Bachelor of Science (Forensic Science)

Program Outcomes (POs)

At the end of the program, students will be able to	
PO 1	Propose novel ideas towards solutions to contemporary problems justifying with relevant facts and data
PO 2	Develop scientific outlook and see the relevance of science concepts in all aspects of life
PO 3	Identify, formulate and analyze complex scientific problems using principles of natural and applied sciences.
PO 4	Comprehend concepts, frameworks and inventions through various learning methods and effectively communicate them to others orally and in writing.
PO 5	Analyze critically the given scientific data, ascribe meaning to them and draw objective conclusions.
PO 6	Demonstrate empathetic social concerns, skills to effectively participate in civic affairs and democratic decision-making.
PO 7	Imbibe ethical, moral and social values to become cultured and civilized global citizens.
PO 8	Address social and environmental issues from sustainability perspective
PO 9	Develop multidimensional skills and habits as lifelong learners.

Program Specific Outcomes (PSOs)

At the end of the program, students will be able to	
PSO 01	Articulate diverse aspects of forensic science like police administration, crime scene management, photography, computing, cyber forensics, wild-life forensics, criminology, forensic pharmacology and toxicology and collection, preservation and evaluation of evidences of all kinds and instrumentation.
PSO 02	Illustrate the functioning of the judicial system, police organizations, forensic scientists, techniques involved in collection, preservation and evaluation of evidences; various aspects of the allied sciences that assist in forensic investigation protocols and step by step development of the investigative procedures.
PSO 03	Differentiate between and among methods/protocols, instrumentation and evaluative procedures required in the investigative process that is required for crime solving and also document the same as per norms.
PSO 04	Recommend and develop various aspects of investigation protocols based on the type of crimes, evidences collected, evaluative procedures conducted and aid in solving cases keeping in mind the laws and justice systems pertaining to the same.

Course Outcomes (COs)

2019-20 Batch

Semester	Course Code	Course Name	Course Outcomes (COs)
I	16ENG1L02	ENGLISH I	**CO1**: Demonstrate a coherent and systematic knowledge of the field of English literature showing an understanding of current theoretical and literary developments in relation to the specific field of English studies. **CO2**: Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity. **CO3**: Display knowledge to cultivate a better understanding of values – both literary values that aid us in literary judgment and also values of life at all stages; apply appropriate methodologies for the development of the creative and analytical faculties of students, their overall development of writing, including imaginative writing. **CO4**: Cultivate ability to look at and evaluate literary texts as a field of study and as part of the wider network of local and global culture.
	18BSF1C03	INTRODUCTION TO FORENSIC SCIENCE	**CO1**: Memorize the History of forensic science in India and abroad, divisions, RFSL, CFSL and their role in criminal investigation. **CO2**: Recognize Various criminal detective agencies, their power, establishment, and their role in forensic development & criminal justice system. **CO3**: Classify various central investigation agencies, central forensic institute and their role in criminal investigation. **CO4**: Distinguish various forensic science disciplines, evidences and also able to distinguish different types of courts in India **CO5**: Create the report on the basis of case studies

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF1C04	FORENSIC CHEMICAL SCIENCE	**CO1**: Define the types of chemical reaction and bonding, isomerism, buffers, alkaloids and explosives substances **CO2**: Describe the application of food adulteration, thermochemistry of explosives, electrochemistry, viscosity, density and adsorption. **CO3**: Demonstrate the behavior of fire and various aspects of building construction and its safety systems with respect to fire incidents. **CO4**: Standard methods of examination of petroleum products and its adulterants. C05: Assess fire, arson and explosion crime scene to recommend suggestions towards concluding the cases based on the evidence collected.
	18BSF1C03L	INTRODUCTION TO FORENSIC SCIENCE LAB	**CO1**: List the examples of crime cases in which apprehension arose because of Daubert standards. **CO2**: Discuss the role of Interpol and NCRB in Forensic investigation. **CO3**: Examine the list of projects undertaken by the BPRD and NCRB. **CO4**: Analyze and interpret various types of crime case studies.
	18BSF1C04L	FORENSIC CHEMICAL SCIENCE LAB	**CO1**: Recall the technique of preparation of laboratory solutions. **CO2**: Identify the proper collection, preservation and packaging methods for explosive and fire scene evidence and report on analysis of explosive and fire debris samples. **CO3**: Demonstrate the volumetric analysis of solutions. **CO4**: Examinations of density, viscosity, flash point and smoke point of accelerants. **CO5**: Assess the presence of cations and anions from the explosive residues by qualitative inorganic analysis.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16KAN1L01	KANNADA	**CO1** : To understand ancient Kannada literature form and principles of life as depicted in it. **CO2** : Develop creative thinking with the introduction of different literature forms. **CO3** : Awareness about gender equality and social harmony. **CO4** : Develop business correspondence skills through letter writing. **CO5** : Ability to formulate a value-based thought process with inclusive approach.
	16SAN1L01	SANSKRIT	**CO1**: Student will be able to understand Nitishatakam and Viduraniti as political Science **CO2**: Develop administrative skills. **CO3** : Analyze five principles of Panchatantra for proper examination. **CO4**: Evaluate the information and defend the right cause. **CO5**: Ability to formulate the value-based thought process with inclusive approach.
	16HIN1L01	HINDI	**CO1**: To enrich the students with Hindi language and literature with holistic approach and to inculcate the value of Hindi as an official and link language. **CO2**: To develop a multi-dimensional approach to face the challenges of life. **CO3**: To develop rational thinking for the benefit of society, analyse the problem and to find a better solution. **CO4**: To develop the quality of positive thinking and creative writing. **CO5**: To create awareness about the development of Indian Civilization. CO6: To make aware of the glorious past for building the golden future.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16AENG1L01	ADDITIONAL ENGLISH	**CO1**: Recognize and describe the critical approach, ideas, values, and themes contained in the literary writings that affect our culture and society. **CO2**: Develop creative and critical thinking **CO3**: Write analytically in a variety of formats, including essays, speeches, and reflective writings. **CO4**: Apply appropriate methodologies for the development of the creative and analytical faculties of students, their overall development of writing, including imaginative writing.
	17BSF1S51	SKILL ENHANCEMENT COURSE: ANATOMY	**CO1**: Demonstrate the knowledge and basics of the normal disposition; inter relationships, gross, functional and applied anatomy of various structures of the human body. **CO2**: Identify the various microscopic structures of different tissues and organs in the human body and correlate the same with its respective functions. **CO3**: Demonstrate anatomical knowledge towards finding solutions to deeper forensic questions pertaining to death, wounds and identifying a human from its remains. **CO4**: Compare research and locate the site of gross lesions/wounds according to the deficits encountered based on the observations drawn on the human body at the crime scene.

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF1S52	SKILL ENHANCEMENT COURSE: FUNDAMENTALS OF COMPUTING	**CO1**: Define Components of Computer Organization and Role of Motherboard **CO2**: Articulate on Boot sequence, Role of Storage Media, Number System, Application and System software (Operating systems: MAC, Windows and LINUX). **CO3**: Identify various file systems and aspects of memory distribution on the hard disk or memory device **CO4**: Identify various file systems and aspects of memory distribution on the hard disk or memory device **CO5**: Compare various types of networking, Reference models, Aspects of internet, web browsers and parts of the memory devices
	17BSF1S51L	ANATOMY LAB	**CO1**: Examine the various uses of microscope and its uses in mitosis. **CO2**: Assess various types of blood cell and their count along with the study and visualization and identification of bones and blood type. **CO3**: Assess the function and identification of Barr bodies **CO4**: Assess the detection of proteins and amylase activity by examining saliva and the various functions of systems of body
	18BSF1S52L	FUNDAMENTALS OF COMPUTING LAB	**CO1**: Recall the parts of Computer system with dismantling and rebuilding **CO2**: Articulate various File Signature, Web history and Cache **CO3**: Demonstrate the technique of working with BIOS and Windows **CO4**: Illustrate various Networks of computer systems **CO5**: Develop knowledge about creating and detecting Steganography

Semester	Course Code	Course Name	Course Outcomes (COs)
II	16ENG1L02	ENGLISH I	**CO1**: Display knowledge to cultivate a better understanding of values – both literary values that aid us in literary judgment and also values of life at all stages. **CO2**: Cultivate ability to look at and evaluate literary texts as a field of study and as part of the wider network of local and global culture. **CO3**: Demonstrate a coherent and systematic knowledge of the field of English literature showing an understanding of current theoretical and literary developments in relation to the specific field of English studies. **CO4**: Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity.
	16BSF2C03	FORENSIC BIOLOGY	**CO1**: Define about Wildlife Crime & the importance of insects in crime scene investigation. **CO2**: Explain the structure and functions of cell organelles, Biomolecules & various microorganisms. **CO3**: Differentiate between various biological evidences for example: human and non-human hair, wood, leaf, pollen and diatoms up to species level **CO4**: Employ various techniques to analyses the biological evidences. **CO5**: Recommend the methods of collection, preservation and examination of biological evidences for example: hair, wood, pollens, pug marks etc. CO6: Propose the methods of preservation of biological evidences and prevent them from contamination.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF2C04	PSYCHOLOGY OF DEVIANT BEHAVIOUR	**CO1**: Describe psychology, goals of psychology, scope and schools of psychology. Define forensic psychology, history and branches of forensic psychology **CO2**: Describe abnormality, classification of psychological disorders according to DSM-IV TR **CO3**: Employ casual factors for Antisocial personality disorder and psychopath, determine clinical picture of psychopath and antisocial personality disorder, factors of aggression and violence. **CO4**: Distinguish between types of criminal behavior, various theories of criminal behavior Cognitive, Socio-cultural theory, social theories and biopsychosocial factors. **CO5**: Appraise the ideal Psychological assessment to assess criminal behavior, measuring cognitive intelligence by using cognitive scales, personality tests, expert testimony on competency to stand trial and child custody evaluations.
	16BSF2C03L	FORENSIC BIOLOGY LAB	**CO1**: Describe the methods of collection and Prevention of biological evidences. **CO2**: Examine hair evidences and identify the species from specimen. **CO3**: Microscopic examination of botanical samples like wood, leaves, pollen grains etc. **CO4**: Test the water sample and extract the diatoms from the water sample. Examination of trace evidences like hair and fibre by different techniques.
	16BSF2C04L	PSYCHOLOGY OF DEVIANT BEHAVIOUR LAB	**CO1**: Assess problems faced by students in college and society **CO2**: Appraise the level of creativity and learning style of the student. **CO3**: Assess adjustment level of an individual in different arena of life. **CO4**: Appraise the unique personality traits of the individual.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16KAN2L01	KANNADA	**CO1**: Students will be able to understand the importance of democracy, elections and responsibility of the younger generation. **CO2** Awareness about student life, knowledge acquisition through academics and learning beyond for holistic development. **CO3** Analyze and differentiate the cultural beliefs to give up superstitious beliefs. **CO4** Evaluate the information based on social concerns and defend the right cause.
	16SAN2L01	SANSKRIT	**CO1**: Student will be able to understand the importance of the ancient knowledge system. **CO2**: Develop creative thinking. **CO3**: Analyze the situation on time and gravity which in turn will help in decision making. **CO4**: 'Evaluate the self' – introspection in day-to-day life, personality development and thereby contribute for a better harmonious society.
	16HIN1L01	HINDI	**CO1**: To develop communal and emotional harmony. **CO2**: To develop the sense of social equality. **CO3**: To create awareness among the students about the importance of environment and its preservation. **CO4**: To educate about the philosophy behind Panchayati Raj System, women reservation and its reality. **CO5**: To bring awareness about the casteism - one of the major hurdles for the social development in our country. CO6: A critical analysis of the present judiciary system. CO7: To improve communication and presentation skills.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16AENG1L01	ADDITIONAL ENGLISH	**CO1**: Demonstrate a coherent and systematic knowledge of the field of English literature showing an understanding of current theoretical and literary developments in relation to the specific field of English studies. **CO2**: Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity. **CO3**: Recognize and describe the critical approach, ideas, values, and themes contained in the literary writings that affect our culture and society. **CO4**: Write analytically in a variety of formats, including essays, speeches, and reflective writings.
III	18BSF3C01	CRIME SCENE INVESTIGATION	**CO1**: Define crime, crime scene documentation, importance of agencies involved in crime scene investigation. **CO2**: Describe types of crime scene, steps of crime scene documentation such as note-making, photography, videography and crime scene sketching. **CO3**: Differentiate between different types of crime scene searching methods with the help of simulated crime scene. **CO4**: Recommend methods for collection, preservation, packaging and examination of physical evidence like hair, glass, blood, soil etc. **CO5**: Formulate strategies for crime scene reconstruction with appropriate measures.

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF3C02	FORENSIC DOCUMENT EXAMINATION	**CO1**: Define documents, Questioned documents, exemplars, handwriting, disguise, forgery, secret writing, alterations, special documents, inks, security documents, stamps and seals etc. **CO2**: Explain the roles, duties and qualification of a document expert as well as the factors influences handwriting. **CO3**: Examine documents, papers, forgery, disguise, alterations, inks, impressions, printers and typewriters. **CO4**: Examine fraudulent documents, handwritings, signatures, mechanical impressions, sequence of stroke, security documents and special documents **CO5**: Create the report on the basis of comparison
	16BSF3C03	CRIMINAL JUSTICE SYSTEM	**CO1**: Recognize the meaning, purpose, types, organizational structure and social relevance of the Criminal Justice System and three important criminal laws in India. Recognize the various elements and stages of crime. **CO2**: Appraise the role of law enforcement agencies in the prevention of crime in the society. **CO3**: Appraise the role of judiciary and related concepts in maintenance of law and order in the society. **CO4**: Describe the historical development, types of prisons and national and international standards related to the prison system.
	18BSF3C01L	CRIME SCENE INVESTIGATION LAB	**CO1**: Apply crime scene investigative technique for securing the crime scene, clothing, and plan for crime scene management (Indoor/ Outdoor). **CO2**: Demonstration of photography of scene of crime and evidences. **CO3**: Examine, collect, package, seal and label both physical and biological evidence found in simulated scene of crime. **CO4**: Reconstruction of crime scene and report writing for the same.

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF3C02L	FORENSIC DOCUMENT EXAMINATION LAB	**CO1**: Examination of handwriting and signature samples; disguised writing **CO2**: Examination of ink using TLC and deciphering secret and miniature writing **CO3**: Examination of security features of currency notes and Indian passport using VSC. **CO4**: Analysis of sequence of stroke **CO5**: Preservation of charred documents using PVA
	19NENVI0VE2 #	ABILITY ENHANCEMENT COURSE: ENVIRONMENTAL STUDIES	**CO1**: Understanding of the basic concepts of environment and ecology to be aware of the surroundings at individual, local and global levels. **CO2**: Comprehending the usage of physical and biological resources available in nature; the issues that affect these resources and what one can do to sustain them. **CO3**: Appreciate key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions. **CO4**: Demonstrate an integrative approach to environmental issues with a focus on sustainability
	18BSF3S41	SKILL ENHANCEMENT COURSE: CRIMINAL PSYCHOLOGY	**CO1**: Demonstrate knowledge and understanding of the various concepts, ethical issues and laws governing forensic psychology; memory and its types; eyewitness testimony and criminal profiling. **CO2**: Identify and differentiate between types of memory, models, describing memory, memory disorders, types of criminal profiling, procedures in profiling and methods to detect deception. **CO3**: Apply various aspects of psychology and criminal profiling during forensic investigations. **CO4**: Demonstrate and administer various profiling techniques, assist LEA by providing psychological perspective towards prevention/ containment or solving crimes.

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF3S42	SKILL ENHANCEMENT COURSE: INTRODUCTION TO FORENSIC PHOTOGRAPHY	**CO 1** Define photography & camera, it's different parts & types. **CO 2** Describe about different types of lenses, basic principles & Light involvement in photography. **CO 3** Identify various settings in the camera, characteristics of the lens and lens system. **CO 4** Demonstrate Exposure triangle & Photomicrography/ Microphotography & explain different light sources used in photography. **CO 5** Differentiate various types of photography & it's introduction and working. **CO 6** Explain Crime scene photography, it's steps & describe admissibility of digital images in court.
	18BSF3S41L	SKILL ENHANCEMENT COURSE: CRIMINAL PSYCHOLOGY LAB	**CO1**: Examine the internal and external locus of control along with the emotional stability of students. **CO2**: Assess various problems encountered by students with respect to health and guidance needs. **CO3**: Appraise the self-concept of the student through an assessment tool. **CO4**: Assess the satisfaction and intelligence among students.
	18BSF3S42L	SKILL ENHANCEMENT COURSE: INTRODUCTION TO FORENSIC PHOTOGRAPHY LAB	**CO1** Describe the different parts of various camera, lighting techniques and exposure techniques **CO2** Employ various different ISO Settings in camera and interpret the results **CO3** Differentiate Photomicrography & Describe Photography of wounds. **CO4** Difference in digital photo file formats- raw and jpeg & Demonstrate Image Authentication using hashing.

Semester	Course Code	Course Name	Course Outcomes (COs)
IV	18BSF4C01	INTRODUCTION TO FIREARMS AND AMMUNITION	**CO1**: Employ relevant provisions of Arms Act in cases involving firearms and ammunition **CO2**: Appraise concepts of primitive and modern firearms, improvised/country-made weapons and ammunition **CO3**: Deduce factors affecting ballistics of projectile **CO4**: Recommend analysis of ballistic related evidences **CO5**: Infer challenges faced by forensic ballistics expert
	18BSF4C02	IMPRESSION ANALYSIS	**CO1**: Identify the best method of visualization and development of impression evidences on different surfaces types. **CO2**: Employ various photographic and lighting techniques to examine impression evidences. **CO3**: Compare the class and individual characteristics of impression evidences like: fingerprints, lip prints, footprints, tyre prints etc. **CO4**: Criticize the various crime scene visualization, lifting, casting and preservation techniques of impression evidences. **CO5**: Create the report on the basis of comparison.
	18BSF4C01L	INTRODUCTION TO FIREARMS AND AMMUNITION LAB	**CO1**: Recall the influence of factors affecting formation of stria and impressions on bullets and cartridge. **CO2**: Articulate the working of instruments important in the ballistics laboratory for analysis of bullets and cartridge. **CO3**: Illustrate the technique of examination and comparison of bullets and cartridge. **CO4**: Employ techniques for collection and packing of evidences such as Gunshot Residue using swab.

Semester	Course Code	Course Name	Course Outcomes (COs)
	18BSF4C02L	IMPRESSION ANALYSIS LAB	**CO1**: Demonstrate the competency to collect the rolled fingerprints and also able to identify the patterns of fingerprints. **CO2**: Classify the fingerprints, lip prints and foot prints. **CO3**: Develop the latent fingerprints, lip prints and foot prints using various powder and chemical methods. **CO4**: Perform Ridge counting, Ridge tracing etc. **CO5**: Compare class and individual characteristics and write a report
	19MIC0VE1	ABILITY ENHANCEMENT COURSE: INDIAN CONSTITUTION	**CO1**: Recognize the meaning of constitution and the development of constituent assembly, the features of the constitution and the fundamental rights, duties and directive principles of state policy. **CO2**: Name the union and state legislature and executive, their powers and functions. **CO3**: Demonstrate the Judicial system in India. **CO4**: Appraise various concepts such as the judicial review, writs, judicial activism, public interest litigation and Lok Adalat. **CO5**: Question the reservation system in India and make suggestions to the government to implement appropriate laws and policies for the development of backward classes and women and children in India. Defend Indian federalism, secularism and the national human rights commission.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16CHE0G1	GENERIC ELECTIVE: METABOLISM AND CLINICAL BIOCHEMISTRY	**CO1**: Demonstrate relationship of energy flow and energy coupling with ATP production in living systems and exemplify the utilization of various biomolecules to harvest energy **CO2**: Explain compartmentalization of the metabolic pathways namely carbohydrate and amino acids and relate the same with diseases due to errors in metabolic process **CO3**: Discuss the requisites of a clinical laboratory and infer the recommendations of quality assurance **CO4**: Examine the components of body fluids like blood, semen and urine and dissect the means of identification at a suspected site **CO5**: Interpret the patient's (victim's) clinical laboratory profile that may help to investigate the crime efficiently.
	19CS0G9	GENERIC ELECTIVE: CYBER SECURITY	**CO1**: Summarize the meaning & importance of cyber security, identify various threats which compromises security & privacy. **CO2**: Interpret common attacks & breaches plaguing database, network and information system with appropriate counter measures. **CO3**: Explain the meaning, types & expectations of an ideal firewall along with advantages and disadvantages of its types. **CO4**: Describe IoT, its characteristics, physical and logical design of an IoT, types and methods of hacking with preventive measures like system backup & recovery.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16CHE0G1L	METABOLISM AND CLINICAL BIOCHEMISTRY LAB	**CO1**: Describe the blood/urine specimen collection and storage conditions in the clinical laboratory. **CO2**: Examine qualitatively, the normal and abnormal constituents of urine sample and assess the disease condition of the patient **CO3**: Test the urine sample (quantitative) and report the conditions of the human body based on the levels of biochemical constituents present. **CO4**: Test the blood sample and report the conditions of the human body based on the levels of normal (urea, creatinine) and abnormal constituents (glucose, proteins etc.).
	19CS0G9L	CYBER SECURITY LAB	**CO1**- Describe about creating virtual network & windows web server. **CO 2** - Articulate the methods of security in windows computer, web server network and wireless network. **CO3**- Demonstrate the Wireshark for Network packet analysis, it's format and checking sources of HTTP & HTML. **CO4**-Define different network commands & demonstrate log analysis.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF4S31	SKILL ENHANCEMENT ELECTIVE: PROJECT METHODOLOGY	**CO1**: Define research, research process, research design, scientific research, hypothesis, descriptive and inferential statistics. **CO2**: Describe types of research, steps in carrying out research, basic principles of experimental research designs, ideal sample, methods of sampling, data collection, and statistical tools. **CO3**: Demonstrate competency to layout the various steps in research scenarios, design research, structure a proposal, define a research problem, assess quality control, collect data and represent it in the most appropriate format. **CO4**: Distinguish between types of research, methods & methodology of research, sampling techniques, data collection, and various statistical tools. **CO5**: Formulate and carry out research following the nuances of research methodology and statistics.
	18BSF4S32	SKILL ENHANCEMENT ELECTIVE: POLICE ORGANISATION AND DUTIES	**CO1**: Describe policing in ancient times, methods and roles and responsibilities divided according to their designation **CO2**: Articulate the modern security system and organization of private and government agencies and different techniques of security in different periods. **CO3**: Interpret the use of various security documents maintained by security personnel along with classification of documents according to security reasons. **CO4**: Demonstrate how various methods of security are deployed to control and prevent crimes in different establishments like industries, hospitals, school, including personal securities in the modern world. **CO5**: Criticise the preventive measures used to control different crimes and improving security and vigilance and liaison with different agencies.

Semester	Course Code	Course Name	Course Outcomes (COs)
V	16BSF5C01	FORENSIC PHARMACOLOGY AND TOXICOLOGY	**CO1**: Define Forensic Toxicology, Poisons, Drugs, Pharmacokinetics and drug dose, Punishments for offences under various Indian acts like NDPS, Drugs and Cosmetics, Poison act. **CO2**: Discuss the history of Forensic Toxicology, Drug addiction problems, Chemical warfare agents, Route and Response of drug exposure, Collection and preservation of toxicological evidence. **CO3**: Differentiate between medicolegal and forensic aspects of different drugs and poisons on the basis of origin, nature and mode of action. **CO4**: Assess the analytical techniques for identification of drugs and poisons from different matrices.
	16BSF5C02	FORENSIC PHYSICAL SCIENCE	**CO1**: Define different physical evidences and physical properties like weight, mass, refractive index, density. **CO2**: Explain different types of evidences like glasses, paint, soil, cement, tool marks with their composition. **CO3**: Demonstrate techniques for examination of physical evidences like glass, paint, soil **CO4**: Compare physical evidences by employing various methods. **CO5**: Assess evidences like glass, paint, fibers, cement, tool marks that are found at the Scene of Crime (SOC).
	16BSF5C03	INSTRUMENTAL ANALYSIS	**CO1**: Summarize the principle of various instrumental techniques and recognize its forensic significance **CO2**: Exhibit sample preparation for various instruments and interpret the data obtained post analysis **CO3**: Differentiate between the types of instrumental techniques **CO4**: Defend a suitable instrumental technique based on the nature of sample to be analyzed

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF5C01L	FORENSIC PHARMACOLOGY AND TOXICOLOGY LAB	**CO1**: Identify the proper collection, preservation and packaging of Forensic toxicological evidence. **CO2**: Demonstrate the working of UV-Visible Spectrophotometer for Toxicological analysis. **CO3**: Examination of drugs and poisons using Distillation, Dry ashing, Wet digestion, TLC etc. **CO4**: Assess the presence of metals using Reinsch test
	16BSF5C02L	FORENSIC PHYSICAL SCIENCE LAB	**CO1**: Articulate on collection, preservation and packaging methods for different physical evidences like glass, paint, cement. **CO2**: Demonstrate different physical and chemical techniques for analysis of physical evidences. **CO3**: Examine evidences by physical, chemical and analytical techniques. **CO4**: Compare physical evidence through forensic analysis. **CO5**: Conclude the report after examination of physical evidences.
	16BSF5D101	DISCIPLINE SPECIFIC ELECTIVE: SECURITY AND VIGILANCE	**CO1**: Describe security and vigilance in ancient times, methods and roles and responsibilities divided according to their designation **CO2**: Articulate the modern security system and organization of private and government agencies and different techniques of security in different periods. **CO3**: Interpret the use of various security documents maintained by security personnel along with classification of documents according to security reasons. **CO4**: Demonstrate how various methods of security are deployed to control and prevent crimes in different establishments like industries, hospitals, school, including personal securities in the modern world. **CO5**: Criticise the preventive measures used to control different crimes and improve security and vigilance and liaison with different agencies.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF5D102	DISCIPLINE SPECIFIC ELECTIVE: CRIMINOLOGY	**CO1**: Define criminology, criminal law, relationship of criminology with other social sciences, Indian penal code and Indian police crime particulars. **CO2**: Discuss the concept of correctional administration and types of Punishments. **CO3**: Demonstrate the theories of punishment and classification of prison and prisoners. **CO4**: Ethical background of victimology and the factors related to its concerned area.
	16BAJM5G03	GENERIC ELECTIVE: INTRODUCTION TO JOURNALISM AND MASS COMMUNICATION	**CO1**: Define different concepts of mass communication and journalism. **CO2**: Identify the different stages, types and levels in mass communication. **CO3**: Criticize the different forms of media, its uses and its effects. **CO4**: Design content for different forms of media- News reporting, Radio and TV scripts, advertising and public relations.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16CS5G01	GENERIC ELECTIVE: INTERNET TECHNOLOGY	**CO1**: Explaining the OSI models and its layers, knowledge of protocols like TCP/IP, HTTP, SMTP, POP and understanding different topologies like LAN, WAN and MAN and its usage **CO2**: Understanding different addressing modes and to get a basic knowledge of Internet and web browsers, DNS, cryptography and its techniques **CO3**: Learning the basics of HTML and usage of various HTML tags in the program **CO4**: Design a responsive web site using HTML5 tags and style the web page using CSS tags **CO5**: Learning the CSS levels like external, internal, inline style sheet and to know the difference between HTML and CSS and usage of CSS to change the style of a document in various levels eg.like changing background color, text color, borders **CO6**: Understanding JavaScript and enabling the student to write script using selection and looping constructs and learning Javascript programming concepts to create interactive web pages
	16BAJM5G03L	INTRODUCTION TO JOURNALISM AND MASS COMMUNICATION LAB	**CO1**: Understand the different styles of writing for media **CO2**: Write for different news stories based on the principles of Journalism. **CO3**: Understand the principles of creating a layout through MS word and adobe indesign **CO4**: Design a newsletter based on the principles of writing and editing

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	16CS5G01L	INTERNET TECHNOLOGY LAB	**CO1**: To Design a web page to demonstrate all HTML tags and creating forms to establish communication with web server **CO2**: Design a web page to demonstrate ordered lists, unordered lists and Frames **CO3**: Implementation of internal and External CSS **CO4**: Create and Implement the programs using CSS to set background property, borders and margins using external CSS **CO5**: Design and implement programs using JavaScript to validate the student details and to change the background color of the Web page, upon mouse entry and mouse exit
VI	16BSF6C01	FUNDAMENTALS OF FORENSIC MEDICINE	**CO1**: Define Forensic medicine, Medical Jurisprudence, court evidences and its types, death as per IPC section, infanticide, Munchausen's syndrome. Significance of various physical evidence in identification of dead and living people. **CO2**: Describe history of Forensic medicine, Medico legal aspects of death, Sudden infants' death syndrome, Post-mortem types and changes, types of injuries, injuries by torture, sexual offences, preservation and dispatch of evidences **CO3**: Differentiate between ante-mortem and post-mortem injuries, Natural and Unnatural death, Summons and warrant, live birth and still birth of foetus, natural and unnatural sexual offences **CO4**: Assess the time since death and the age of different types of injuries

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF6D11	DISCIPLINE SPECIFIC ELECTIVE: DIGITAL FORENSICS	**CO1**: Assess and theorize the characteristics and classification of cyber-crime and its types, digital evidence. **CO2**: Compare and distinguish between different cyber-crimes and password attacks. **CO3**: Articulate different features that can be used as digital evidence. **CO4**: Understand and compare different types of reports used in investigation and court of law.
	16BSF6D12	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC SEROLOGY	**CO1**: Define ecological factors that affects developmental growth of insects. **CO2**: Explain composition and function of various biological fluids. and how forensic entomology relates to wildlife forensic for investigation of crime scene. **CO3**: Employ various techniques to analyze serological evidences. **CO4**: Differentiate between various biological evidences for example: human and non-human hair, wood, leaf up to species level. **CO5**: Recommend most useful analysis to be done for a particular set of evidence. **CO6**: Propose solution for paternity and maternity dispute cases by analyzing genetic profile.
	16BSF6D11L	DISCIPLINE SPECIFIC ELECTIVE: DIGITAL FORENSICS LAB	**CO1**: Recall the safety precautions in cyber-crime scenes **CO2**: Describe and apply different tools like FTK, cyber check suite etc., **CO3**: Summarize the importance and application of how to write protect a system. **CO4**: Write a report after the completion of analysis

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF6D12L	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC SEROLOGY LAB	**CO1**: Memorise the basics of biological fluids. **CO2**: Demonstrate competency towards evaluation of serological evidence. **CO3**: Employ various tests available for preliminary and confirmatory examination of serological evidences **CO4**: Differentiate between hair and pollen upto species level.
	16BSF6D21	DISCIPLINE SPECIFIC ELECTIVE: DNA PROFILING	**CO1**: Discuss the molecular biology of DNA, principles of human genetics along with the applications of bioinformatics, genomics and proteomics in forensic science. **CO2**: Differentiate between various DNA separation techniques. **CO3**: Summarize effect of complicating factors in interpretation of DNA profile. **CO4**: Employ statistics for evaluation of DNA profiles and population data. **CO5**: Appraise the forensic application and method for collection, preservation and analysis of physical evidence for DNA Typing.
	16BSF6D22	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC AUDIO VIDEO ANALYSIS AND SPEAKER IDENTIFICATION	**CO 1** Define electric circuits, different filters, digital watermarking, facial image recognition, recording formats in audio & video with noise properties. **CO 2** Articulate audio & video analysis, its handling procedure & authentication of recorded audio and video. **CO 3** Identify various software used for audio and video analysis, recovery data and aspects of forensic phonetic parameters in speaker identification. **CO 4** Demonstrate voice mechanism, human vocal tract function, the production and description of speech parameters, its forensic significance **CO 5** Differentiate prosodic features, identification and verification of speaker identification. **CO 6** Compare phonetic aspects of speech, components of speaker recognition & various approaches to speaker recognition system.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16BSF6D21L	DISCIPLINE SPECIFIC ELECTIVE: DNA PROFILING LAB	**CO1**: Articulate DNA laboratory management **CO2**: Analyze different techniques used for DNA typing. **CO3**: Use various techniques used for Quantitation and Qualitation of extracted DNA samples. **CO4**: Describe the working of PCR Technique. **CO5**: Construct DNA Typing Report for Criminal and parental dispute cases.
	16BSF6D22L	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC AUDIO VIDEO ANALYSIS AND SPEAKER IDENTIFICATION LAB	**CO1** Describe the measures taken for recording of speech sample and identify its segregation and transcription techniques **CO2** Employ various enhancement and spectrographic techniques on the speech sample and interpret the results **CO3** Differentiate all the modes of disguise in an audio recording or a speech sample. **CO4** Assess the CCTV footage and the extracted audio from the video.
	16BSF6D31	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC ANTHROPOLOGY	**CO1**: Define terminologies related to osteology and anthropology and role of forensic anthropology and odontology in forensics. **CO2**: Classify bone with respect to anatomy and function **CO3**: Demonstrate development of bone, prenatal and post- natal, membranous and cartilaginous development, dentition pattern, classification of teeth, anatomy of tooth, development of tooth, development & classification of dental caries. **CO4**: Use basic tools and techniques for biological profiling of skeletal remains through sex, stature and age estimation, and field and laboratory management of skeletal and dental remains. **CO5**: Compare various techniques available for 2-D and 3-D cranio-facial reconstruction and age estimation through dental remains.

Semester	Course Code	Course Name	Course Outcomes (COs)
	19BSF6D33	DISCIPLINE SPECIFIC ELECTIVE: CELLULAR AND MOBILE NETWORKS	**CO1**: Articulate, discuss and identify various basic concepts of mobile forensics like SIM and its structure, operating systems like android, blackberry etc., **CO2**: Interpret various features of different operating systems, networks and firewalls. **CO3**: Examination of different types of networks for any intrusion. **CO4**: Identification of various features supporting intrusion and crime committed.
	16BSF6D31L	DISCIPLINE SPECIFIC ELECTIVE: FORENSIC ANTHROPOLOGY LAB	**CO1**: Describe the bone specimen identification, collection and storage conditions in the forensic anthropology laboratory. **CO2**: Demonstrate the techniques somatoscopy and somatometry for the identification of living humans. **CO3**: Perform craniometry and osteometry to examine the various skeletal remains. **CO4**: Develop competency to assess sex of skull, mandible & pelvis and age of the skull sutures.
	19BSF6D33L	DISCIPLINE SPECIFIC ELECTIVE: CELLULAR AND MOBILE NETWORKS LAB	**CO1**: Apply different tools like wire shark, Mobile Edit **CO2**: Recall the importance and application of different network commands. **CO3**: Analyse firewall logs. **CO4**: Write a report after the completion of analysis.

Semester	Course Code	Course Name	Course Outcomes (COs)
	16E**CO5**G01	GENERIC ELECTIVE: ELEMENTS OF ENTREPRENEURSHIP	**CO1**: Outline the function of the entrepreneur in the successful, commercial application of innovations and recall the different opportunities and successful growth stories. **CO2**: Learn how to start an enterprise and design business plans that are suitable for funding by considering all dimensions of business. **CO3**: Prioritize personal attributes that enable best use of entrepreneurial opportunities. **CO4**: Examine Economic conditions with higher level knowledge and understanding of contemporary trends in e-commerce and business finance. **CO5**: Explore entrepreneurial leadership and management style.
	19ENGAW6G2	GENERIC ELECTIVE: ACADEMIC WRITING	**CO1**: Enabling students to demonstrate critical thinking, to analyse, synthesise and document credible source material. **CO2**: To examine and reflect on language forms, features, structures of texts and the demands of particular learning contexts. **CO3**: Forming a firm academic base for exploration of texts and contexts that students encounter during the undergraduate and post-graduate level. **CO4**: Orientation towards various nuances of research.