

B.Sc Forensic Science

Eligibility : Intermediate Examination (10+2 pattern) with Mathematics, Physics and Chemistry and Bi.P.C/PUC with Science group. Diploma with Mathematics, Physics and Chemistry (any two of this)

Andhra Pradesh State Council of Higher Education

Table-1: B.Sc Forensic Science SEMESTER – I

S.no.	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	First Language English	100	25	75	4	3
2	Foundation Course - 1 HVPE (Human Values & Professional Ethics)	50	0	50	2	2
3	Foundation course -2 Communication & Soft Skills -1	50	0	50	2	2
4	Fundamentals of Computers	100	25	75	4	3
5	Fundamentals of Computers Lab	50	0	50	2	2
6	Introduction & Development of Forensic Science	100	25	75	4	3
7	Introduction & Development of Forensic Science Lab	50	0	50	2	2
8	Divisions of Forensic Science	100	25	75	4	3
9	Divisions of Forensic Science Lab	50	0	50	2	2
10	Court Testimony	100	25	75	4	3
Total		750			30	25

1. First Language English (Common for All UG Programs)

Unit-I: Prose

1. The Knowledge Society : A.P. J. Abdul Kalam (from his *'Ignited Minds'*)
2. The Language of African Literature: Ngugi Wa Thiong'o (from *his Decolonizing the*

Mind)

Unit-II: Poetry

1. The Road Not Taken : Robert Frost
2. Night of the Scorpion: Nissim Ezekiel

Unit-III: Short Story

1. The Lost Child : Mulk Raj Anand
2. The Loaded Dog : Henry Lawson

Unit-IV: One - Act Play

The Merchant of Venice (Court Scene – Act IV Scene -1): William Shakespeare

Unit-V: Language Activity

1. Pronunciation
2. Spellings
3. Prepositions / Articles
4. Tense Forms
5. Framing Questions
6. Vocabulary

2. Foundation Course - 1 HVPE (Human Values & Professional Ethics)

(Common for All UG Programs)

Unit-I : Introduction to Value Education

1. Value Education, Definition, Concept and Need for Value Education
2. The Content and Process of Value Education
3. Self-Exploration as a means of Value Education
4. Happiness and Prosperity as parts of Value Education

Unit-II: Harmony in the Human Being

1. Human Being is more than just the Body
2. Harmony of the Self ('I') with the Body
3. Understanding Myself as Co-existence of the Self and the Body

4. Understanding Needs of the Self and the Needs of the Body

Unit-III: Harmony in the Family and Society and Harmony in the Nature

1. Family as a basic unit of Human Interaction and Values in Relationships
2. The Basics for respect and today's Crisis : Affection, Care, Guidance, Reverence, Glory, Gratitude and Love
3. Comprehensive Human Goal : The Five dimensions of Human Endeavour

Unit-IV: Social Ethics

1. The Basics for Ethical Human conduct
2. Defects in Ethical Human Conduct
3. Holistic Alternative and Universal order
4. Universal Human Order and Ethical Conduct

Unit-V: Professional Ethics

1. Value Based Life and Profession
2. Professional Ethics and Right Understanding
3. Competence in Professional Ethics
4. Issues in Professional Ethics – The Current scenario
5. Vision for Holistic Technologies, Production System and Management Models

3. Foundation course -2 Communication & Soft Skills -1

Unit I: Vocabulary Building

- a) Prefixes and Suffixes
- b) Conversion
- c) Compounding
- d) Analogy
- e) One-Word Substitutes
- f) Words Often Confused
- g) Synonyms and Antonyms
- h) Phrasal Verbs

Unit II: Grammar - 1

- a) Types of Verbs
- b) Subject-Verb Agreement

Unit III: Grammar - 2

- a) Meanings of Modals
- b) Tense (Present and Past) and Aspect
- c) The Several Possibilities for Denoting Future Time
- d) Articles and Prepositions

Unit IV: Listening Skills

- a) The Importance of Listening
- b) Types of Listening
- c) Barriers/Obstacles to Effective Listening
- d) Strategies for Effective Listening

Unit V: Reading Skills

- a) Skimming
- b) Scanning
- c) Intensive Reading and Extensive Reading
- d) Comprehension

4. Fundamentals of Computers

Unit-1: Basic Computer Knowledge

- Computer organizations, types of computers
- Components of computer
- Input Devices Key board, mouse, touch pad and other pointing Devices
- Desktop Icons and control panel objects
- Operating system types
- Creating Files and Folders
- Exploring the folders, files, and programs
- Editing a document files

Unit-II: Introduction to Computer Networks

- Computer networks
- Internet
- Intranet
- Surfing the Internet
- ISPs and connection types
- Search
- Email
- Virtual communities
- Social Networks
- Tools on the web

Unit-III: Components of Computer and Printers

- Introduction to the Computer Hardware
- Power Supplies, Motherboards
- Internal PC Components
- External Ports and Cables
- Input and Output Devices
- Select Computer Components
- Safe Lab Procedures, Procedures to Protect Equipment and Data
- Proper Use of Tools, Software Tools, Antistatic Wrist Strap
- Printers, Installing and Configuring Printers
- Configuring Options and Default Settings

- Optimizing Printer Performance
- Sharing Printers, Print Servers
- Maintaining and Troubleshooting Printers
- Troubleshooting Printer Issues, Common Problems and Solution

Unit-IV: Computer Assembly

- Assemble the Computer, Computer Disassembly,
- Install the Motherboard, Install Drives.
- Install Cables, Install the Adapter Cards
- Install the Adapter Cards, BIOS Beep Codes and Setup
- BIOS and UEFI Configuration, Upgrade and Configure a Computer
- Storage Devices, Peripheral Devices

Unit-V: Preventive Maintenance and Troubleshooting

- Preventive Maintenance and the Troubleshooting Process
- PC Preventive Maintenance
- Benefits of Preventive Maintenance, Preventive Maintenance Tasks
- Clean the Case and Internal Components, Inspect Internal Components.
- Identify the Problem Probable Cause Test the Theory to Determine.
- Plan of Action to Resolve the Problem and Implement the Solution

5. Fundamentals of Computers Lab

- a. Basic Computer Knowledge
- b. Introduction to Computer Networks
- c. Components of Computer and Printers
- d. Computer Assembly
- e. Preventive Maintenance and Troubleshooting

6. Introduction & Development of Forensic Science

- Unit-1 : Introduction to Forensic Science- Basics terminology- Structure of forensic science laboratories in India- Applications of different branches of sciences to Forensic Science.
- Unit-2 : History and Development of forensic science-World wide- Nationwide- Scope and Limitations of Forensic Science.
- Unit-3 : Principles of forensic science- Locards exchange principle- Proof of evidence- Analysis is no better than the sample analyzed.
- Unit-4 : Introduction to criminal justice system- IPC- CrPC- IEA – Indian Police System (state & central)-Different agencies involved in crime detection.
- Unit- 5 : Judiciary in India – Supreme court- High court- Sessions court etc.

7. Introduction & Development of Forensic Science Lab

Locard's Principle of Exchange- Transfer of Evidences.

- Examination of hand kerchief.
- Examination of glass tumbler
- Examination of glass fragments.
- Examination of paper.
- Examination of knife.

8. Divisions of Forensic Science.

Unit-1 : Forensic Biology: Introduction to bodily fluids- Identification of Blood, Semen, Urine, Saliva, Sweat. & Blood Stain Patterns.

Unit-2 : Forensic psychology: Definition, History, Concepts, Development & Types of professions-Psychiatrists, psychologists, counselors.

Unit-3 : Introduction to Wild life Forensics- Importance of Wild life Forensics- Wild life protection act- Identification of wild life materials such as skin, fur, bones, nails, horn, teeth, flowers and plants.

Unit-4 : Questioned Documents-Definition of Questioned standards, Specimens, Admitted, - Currency note examination

Unit-5 : Genetic Engineering-Introduction to DNA& RNA, DNA Analysis-Isolation of DNA-PCR-Instrumentation for STR typing.

9. Divisions of Forensic Science Lab

- Identification of Blood
- Identification of Semen
- Identification of Saliva
- ABO Blood grouping
- Examination of currency note.

10. Court Testimony.

Unit- 1 : Examination of trial of cases in court- Types of examinations- Oath Taking.

Unit- 2 : Witnesses- Definition- Types of witnesses- Importance of witness.

Unit- 3 : Role of Forensic science Expert- Definition of Forensic Expert- Limitations of Experts – Types of forensic science Experts- Importance of Forensic science Expert.

Unit- 4 : Public Prosecutor- Definition-Role of Public Prosecutors- Importance of Public Prosecutor.

Unit - 5: Role & Responsibilities of Prosecution- Importance of Prosecution.

Table-2: B.Sc. Forensic Science SEMESTER – II

S.No.	Course	Total Marks	Mid Sem Exam*	Sem End Exam	Teaching Hours	Credits
1	First Language English	100	25	75	4	3
2	Foundation course - 3 Environmental Sci	50	0	50	2	2
3	Foundation course – 4 ICT-I Computer Fundamentals and Office Tools	50	0	50	2	2
4	Networking and Security	100	25	75	4	3
5	Networking and Security Lab	50	0	50	2	2
6	Physical Evidence	100	25	75	4	3
7	physical evidence Lab	50	0	50	2	2
8	Crime Scene Management & Analysis	100	25	75	4	3
9	Crime Scene Management & Analysis Lab	50	0	50	2	2
10	Functions & Importance of Forensic Science Laboratories	100	25	75	4	3
Total		750			30	25

1. First Language English (Common for all UG courses)

Unit – I

PROSE

J. B.S Haldane: The Scientific Point of View

A.G. Gardiner : On Shaking Hands

Unit - II

POETRY

John Keats: Ode to Autumn

KishwarNaheed : I am not that Woman (from *An Anthology of Commonwealth Poetry* edited by C.D. Narasimhaiah)

Unit –III

SHORT STORY

Ruskin Bond : The Boy Who Broke the Bank

R. K. Narayan : Half a Rupee Worth

Unit – IV

ONE ACT PLAY

Anton Chekhov: The Proposal

Unit – V

LANGUAGE ACTIVITY

Classroom and Laboratory Activities

Transformation of Sentences (Voice, Speech and Degrees)

Dialogue Practice (Oral)

Listening Comprehension

Classroom Activity

Guided Composition

Dialogue Writing

Reading Comprehension

2.Foundation course – 3 Environmental Science

(Common for All UG Programs)

Unit-I : Natural Resources:

Definition, scope and importance. Need for public awareness.

Brief description of;

Forest resources: Use and over-exploitation. Deforestation; timber extraction, mining, dams. Effect of deforestation environment and tribal people

Water resources: Use and over-utilization. Effects of over utilization of surface and ground water. Floods, drought.

Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

Food resources: World food problems, Effects of modern agriculture; fertilizer-pesticide, salinity problems.

Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.

Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification

Unit-II : Ecosystems, Biodiversity and its conservation

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Food chains, food webs and ecological pyramids
- Characteristic features of the following ecosystems:-Forest ecosystem, Desert ecosystem, Aquatic ecosystem.
- Value of biodiversity: Consumptive use, productive use. Biodiversity in India.
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts.
- Endangered and endemic species of India
- Conservation of biodiversity

Unit-III : Environmental Pollution

Definition

Causes, effects and control measures of :-

Air pollution

Water pollution

Soil pollution

Noise pollution

Solid waste management; Measures for safe urban and industrial waste disposal

Role of individual in prevention of pollution

Disaster management: Drought, floods and cyclones

Unit-IV : Social Issues and the Environment

- From Unsustainable to Sustainable development
- Water conservation, rain water harvesting, watershed management.
- Climate change, global warming, ozone layer depletion,
- Environment protection Act
- Wildlife Protection Act, Forest Conservation Act

Unit-V : Human Population and the Environment

- Population explosion, impact on environment.
- Family welfare Programme
- Environment and human health
- Women and Child Welfare
- Value Education
- Role of Information Technology in Environment and humanhealth.

2. Foundation course – 4 ICT-I Computer Fundamentals and Office Tools

Unit-I: Basics of Computers :Definition of a Computer - Characteristics and Applications of Computers - Block Diagram of a Digital Computer - Classification of Computers based on size and working - Central Processing Unit - I/O Devices.

Unit-II: Primary, Auxiliary and Cache Memory - Memory Devices. Software,

Hardware, Firmware and People ware-Definition and Types of Operating System

Functions of an Operating System - MS-DOS - MS Windows - Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar-Control Pane.

Unit-III: MS-Word

Features of MS-Word - MS-Word Window Components - Creating, Editing,

Formatting and Printing of Documents - Headers and Footers - Insert/Draw Tables, Table Auto format - Page Borders and Shading - Inserting Symbols, Shapes, Word Art, Page Numbers, Equations-Spelling and Grammar-Thesaurus Mail Merge

Unit-IV: MS-PowerPoint

Features of PowerPoint-Creating a Blank Presentation -Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation-Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object -Slide Transition -Custom Animation

Unit-V: MS-Excel

Overview of Excel features-Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells - Inserting Rows/ Columns -Changing column widths and row heights, auto format, changing font sizes, colors, shading.

4. Networking and Security syllabus

Unit-I: Operating Systems and Installation

- Windows Installation, Operating System Terms and Characteristics
- Types of Operating Systems and Operating Systems Upgrade
- Operating System Installation, Storage Device Setup Procedures
- Custom Installation Options, Boot Sequence and Registry Files
- Multiboot Procedures, Disk Management Utility
- Windows Configuration and Management
- Windows Desktop, Tools and Applications, Control Panel Utilities
- Administrative Tools, System Configuration.
- Disk Defragmenter and Disk Error-Checking Tool
- Command Line Tools, Client-Side Virtualization
- Common Preventive Maintenance Techniques for Operating Systems

Unit-II: Applied Computer Networking

- Computer Networks, Types of Networks
- OSI Reference Models, Wired and Wireless Ethernet Standards
- Physical Components of a Network, Hubs, Bridges, and Switches
- Cables and Connectors, Basic Networking Concepts and Technologies
- IP Addresses, IPv4 vs. IPv6, Static Addressing, Dynamic Addressing
- Transport Layer Protocols, TCP, UDP, Port Numbers.
- Computer to Network Connection, Wireless and Wired Router Configurations
- Network Sharing, Remote Connections, ISP Connection Technologies
- Internet Technologies, Networked Host Services,
- Common Preventive Maintenance Techniques Used for Networks
- Basic Troubleshooting Process for Networks

Unit-III: Laptops and Mobile Devices

- Laptops and Mobile Devices, Laptop Components
- Laptop Displays, Laptop Configuration, Wireless Configuration
- Laptop Hardware and Component Installation and Configuration
- Replacing Hardware Devices, Mobile Device Hardware
- Common Preventive Maintenance for Laptops and Mobile Devices
- Basic Troubleshooting Process for Laptops and Mobile Devices
- Mobile, Linux, and OS X Operating Systems
- Mobile Operating Systems, Methods for Securing Mobile Device
- Mobile Device Synchronization, Configuring Email
- Linux and OS X Operating Systems
- Basic Troubleshooting Process for Mobile, Linux, and OS X O/S
- Common Problems and Solutions for Mobile, Linux, and OS X O/S.

Unit-IV: Network Security

- Introduction to Security, Security Threats, Security Procedures
- Securing Web Access, Protecting Data
- Protection Against Malicious Software
- Security Techniques, Protecting Physical Equipment
- Common Preventive Maintenance Techniques for Security
- Basic Troubleshooting Process for Security

Unit-V: Troubleshooting Computer Networks

- Apply Troubleshooting Process to Networks
- Apply Troubleshooting Process to Security
- Identify and Troubleshooting LAN problems
- Cyberwarfare and Network Attacks
- Mitigating Cyber Attacks
- Troubleshoot Security Problems

5. Networking and Security Lab

- Operating Systems and Installation
- Applied Computer Networking
- Laptops and Mobile Devices
- Network Security
- Troubleshooting Computer Networks

6. Physical Evidence

Unit-1 : Physical Evidence- Definition- Importance of Physical Evidence -Types of Physical Evidences-Identification of : Physical Evidence

Unit-2 : Search methods for Physical Evidence- Spiral, Strip, Grid, Zone & Line methods.

Unit-3 : Collection & Packing of Different Physical Evidence, Labeling & Chain of Custody.

Unit-4 : Packing materials for Physical Evidence- Envelops, Zip lock covers, Metal cans, Plastic bags, vials. Etc.& Importance of Packing materials.

Unit-5 : Preservation of Physical Evidence- Definition- Importance of Physical Evidence- Types of Preservatives for different Physical Evidence.

7. Physical Evidence Lab

1. Search methods for collection of physical evidence.
2. Handling & Collection of physical evidences
3. Packing of physical evidences.
4. Preservation of physical evidences.
5. Identification of physical evidences.

8. Crime Scene Management & Analysis

Unit-1 : Introduction to Crime & History- Definition of Crime, Types of Crimes- Suicide, Homicide, Indoor, Outdoor.

Unit-2 : Processing of Crime Scene - Identification of Scene of Crime, Protection of scene of Crime- Authorized personnel involved in processing Scene of Crime, Types of Crime Scenes- Primary, Secondary & Tertiary.

Unit-3 : Sketching of Crime Scene- Rough Sketch & Fine Sketch- Rectangular Coordinate Method, Baseline Method, Triangulation Method.

Unit- 4 : Photography & Videography of the Crime scene.

Unit- 5 : Crime scene Reconstruction- Definition of Crime scene Reconstruction, Nature & Stages of Crime scene Reconstruction

9. Crime Scene Management & Analysis Lab

1. Methods for sketching the crime scene.
2. Sketching of indoor crime scene
3. Sketching of outdoor crime scene.
4. Identification & protection of crime scene.
5. Photography of crime scene

10. Functions & Importance of Forensic Science Laboratories

Unit-1 : Functions of Different Branches of forensic science laboratories & Types of Information to be elicited from Different Branches of forensic science laboratories.

Unit-2 : Documentation required for forensic science laboratories- Copy of FIR, Letter of advice, Chain of Custody, Work sheets, Draft sheets, Report or Opinion.

Unit-3: Duties and Functions of Forensic scientist/ Expert- Receiving Evidence, Letter of advice & Examination, Analysis and Report/ Opinion

Unit-4 : Glass- Definition, Preparation, Types of Glass & Examination of Glass- Refractive Index Method- Soil – Definition, Significance, Methods for Examination of Soil- Density Gradient Method.

Unit-5 : Chemical Etching- Definition- Importance, Types of vehicles involved, Methods for Chemical Etching