</p> <p>Internet security system, tracing domain name or IP address, firewall security systems, wireless network security.</p> <p>Security using Cryptography and Steganography.</p> <p>Investigation of Cybercrime:</p> <p>Seizure of computers- Seizure of suspected computer, preparation required prior to seizure, collection and seizure of magnetic data.</p> <p>Restoration of deleted files- familiarization of software, Encase, Cyber check suites, Encryption and decryption methods.</p> <p>Legal and privacy issues.</p>	15 hrs

References :

1. Nelson B. Philips A., and Steuart C. (2014). *Guide to computer Forensics and Investigations*, Cengage Learning.
2. Goel S., Gladyshev P., Nikolay A., Markowsky G., and Johnson D. (2023), *Digital Forensics and Cyber Crime*, Springer Nature.
3. Sammons J. (2015). *Digital Forensics: Threatscape and best practices*, Syngress.
4. Moore, R. (2005) "*Cyber crime: Investigating High-Technology Computer Crime*," Cleveland, Mississippi: Anderson Publishing.
5. Gupta and Agarwal. (2012) *Cyber Law*, Premier Publication Company, Allahabad.
6. Information Technology Act 2005 & IT Act Amendment, 2008
7. Paranjape N.V. (2010). *Cyber Crimes and Law*, Central law Agency, Allahabad.
8. Halder, D., & Jaishankar, K. (2011). *Cyber crime and the Victimization of Women: Laws, Rights, and Regulations*. Hershey, PA, USA: IGI Global.
9. Ashok Kumar, Manocha O. P. (2023). *Cyber Encounters: Cops Adventures With Online Criminals*, Penguin eBury Press.
10. Sammons J. (2015). *Digital Forensics: Threatscape and Best Practices*, Syngress.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester–VI

Discipline Specific Course (DSC-11A)

Student shall select DSC 11B & 12 B or DSC 11A & 12A for 06 credits only

Course Title:- FORENSIC DOCUMENT AND BALLISTICS

Course Code: C6 FSC2T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-11A	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

CO1: Understand the disputed documents

CO2: Understand the characteristics of handwriting

CO3: Know about the types of ammunition and firearms

CO4: Examine the importance of ballistics in criminal investigation

Unit	Course Title: FORENSIC DOCUMENT AND BALLISTICS	60 hrs/sem
Unit I	INTRODUCTION TO FORENSIC DOCUMENT Document: Meaning and Definitions Questioned Document: Meaning, Definitions and Types Preliminary examination, collection, Handling and Transportation of document. Organization and functions of Government Examiners for Question Document. Laboratory analysis and court permission as evidence.	15 hrs
Unit II	FORENSIC DOCUMENT EXAMINATION Handwriting: Meaning and Principles. Class and individual characteristics of Handwritings. Comparison of handwriting: Natural variations and fundamental divergences in handwritings. Examination of signatures characteristics, Examination of paper and ink. Forgery: Meaning and Types. Alterations in documents. Indented and invisible writings. Tools and Techniques for examination and Identification of Forgeries.	15 hrs
Unit III	FORENSIC BALLISTICS Firearm: Meaning and historical development. Classification of firearms. Firing mechanisms of different firearms. Ammunition: Types of ammunition, Constructional features and characteristics of different types of cartridges and bullets. Different types of marks produced during firing process on cartridge – firing pin marks, Breech face marks, chamber marks, extractor and ejector marks.	15 hrs

Unit IV	<p>FIREARM EVIDENCE</p> <p>Matching of bullets and cartridge cases in regular firearms. Automated method of bullet and cartridge case comparison. Determination of range of fire and time of fire. Mechanisms of formation of gunshot residues Methods of analysis of gunshot residues from shooting hands and targets, with special reference to clothing.</p>	15hrs
---------	--	-------

References :

1. Albert S. Osborn. (1998). *Questioned Documents*, 2nd Ed., universal Law Pub., Delhi
2. Albert S Osborn. (1998). *the Problem of Proof*, 2nd Ed., Universal Law Pub. Delhi.
3. Harrison W. R., (2001). *Suspect Documents Their Scientific Examination*, Universal Law Pub. Delhi Indian Reprint.
4. Morris Ron N, (2001). *Forensic Handwriting Identification*, Acad Press, London..
5. Charles C. Thomas, I.S.Q.D. (1971). *Identification System for Questioned Documents*, Billy Prior Bates Springfield, Illinois, USA
6. Kurtz Sheila; (1983). *Graphotypes a new Plant on Handwriting Analysis*, Crown Pub. Inc., USA
7. urrad. (1956). *The Identification of Firearms and Forensic Ballistics*, Herbert Jenkins, London,
8. Gunther and Gunther. (1935). *The Identification of Firearms*, New York,
9. Sharma, B.R., (2011). *Firearms in Criminal Investigation & Trials*, (4th Edn), Universal Law Publishing Co Pvt Ltd, New Delhi.
10. Smith and Smith, (1972). *Book of Rifles*, Stackpole Books, Harrisburg, Pa.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical/ Visits Book	05 marks
Experiment/ institutes visits based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester–VI

Discipline Specific Course(DSC-11B)

Student shall select DSC 11B & 12 B or DSC 11A & 12A for 06 credits only

Course Title:- DACTYLOSCOPY AND DNA FINGERPRINTING

Course Code: C6FSC2T2

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-11B	Theory	04	04	60hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

- CO1: Understand the different types of finger prints
- CO2: Examine the fingerprints found in crime scene
- CO3: Evaluate the latent prints
- CO4: Understand relevance of fingerprint in crime detection

Unit	Course Title: - DACTYLOSCOPY AND DNA FINGERPRINTING	60 hrs/sem
Unit I	INTRODUCTION TO DACTYLOSCOPY Dactyloscopy: Meaning, Nature and Importance Historical Development of Fingerprint Science. Principles of Fingerprints Organization and functions of State and Central Fingerprint Bureaus Evidentiary value of Fingerprint in the Court of Law Foot prints: Meaning, Types and Importance Components and measuring of Gait Pattern	15 hrs
Unit II	CLASSIFICATION OF FINGER PRINTS PATTERNS Finger print patterns: Meaning and Types Poroscopy and Edgeoscopy Henry’s ten Digit Classification of Fingerprints Battely’s Single digit Classification System Ridge Characteristic. Chance Prints: Meaning and Types,	15 hrs
Unit III	DEVELOPMENT OF LATENT FINGER PRINTS AND FOOT PRINTS Development of Latent Finger Prints by: Physical methods for latent fingerprint Development Chemical Methods for latent fingerprint Development Iodine Fuming Method.,Vacuum Metal Deposition (VMD) method Lifting Foot Prints: Tracing and casting of Foot Prints Electro Static lifting of latent foot prints.	15 hrs

Unit IV	<p>DNA FINGERPRINTS</p> <p>Meaning of DNA Fingerprints and Scopes. Importance of DNA Fingerprints. Legal Procedures for Conducting DNA Fingerprints. Different Type's Cases Conduct DNA Fingerprints. Source of DNA: Blood, Saliva, Hair, Skin tissues and Nail.</p>	15hrs
---------	---	-------

References:

1. B.S. Nabar., *Forensic Science in Crime Investigation*, 3rdEdn., Asia Law House, Hyderabad
2. Barry, A.J. Fisher; (2003.)*Techniques of Crime Scene Investigation*, 7th Ed, CRC Press, NY,
3. Bennett, W.W. & Karen, M.Hass, (2001).*Criminal Investigative*, 6th Ed. Worsworth Thompson Learning,
4. Peter R. De Forest,and Henry C. Lee. *Forensic Science An Introduction to Criminalsites*.
5. Sharma. B. R. *Forensic Science in Criminal Investigation and Trials*
6. Saferstein R. “*Criminalistics: - An Introduction to Forensic Science*”.
7. Akhil Vij, Anoop Namboodiri, (2014) “ *Learning Minutiae Neighborhoods: A New Binary Representation for Matching Fingerprints*”,
8. E. Zhu, J. Yin, G. Zhang, (2005) *Fingerprint matching based on global alignment of multiple reference minutiae, Pattern Recognition*.
9. D. Wan, J. Zhou, (2006) *Fingerprint recognition using model-based density map*, IEEE Trans. Image Process.
10. Wertheim K, Maceo A (2002) *The critical stage of friction ridge and pattern formation*.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester–VI

Discipline Specific Course (DSC-12B)

Course Title: Questioned Documents and Ballistics and Fingerprint Analysis

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSC-12B	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs):At the end of the course, students will be able to:

CO1: Understand Different type of fingerprints

CO2: Evaluate Fingerprints as a evidence

CO3: Analyze human skin and fingerprints

CO4: Understand different types of fingerprint identification methods.

List of the Experiments

1. Recording of fingerprints of a living person
2. Different types of finger print recording
3. Finger Print Pattern identification
4. Finger Print Pattern analysis.
5. Identification of Ridge Characteristics.
6. Comparison of fingerprints
7. Identification of plastic prints
8. Henry's classification
9. Developing latent fingerprints – Physical methods
10. Developing latent fingerprints Chemical Methods
11. Tracing Foot Prints
12. Taking plaster cast of sunken foot prints

Course Outcomes (COs):At the end of the course, students will be able to:

CO1: Understand the handwriting characteristics CO2: Evaluate the questioned documents

CO3: Know about Different tools marks found in cartridge cases

CO4: Understand the role of ballistics in offence against human body cases

List of the Experiments

1. Identification of handwriting and signature characters.
2. Study the natural variations and comparison of handwritings.
3. Detection of simulated forgery
4. Identifying obliterated hand writing
5. Identification of different writing materials
6. Identification of weapons through bullet remains

7. Comparison of fired bullets and Cartridge cases
8. Estimation of the range and angle of fired bullets.
9. Identification of gunshot residue.

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical/ Visits Book	05 marks
Experiment/ institutes visits based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Semester– III
Elective Course (EC-1)
It is for other combination students

Course Title:- CRIME SCENE MANAGEMENT
Course Code:- C5FSC5T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
EC-1	Theory	03	04	45hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

- CO1: Know the importance of Crime Scene
CO2: Understand the value of physical evidence
CO3: Understand the different types of Crime scene search methods
CO4: Know about handling the evidence

Unit	Course Title: CRIME SCENE MANAGEMENT	45 hrs/sem
Unit I	CRIME SCENE MANAGEMENT Introduction to Crime scene investigation, Types of Crime scene, Locard's Exchange Principle, Expert's Team composition, Methodological Approach to processing the Crime scene, Sketching and mapping, Role of First responding Officer.	15 hrs
Unit II	PROCESSING A CRIME SCENE History and Development of Forensic Science, Basic Principles of Forensic Science, Organizational structure of Forensic Science Laboratories at State and Central level, White Collar crime, Organized Crimes, Economic crimes, Cyber crimes, Crime against children and Women.	15 hrs
Unit III	SEARCHING THE CRIME SCENE Types of Searches, Zone Search: Ever Widening, Circle Strip Search, and Grid Search, Indoor searches and outdoor searches, searching of pattern and marks, Collection. COLLECTION AND PACKAGING OF EVIDENCE PHYSICAL EVIDENCES Collection, Packaging and Forwarding of different types of evidences to the laboratories, Techniques for Handling Evidence, Biological evidence, Impression Evidence, Firearms and Ballistic Evidence, Drug Evidence, Toxicological Evidences.	15 hrs

References :

1. Robinson E. M. (2016). *Crime Scene Photography*. Academic Press.
2. Gardner R. M. and Krouskup D. (2018), *Practical Crime Scene Processing and Investigation*, 3rd edn, Boca Raton CRC Press.
3. Fisher B. A. and Fisher D. R. (2022). *Techniques of Crime Scene Investigation*, Boca Raton CRC Press.
4. Duncan C. D. (2023). *Advanced Crime Scene Photography*, 3rd edn, Boca Raton CRC Press.
5. Wagner, Scott. (2009). *Death Scene Investigation: a field guide*, Boca Raton CRC Press/Taylor & Francis.
6. Sharma, B R. (2014). *Forensic Science in Criminal Investigation and trials*, New Delhi, India: Universal Law Publishing Co. Pvt. Ltd.
7. Nabar, B. S. (2003). *Forensic Science in Crime Investigation*, Hyderabad, India: Asia Law House Hyderabad.
8. James S. H., Nordby J. J and Bell S. (2014). *Forensic science: An Introduction to Scientific and Investigative Techniques*, Boca Raton CRC Press/Taylor & Francis.
9. Krishnamurthy, R. (2011). *Introduction to Forensic Science in Crime Investigation*, India: Selective & Scientific Books.
10. Sutton R., Trueman K. and Moran C. (2016). *Crime Scene Management: Scene Specific Methods*, John Wiley & Sons.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester– IV

Elective Course (EC-2)

Course Title: FORENSIC TOOLS AND TECHNIQUES

Course Code: C6FSC5T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
EC-2	Theory	03	04	45hrs.	3hrs.	20	80	100

Course Outcomes (COs):At the end of the course students will be able to:

CO1: Identify the different tools in forensic science

CO2: Understand the techniques and applications used in criminal investigation

CO3: Know the functions of advanced microscopes

CO4: Understand the importance of Forensic photography

Unit	Course Title: FORENSIC TOOLS AND TECHNIQUES	45 hrs/sem
Unit I	INTRODUCTION TO FORENSIC TOOLS AND TECHNIQUES Importance and application of scientific techniques in forensic science Application of Artificial intelligence in forensic science Role of scientific techniques in establishing a crime	15 hrs
Unit II	MICROSCOPY Fundamental principles. Different types of microscopes: Simple microscope, research microscope, binocular microscope, Comparison Microscope, Electron microscope and Scanning Electronic Microscope (SEM)., Magnification and Resolution., Transmission Electron Microscopy (TEM), Stereomicroscope Polarization and application Forensic applications of microscopy. Stereo-zoom Microscopy, Video Spectral Comparator (VSC) and Electrostatic Detection Apparatus (ESDA) , Softwares of fingerprints, classification and detection of cyber crimes	15 hrs
Unit III	FORENSIC PHOTOGRAPHY Basic principles and applications of photography in forensic science. Photographic evidence. 3D photography, Infrared and ultraviolet photography, Digital photography, Videography and CCTVs. Crime scene and laboratory photography. Spectroscopic Techniques Introduction, Review of Spectroscopy Fundamental principles and Instrumentation and Techniques, Qualitative and Quantitative methods.	15 hrs

Ultraviolet-visible spectroscopy, Infrared spectroscopy, atomic absorption spectroscopy, Atomic emission spectroscopy and Mass spectroscopy. Colorimetric analysis and Lambert-Beer law, Forensic Applications.

References:

1. Stuart B.H. (2012). *Forensic Analytical Techniques*, Wiley Publication.
2. Kumar S. S. (2021). *A Textbook on Measurement and Instrumentation*, Nation Press.
3. Jackson G. and Verbeck G. (2021). *Forensic Chemistry: Instrumentation and Applications*, Wiley Publication.
4. Gaensslen R. E., Kubic T. a., Desion P. J., and Lee H. C. (1985). *Instrumentation and Analytical methodology in Forensic Science*, American Chemical Society and Division of Chemical Education.
5. Elkins K. M. (2018). *Introduction to Forensic Chemistry*, 1st edn, Boca Raton, CRC Press.
6. Bell L. S. (2012). *Forensic Microscopy for Skeletal Tissue: Methods and Protocols*, Humana Totowa, NJ.
7. Wheeler and Barbara. (2008). *Practical Forensic Microscopy: a laboratory manual*, Chichester, England; Hoboken, NJ: John Wiley.
8. Marsh N. (2014). *Forensic Photography: A Practitioner's Guide*, John Wiley & Sons
9. Weiss, Sanford L. (1948). *Forensic Photography: Importance of accuracy*, Upper Saddle River, N.J. : Pearson/Prentice Hall.
10. Taylor K. T. (2000). *Forensic Art and Illustration*, 1st edn, Boca Raton, CRC Press.

Formative Assessment for Theory	
Assessment Occasion/type	Marks
InternalAssessmentTest1	05
InternalAssessmentTest2	05
Assignment	10
Total	20Marks
<i>Formative Assessment as per guidelines.</i>	

B.Sc. Semester–IV/ V/VI

Skill Enhancement Course (SEC)

Student shall study SEC in any one of the Semesters either in IV or V or VI semester

College shall decide to allot the students

Course Title: STUDY OF MARKS AND IMPRESSION

Course Code: C0FSC6T1

Type of Course	Theory /Practical	Credits	Instruction hour per week	Total No.of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
SEC	Practical	02	04	56hrs.	3hrs.	10	40	50

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1 : Understand the importance of Glass Fractures in Crime Scene Analysis

CO 2 : Develop the necessary investigation skills to become Scene of crime experts

CO 3 : Understand the importance of Physical evidence

CO 4 : Recognise the importance of Footprints in estimation of Anthropometric Measurements.

List of the Experiments

1. Examination of Glass Fractures for Determination of its Nature and Direction of Force.
2. Examination of Burnt Glass
3. Examination of Currency Notes
4. Examination of Coins for their Authenticity.
5. Comparison of Different Tool Marks.
6. Tool marks from blunt object and sharp object
7. Examination of Tyre Marks
8. Examination of Skid Marks and Identification of Speed and Weight of a Vehicle.
9. Identification of Accidents Vehicle
10. Examination of Surface footprints
11. Analysis of Sunken Footprint
12. Estimation of Height of a Person based on His/Her Footprint by Anthropometric Measurements.

Instruction:

Course Teacher and HOD/ Coordinator/ Principal certified practical record book is mandatory for appearing semester end practical examinations

Formative and Summative examination pattern

Internal tests	10 marks
Viva –Voce	05 marks
Practical Record Book	05 marks
Experiment based questions	30 marks
Total	10+ 40 = 50 marks

B.Sc. Programme: 2024-25

GENERAL PATTERN OF **THEORY** QUESTION COURSE FOR DSC/ EC
(80 marks for semester end Examination with 3 hrs duration)

Part-A

1. Question number 1-10 carries 2 marks each. : 20 marks

Part-B

2. Question number 11- 18 carries 05Marks each. Answer any 06 questions : 30 marks

Part-C

3. Question number 19-22 carries 10 Marks each. Answer any 03 questions : 30 marks
(Minimum 1 question from each unit and 10 marks question may have
sub questions for 7+3 or 6+4 or 5+5 if necessary)

Total: 80 Marks

**Note: Proportionate weightage shall be given to each unit based on number of hours
Prescribed**