

**MRSPTY B.SC. (HONS.) FORENSIC SCIENCE SYLLABUS  
BATCH 2021 ONWARDS (3 YEARS COURSE)**

**Total Credits = 19**

<b>SEMESTER 1<sup>st</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-101	Introduction to Forensic Science	3	1	0	40	60	100	4
BHFSS1-102	Crime and Society	3	1	0	40	60	100	4
BHFSS1-103	Environmental Science	3	0	0	40	60	100	3
BHFSS1-104	Criminalistics	3	1	0	40	60	100	4
BHFSS1-105	Introduction to Forensic Science Practical	0	0	4	60	40	100	2
BHFSS1-106	Crime and Society Practical	0	0	4	60	40	100	2
	<b>Total</b>	-	-	-	280	320	600	19

**Total Credits = 19**

<b>SEMESTER 2<sup>nd</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-201	Criminal Law	3	1	0	40	60	100	4
BHFSS1-202	Forensic Psychology	3	1	0	40	60	100	4
BHFSS1-203	English/MIL Communication	3	0	0	40	60	100	3
BHFSS1-204	Forensic Chemistry	3	1	0	40	60	100	4
BHFSS1-205	Criminal Law Practical	0	0	4	60	40	100	2
BHFSS1-206	Forensic Psychology Practical	0	0	4	60	40	100	2
	<b>Total</b>	-	-	-	280	320	600	19

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**Total Credits = 22**

<b>SEMESTER 3<sup>rd</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-301	Forensic Dermatoglyphics	3	0	0	40	60	100	3
BHFSS1-302	Technological Methods in Forensic Science	3	0	0	40	60	100	3
BHFSS1-303	Criminalistics	3	0	0	40	60	100	3
BHFSS1-304	Introduction to Biometry	3	0	0	40	60	100	3
BHFSS1-305	Forensic Biology and Serology	3	1	0	40	60	100	4
BHFSS1-306	Forensic Dermatoglyphics Practical	0	0	4	60	40	100	2
BHFSS1-307	Technological Methods in Forensic Science Practical	0	0	4	60	40	100	2
BHFSS1-308	Criminalistics Practical	0	0	4	60	40	100	2
<b>Total</b>		-	-	-	<b>380</b>	<b>420</b>	<b>800</b>	<b>22</b>

**Total Credits = 26**

<b>SEMESTER 4<sup>th</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-401	Forensic Chemistry	3	1	0	40	60	100	4
BHFSS1-402	Questioned Documents	3	1	0	40	60	100	4
BHFSS1-403	Forensic Biology	3	1	0	40	60	100	4
BHFSS1-404	Handwriting Identification and Recognition	3	1	0	40	60	100	4
BHFSS1-405	Forensic Dermatoglyphics	3	1	0	40	60	100	4
BHFSS1-406	Forensic Chemistry Practical	0	0	4	60	40	100	2
BHFSS1-407	Questioned Documents Practical	0	0	4	60	40	100	2
BHFSS1-408	Forensic Biology Practical	0	0	4	60	40	100	2
<b>Total</b>		-	-	-	<b>380</b>	<b>420</b>	<b>800</b>	<b>26</b>

**MRSPTY B.SC. (HONS.) FORENSIC SCIENCE SYLLABUS  
BATCH 2021 ONWARDS (3 YEARS COURSE)**

**Total Credits = 20**

<b>SEMESTER 5<sup>th</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-501	Forensic Ballistics	3	1	0	40	60	100	4
BHFSS1-502	Forensic Toxicology	3	1	0	40	60	100	4
BHFSS1-503	Digital Forensics	3	1	0	40	60	100	4
BHFSS1-504	Economic Offences	3	1	0	40	60	100	4
BHFSS1-505	Forensic Ballistics Practical	0	0	4	60	40	100	2
BHFSS1-506	Forensic Toxicology Practical	0	0	4	60	40	100	2
<b>Total</b>		-	-	-	<b>280</b>	<b>320</b>	<b>600</b>	<b>20</b>

**Total Credits = 32**

<b>SEMESTER 6<sup>th</sup></b>		<b>Contact Hrs.</b>			<b>Marks</b>			<b>Credits</b>
<b>Subject Code</b>	<b>Subject Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Int.</b>	<b>Ext.</b>	<b>Total</b>	
BHFSS1-601	Forensic Anthropology	3	1	0	40	60	100	4
BHFSS1-602	Forensic Medicine	3	1	0	40	60	100	4
BHFSS1-603	Forensic Serology/Accident Investigations	3	1	0	40	60	100	4
BHFSS1-604	Dissertation	0	0	32	0	700	700	16
BHFSS1-605	Forensic Anthropology Practical	0	0	4	60	40	100	2
BHFSS1-606	Forensic Medicine Practical	0	0	4	60	40	100	2
<b>Total</b>		-	-	-	<b>240</b>	<b>960</b>	<b>1200</b>	<b>32</b>

**Overall Marks / Credits**

Year	Marks	Credits
1 <sup>st</sup>	1200	38
2 <sup>nd</sup>	1600	48
3 <sup>rd</sup>	1800	52
<b>Total</b>	<b>4600</b>	<b>138</b>

**INTRODUCTION TO FORENSIC SCIENCE**

**Subject Code: BHFSS1-101**

**L T P C**

**Duration: (60 Hrs)**

**3 1 0 4**

**Course Objectives:**

- Students will be able to learn the terminology of the subject, fundamental principles and functions of forensic science.

**Course Outcomes:**

- Demonstrate significant knowledge of forensic science to human society and working of the forensic establishment in India and abroad.

**Unit-1**

**(15 Hrs)**

- Functions of forensic science, Historical aspects of forensic science.
- Definitions and concepts in forensic science, Scope of forensic science.
- Need of forensic science.

**Unit-2**

**(15 Hrs)**

- Basic principles of forensic science, Frye case and Daubert standard.
- Branches of forensic science, Forensic science in international perspectives, including setup of INTERPOL and FBI.

**Unit-3**

**(15 Hrs)**

- Duties of forensic scientists, Code of conduct for forensic scientists.
- Qualifications of forensic scientists, Data depiction, Report writing.

**Unit-4**

**(10 Hrs)**

- Hierarchical set up of Central Forensic Science Laboratories, State Forensic Science Laboratories,
- Government Examiners of Questioned Documents, Fingerprint Bureaus, National Crime Records Bureau, and Police & Detective Training Schools

**Unit-5**

**(5 Hrs)**

- Bureau of Police Research & Development, Directorate of Forensic Science and Mobile Crime Laboratories.
- Police Academies. Police dogs. Services of crime laboratories. Basic services and optional services.

**Recommended Text Books / Reference Books:**

- B.B.Nanda and R.K.Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi(2001).
- M.K. Bhasin and S.Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi(2002). S.H.James and J.J.Nord by, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2<sup>nd</sup>Edition, CRC Press, Boca Raton (2005).
- W.G. Eckert and R.K. Wright in Introduction to Forensic Sciences, 2<sup>nd</sup> Edition, W.G. Eckert (ED.),CRC Press, Boca Raton (1997).
- R.Saferstein, Criminalistics, 8<sup>th</sup>Edition, Prentice Hall, New Jersey (2004).
- W.J.Tilstone, M.L. Hastrup and C.Hald, Fisher's Techniques of Crime Scene Investigation, CRC Press, Boca Raton (2013).

**CRIME AND SOCIETY**

**Subject Code: BHFSS1-102**

**L T P C**  
**3 1 0 4**

**Duration: (60 Hrs)**

**Course Objectives:**

- Students will be able to learn the importance of criminology, consequences of crime in society, elements of criminal justice system.

**Course Outcomes:**

- Demonstrate significant knowledge of crime.

**Unit-1 (15 Hrs)**

Definition aims and scope.

- Theories of criminal behaviour – classical, positivist, sociological.
- Criminal anthropology, Criminal profiling.

**Unit-2 (10Hrs)**

- Understanding modus operandi, Investigative strategy.
- Role of media, Elements, nature, causes and consequences of crime.
- Deviant behaviour, Hate crimes, organized crimes and public disorder,

**Unit-3 (15 Hrs)**

- Domestic violence and workplace violence, White collar crimes Victim logy.
- Juvenile delinquency, Social change and crime.
- Psychological Disorders and Criminality, Situational crime prevention.

**Unit-4 (10 Hrs)**

- Broad components of criminal justice system, Policing styles and principles.
- Police's power of investigation, Filing of criminal charges, Community policing.

**Unit-5 (10 Hrs)**

- Policing a heterogeneous society, Correctional measures and rehabilitation of offenders.
- Human rights and criminal justice system in India.

**Recommended Text Books / Reference Books:**

- S.H.James and J.J.Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2<sup>nd</sup> Edition, CRC Press, Boca Raton (2005).
- D.E.Zulawski and D.E.Wicklender, Practical Aspects of Interview and Interrogation, CRC Press, Boca Raton (2002).
- R.Saferstein, Criminalistics ,8<sup>th</sup> Edition, Prentice Hall, New Jersey (2004).

**ENVIRONMENTAL SCIENCE**

**Subject Code: BHFSS1-103**

**L T P C**  
**3 0 0 3**

**Duration: (45 Hrs)**

**Course Objectives:**

- Students will be able to learn the basic knowledge about the environment and its allied problems, develop an attitude of concern for the environment.

**Course Outcomes:**

- Demonstrate the significant knowledge of Motivate learner to participate in environment protection and environment improvement and acquire skills to help the concerned individuals in identifying and solving environmental problems.

**Unit-1**

**(5 Hrs)**

- Hydrosphere, lithosphere, atmosphere and biosphere.
- Definitions with examples; Interaction of man and environment.
- Basic concepts of ecosystem, components of ecosystem, Tropic levels, food chains and food webs, Ecological Pyramids,

**Unit-2**

**(10Hrs)**

- Ecosystem functions, Energy flow in ecological systems, Characteristics of terrestrial fresh water and marine ecosystems,
- Green House Effect, Acid rain, ElNino, Ozone depletion, deforestation, desertification, salination, biodiversity loss; chemical and radiation hazards.

**Unit-3**

**(10 Hrs)**

- Pollution of air, water and land with reference to their causes, nature of pollution.
- Impact and control strategies; perspectives of pollution in urban, industrial and rural areas.
- Habitat Pollution by Chlorinated Hydrocarbons (DDT, PCBs) Dioxinetc, Endocrine disrupting chemicals, Nutrient pollution.

**Unit-4**

**(10 Hrs)**

- Concept of health and sanitation, environmental diseases –infectious (water and air borne) and pollution related, spread and control of these diseases.
- Health hazards due to pesticide and metal pollution, waste treatment, solid waste management, Environmental standards and quality monitoring.

**Unit-5**

**(10 Hrs)**

- Environmental Laws, national movements, environmental ethics–holistic approach of environmental protection and conservation,
- IUCN–role in environmental protection. Concept with reference to UN – declaration, aim and objectives of human right policies with reference to India.
- Recent north-south debate on the priorities of implementation, Environmental Protection Agency (EPA) Oil spills, Waste water treatment, chemical degradation, heavy Metals.

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**Recommended Text Books / Reference Books:**

- Gadgil ,M., &Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
- Gleeson,B. and Low, N.(eds.)1999.Global Ethics and Environment, London, Routledge.
- Gleick, P.H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env.Institute, Oxford Univ. Press.
- Groom, MarthaJ., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology .Sunder land: SinauerAssociates, 2006.
- Grumbine, R. Edward, and Pandit, M.K.2013. Threats from India’s Himalaya dams. Science,339:36-37.
- Mc Cully, P.1996. Rivers no more: the environmental effects of dams (pp.29-64). Zed Books.Mc Neill, John R.2000. Something New Under the Sun: An Environmental History of the Twentieth Century.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
- Pepper, I.L. ,Gerba, C.P. &Brusseau, M.L.2011. Environmental and Pollution Science. Academic Press.
- Rao, M.N. &Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
- Raven, P.H., Hassenzahl, D.M. & Berg, L.R .2012. Environment. 8<sup>th</sup> edition. John Wiley & Sons.
- Rosencranz,A.,Divan,S.,& Noble,M.L.2001.Environmental law and policy in India.Tripathi 1992.
- Sengupta, R. 2003. Ecology and economics: An approach to sustainable development.OUP.Singh,J.S.,Singh,S.P.andGupta,S.R.2014.Ecology, Environmental Science and Conservation .S. Chand Publishing,New Delhi.
- Sodhi, N.S., Gibson, L. & Raven, P.H.(eds).2013. Conservation Biology: Voices from the Tropics. John Wiley &Sons.
- Thapar,V. 1998. Land of the Tiger: A Natural History of the Indian Sub continent.
- Warren,C.E.1971. Biology and Water Pollution Control. WB Saunders.
- Wilson, E.O.2006. The Creation: An appeal to save life on earth. New York: Norton.
- World Commission on Environment and Development.1987. Our Common Future. Oxford University Press



**CRIMINALISTICS**

**Subject Code: BHFSS1-104**

**L T P C  
3 1 0 4**

**Duration: (60 Hrs)**

**Course objective**

- Student will be able to understand the methods of securing, searching and documenting crime scenes and also the art of collecting, packaging and preserving different types of physical and trace evidence at crime scenes.

**Course outcomes:**

- Demonstrate significance knowledge of legal importance of chain of custody and the tools and techniques for analysis of different types of crime scene evidence.

**Unit-1**

**(15 Hrs)**

Definitions and concepts in forensic science, Scope of forensic science, Need of forensic science.

- Basic principles of forensic science, Tools and techniques in forensic science.
- Branches of forensic science, Data depiction, Report writing.
- Forensic science in India: Organizational setup of forensic science laboratories.

**Unit-2**

**(15 Hrs)**

- Definition aims and scope, Theories of criminal behaviour, Criminal anthropology.
- Criminal profiling, Role of media, Elements, nature, causes and consequences of crime.
- Deviant behaviour, Hate crimes, organized crimes and public disorder. Social change and crime.
- Understanding modus operandi. Investigative strategy. Police's power of investigation. Filing of criminal charges. Correctional measures and rehabilitation of offenders.

**Unit-3**

**(15 Hrs)**

- Crime scene investigations, Protecting and isolating the crime scene, Crime scene search methods.
- Documentation of crime scene by photography, sketching and field notes.
- Types, significance and classification of physical and trace evidence. Locard Principle. Collection and care of evidence. Submission of evidence.

**Unit-4**

**(8 Hrs)**

- Chain of custody, Reconstruction of crime scene, Glass evidence – collection, packaging, analysis.
- Matching of glass samples by mechanical fit and refractive index measurements, Fracture analysis and direction of impact.
- Paint evidence– collection, packaging and preservation, Analysis by destructive and non-destructive methods. Importance of paint evidence in hit and run cases.

**Unit-5**

**(7 Hrs)**

Fibre evidence–artificial and man-made fibres, Collection of fibre evidence, Identification and comparison of fibres.

- Soil evidence–importance, location, collection and comparison of soil samples, Tool mark evidence.
- Classification of tool marks. Forensic importance of tool marks. Collection, preservation and matching of tool marks. Restoration of erased serial numbers and engraved marks.

**Recommended Text Books / Reference Books:**

- B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi (2001).
  - S.H. James and J.J. Nord by, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2<sup>nd</sup> Edition, CRC Press, Boca Raton (2005).
  - D.E. Zulawski and D.E. Wick lander, Practical Aspects of Interview and Interrogation, CRC Press, BocaRaton (2002).
  - R. Saferstein, Criminalistics, 8<sup>th</sup> Edition, Prentice Hall, New Jersey(2004).
  - J.L. Jackson and E. Barkley, Offender Profiling: Theory, Research and Practice, Wiley, Chichester(1997). • M.Byrd, Crime Scene Evidence: A Guide to the Recovery and Collection of Physical Evidence, CRC Press, Boca Raton(2001).
  - W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's, Techniques of Crime Scene Investigation, CRC Press, Boca Raton(2013).
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**INTRODUCTION TO FORENSIC SCIENCE PRACTICAL**

**Subject code: BHFSS1-105**

**L T P C  
0 0 4 2**

**(Duration: 4hrs/ week)**

**Course Objectives:**

- This Course will Provide detail idea about different roles, Organizational setup and functions of various Government Departments such as FBI, CBI, RAW, BPRD, NCRB etc, Forensic laboratories and Police in Crime Scene investigations.

**Practical:**

- To study the history of crime cases from a forensic science perspective.
- To cite examples of crime cases in which apprehensions arose because of Daubert standards.
- To review the sections of forensic science at INTERPOL and compare with those in Central Forensic Science Laboratories in India. Include suggestions for improvement safety.
- To study the annual reports of the National Crime Records Bureau and depict the data on different type of crime cases by way of smart art/templates.
- To write report on different type of crime cases.
- To review how the Central Finger print Bureau, New Delhi, coordinates the working of State Finger print Bureaus.
- To examine the hierarchical setup of different forensic science establishments and suggest improvements.
- To examine the list of projects undertaken by the Bureau of Police Research and Development and suggest the thrust areas of research in Police Science.
- To compare and contrast the role of a Police Academy and a Police Training School.
- To compare the code of conduct prescribed by different establishments for forensic scientists.

**CRIME AND SOCIETY PRACTICAL**

**Subject Code: BHFSS1-106**

**L T P C**  
**0 0 4 2**

**(Duration: 4hrs/ week)**

**Course Objectives:**

- In this course student will get knowledge about the theories of crime and criminal with studying various past cases, they will have knowledge about various cases involving juvenile delinquency, impact of stress on victims and study of victimology. How modernisation impacts the crime rate, correlation between deviant behaviour and criminality.

**Practical:**

- To review past criminal cases and elucidate which theory best explains the criminal behaviour of the accused.
- To review crime cases where criminal profiling assisted the police to apprehend the accused.
- To cite examples of crime cases in which the media act as a pressure group.
- To evaluate the post-trauma stress amongst victims of racial discrimination.
- To correlate deviant behaviour of the accused with criminality (take a specific example).
- To evaluate victimology in a heinous crime.
- To examine a case of juvenile delinquency and suggest remedial measures.
- To evaluate how rising standards of living affect crime rate.
- To review the recommendations on modernization of police stations and evaluate how far these have been carried out in different police stations.
- To visit a 'Model Police Station' and examine the amenities vis-à-vis conventional police stations.
- To examine steps being taken for rehabilitation of former convicts and suggest improvements.
- To prepare a portion interrogation cells and suggest improvements