

Department of Forensic-Science

**Institute for Excellence in Higher Education (IEHE),
Bhopal (MP)**



NAAC Re-accredited (Third Cycle) Autonomous College
Under the UGC Scheme with 'A' Grade (CGPA-3.10)

**Program Outcomes (POs),
Program Specific Outcome (PSOs)
&
Course Outcomes (COs)
of
Department of Forensic Science**

B.Sc. (Honours) Forensic Science
(Session: 2021-2022)

COURSES OFFERED IN THE INSTITUTE

Under Graduate Courses

- B. Com. Honours (Management/Account)
- B.A. Honours (Economics/History/Psychology/Sociology/Political Science/English Literature/Hindi Literature/Geography/Fashion Designing)
- **B.Sc. (Physics/Chemistry/Mathematics/Electronics/Biotechnology/Geography/Forensic-Science)**

Post Graduate Courses

- MA (English)
- MA (Economics)
- MA (Social Work)
- MA (History)
- MA (Public Administration)
- MA (Political Science)
- M.Com. (Management)
- M.Sc. (Physics)
- M.Sc. (Chemistry)
- M.Sc. (Biotechnology)
- M.Sc. (Mathematics)

Diploma Programme

- 14 Vocational Programmes

Certificate Programme

- 14 Vocational Programmes

Training Programmes

- 09 Vocational Programmes

Special Programmes

- 03 Vocational Programmes

Department of Forensic-Science

Program Outcomes (PO) of the Under-Graduate Courses Offered in the Institute

- PO1: Domain Knowledge:** Capable of demonstrating comprehensive knowledge & understanding of one or more other disciplines that form a part of an undergraduate programme of study.
- PO2: Critical Thinking:** Critically evaluate practices, policies and theories by following scientific approach to knowledge development. Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- PO3: Problem Solving and Analytical Skills:** Ability to think rationally, analyse situations and solve problems adequately.
- PO4: Information and Digital Literacy:** Capability to use ICT in a variety of learning situations. Demonstrate ability to access, evaluate and use a variety of relevant information sources; and use appropriate software for analysis of data.
- PO5: Communication Skills:** The capacity to communicate effectively using appropriate media, to present complex information in a clear & concise manner. Acquire the learning abilities by focusing on LSRW (Listening, Speaking, Reading & Writing skill, which provide a stage to the students to sharpen their capacity to learn more.
- PO6: Social Interaction and sensitivity towards the societal issues:** Work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group and act together as a group or a team in the interests of a common cause. Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- PO7: Self-directed & Life-long Learning:** Acquire the potential to engage in independent & life-long learning in the broadest context socio-technological changes. Critical sensibility to live experiences, with self-awareness and reflexivity of both and society.
- PO8: Environment and Sustainability:** Understand the issues of environmental contexts & sustainable development.
- PO9: Moral and Ethical Awareness:** Ability to embrace moral/ ethical values in conducting one's life, possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
- PO10: Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- PO11: Research-related skills:** A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing and articulating; Ability to recognize cause and effective relationships, define problems, formulate hypotheses, interpret and draw conclusions from data, ability to plan, execute and report the results of an experiment or investigation. Efficiency to apply one's learning to real life situations or in interdisciplinary areas.
- PO12: Leadership and Management Skills:** Competence to use skills in organizing for people to reach a shared goal. During leading a project, ability to motivate others to complete a series of tasks, often according to a schedule.
- PO13: Employability and Entrepreneurial Skill:** Ability to develop employability skills such as, positive attitude, good business sense, willingness to learn, resilience, ability to work under pressure, optimism, adaptability, perseverance and motivation, and a host of similar skills.

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PROGRAMME OUTCOMES (PO): B.Sc.

Predefined Programme Outcomes	<i>Students taking admission to this program of B.Sc. get equipped with following outcomes:</i>
PO1	Domain Knowledge: Acquiring knowledge of fundamentals, basic Mathematics, domain knowledge of proper scientific models and Computing Specialization from defined problems and explaining the basic scientific principles and methods.
PO2	Scientific thinking: Inculcating scientific thinking and a wareness, getting an ability to use necessary current techniques, skills, and modern tools.
PO3	Problem Analysis: Identifying, formulating, & analysing complex problems, reaching substantiated conclusions using first principles of Mathematics, natural sciences and electronic sciences.
PO4	Communication: Communicate concepts, designs, and solutions of scientific activities effectively and professionally with society at large.
PO5	Information & Digital Literacy: Capability to use ICT in a variety of learning situations. Demonstrate ability to access, evaluate and use a variety of relevant information sources; and use appropriate software for analysis of data.
PO6	Ethical Awareness: Ability to embrace moral/ ethical values in conducting one's life, possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to support the values required for collaborative work such as mutual trust & fairness.
PO7	Environment & Sustainability: Understanding the impact of scientific solutions on societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PO8	Self-directed and Life-long Learning: Acquire the ability to engage in independent and life- long learning in the broadest context socio-technological changes. Critical sensibility to live experiences, with self-awareness and reflexivity of both and society.
PO9	Research-related skills: <ul style="list-style-type: none"> • Acquiring familiarity with emerging areas of different subjects in science and their applications in various spheres of sciences and getting appraise of its relevance in future studies. • Getting ability to apply various statistical tools to research problems and ability to build statistical knowledge and knowing the statistical organization in India and abroad. • Developing scientific intuition, ability and techniques to tackle problems either theoretical or experimental in nature.
PO10	Employability Skill: Ability to develop employability skills such as, positive attitude, good business sense, willingness to learn, resilience, ability to work under pressure, optimism, adaptability, perseverance and motivation, and a host of similar skills.

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Programme Specific Outcomes (PSO): Forensic Science (Honours/Major Subject)

Programme Specific Outcomes	<i>The students taking up this program of B.Sc. (BA/B.Sc./ B.Com.) with Forensic Science (Honours/Major) as a special subject of study, receive the following outcomes:</i>
PSO-1	The students will understand the nature and fundamentals of Forensic Science, Criminalistics, Crime Scene Management, Forensic Physics and Ballistics, Forensic Chemistry, Forensic Biology, Cyber Forensics, Some specific Indian Laws (i.e. IPC, CrPC, IEA and Indian Constitution etc.), Questioned Documents, Fingerprints and other impression's examination.
PSO-2	The students will be able to apply various conventional and modern scientific tools, techniques, methods and procedures of physical, chemical and biological as well as the cyber and computer sciences in the field of Forensic Science.
PSO-3	The students will learn to perform examinations of different forensically important exhibits (physical evidences) encountered in cases of murder, rape, suicide, accidental death, theft, illegal trafficking, cyber-crimes, fire, arson and explosion, forgery as per the laboratory standards or SOPs.
PSO-4	The students will be able to form opinions or to give scientific reports in the court of law.
PSO-5	The students will be able to learn the use of new ICT tools in diverse fields of forensic science.
PSO-6	The students will be able to learn the moral or ethical values of a forensic scientist.
PSO-7	The students will be able to develop new, economical and eco-friendly methods, tools, techniques or hand-held devices, kits etc. to safeguard the nearby ecosystem or environment.
PSO-8	The students will be able to understand about the boundaries of criminal justice system at national and international level. This will make them aware about the crime, criminal and investigation process which will help to solve the cases effectively.
PSO-9	The students will be able to acquire knowledge related to the research and innovations done in the field of certain domains of forensic sciences which will promote or motivate them to be involved in the research and development activities.
PSO-10	After completing this course, they will be able to lead in the crime scene management or investigation way better than the normal graduates. The students will also be able to place themselves in different public and private sectors of forensic sciences. Apart from this, they can come up with the start-ups or new business ideas.

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Mapping of PSOs B.Sc. Forensic Science (Honours/Major) with POs (Under-Graduate)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO-1			*	*			*						
PSO-2							*			*		*	
PSO-3	*												
PSO-4		*		*			*		*			*	
PSO-5	*												
PSO-6			*		*	*	*						
PSO-7		*											
PSO-8	*			*		*		*		*		*	
PSO-9	*												
PSO-10		*	*		*			*	*			*	

Course Outcomes (COs)

Semester: I

Introduction to Forensic Science & Criminalistics (Major)

Code: MJS-187

Course Outcomes	<i>The students taking up this course of B.Sc. with Introduction to Forensic Science & Criminalistics (Major) as a special subject of study receive the following outcomes:</i>
CO-1	The student will be able to understand about the organizational setup of forensic science laboratories in India.
CO-2	The student will be able to learn the methods of securing, searching and documenting crime scenes.
CO-3	The student will be able to learn the importance of physical evidence in criminal investigation.
CO-4	The student will be able to learn the art of collecting, packaging and labeling and forwarding different types of physical and trace evidence at crime scenes.
CO-5	After the successfully completing the course, student will be able to join forensic science laboratory, police service. Private detective or security agency or start his/her own investigation agency.

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Semester: I

Introduction to Forensic Science& Criminalistics (Minor)

Code: MNS-188

Course Outcomes	<i>The students taking up this course of B.Sc. with Introduction to Forensic Science& Criminalistics (Minor) as a special subject of study receive the following outcomes:</i>
CO-1	The students will be able to understand about the organizational setup of forensic science laboratories in India.
CO-2	The students will be able to learn the methods of securing, searching and documenting crime scenes.
CO-3	The students will be able to learn the importance of physical evidence in criminal investigation.
CO-4	The students will be able to learn the art of collecting, packaging and labelling and forwarding different types of physical and trace evidence at crime scenes.
CO-5	After the successfully completing the course, students will be able to join forensic science laboratory, police service. Private detective or security agency or start his/her own investigation agency.

Semester: I

Crime Scene Management (Generic Elective)

Code: GES-187

Course Outcomes	<i>The students taking up this course of BA/B.Sc./B.Com. with Crime Scene Management (Generic Elective) as a special subject of study receive the following outcomes:</i>
CO-1	The students will be able to impart understanding of crime scene management along with the searching, collection, preservation, packaging, labelling and forwarding of physical evidences to the forensic science laboratories for their examinations as well as the documentation and reconstruction of scene of crime.
CO-2	The students will be able to understand the challenges of crime scene management
CO-3	The students will be able to study the crime scene evidence of various nature
CO-4	The students will be able to understand the crime scene documentation
CO-5	The students will be able to learn the crime scene photography and reconstruction

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Semester: II

Criminology and Criminal Justice System (Major)

Code: MJS-287

Course Outcomes	<i>The students taking up this course of B.Sc. with Criminology and Criminal Justice System (Major) as a special subject of study receive the following outcomes:</i>
CO-1	The students will be able to learn about the crimes, criminals, police, court procedures and usefulness of IPC, CrPC, IEA etc.
CO-2	The students will be able to understand the significance of criminology
CO-3	The students will be able to learn the causes of crime and criminal behaviour.
CO-4	The students will be able to understand the legal aspects of criminal law and criminal Justice system
CO-5	The students will be able to understand the basics of the constitution of India and various other Indian Laws related to the criminal investigation.

Semester: II

Forensic Chemistry and Toxicology (Minor)

Code: MNS-288

Course Outcomes	<i>The students taking up this course of B.Sc. with Forensic Chemistry and Toxicology (Minor) as a special subject of study receive the following outcomes:</i>
CO-1	To educate the students about the basic concepts of forensic chemistry and toxicology along with the crime scene processing and examinations of chemicals, drugs and poisons of different origin and nature encountered in various cases.
CO-2	Students should be able to define forensic chemistry-related problems clearly, develop testable hypotheses regarding collected evidence, design and execute experiments to analyze this evidence, analyze data using appropriate instrumental and statistical methods, and draw appropriate conclusions.
CO-3	Interpret the functioning of the justice 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 the step-by-step development of the investigative procedures.
CO-4	The student will be able to explain the classification and characteristics of the narcotics, drugs and psychotropic substances, analyse the menace of designer drugs and demonstrate the methods of identifying and purifying narcotics, drugs and psychotropic substances.

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Semester: II

Forensic Dermatoglyphics & Biometrics (Generic Elective)

Code: GES-287

Course Outcomes	<i>The students taking up this course of B.Sc. (BA/BSc/B.Com.) with Forensic Dermatoglyphics & Biometrics (Generic Elective) as a special subject of study receive the following outcomes:</i>
CO-1	To impart understanding of human fingerprints, types and its classification,
CO-2	To understand the mechanism of detection and development of latent fingerprints.
CO-3	To impart the significance of palm prints, lip prints, ear prints, foot prints etc. in the criminal investigation
CO-4	To understand the basic concepts of Biometrics and its significance.
CO-5	To interpret the biometric data.

Semester: III

Forensic Medicine and Anthropology (Honours-I)

Code: S-387

Course Outcomes	<i>The students taking up this course of B.Sc. with Forensic Medicine and Anthropology (Honours-I) as a special subject of study receive the following outcomes:</i>
CO-1	To provide the basic knowledge on the topics of forensic medicine and medical jurisprudence.
CO-2	To impart the understanding of personal identification of living and dead.
CO-3	To make them understand about the thanatology and its significance.
CO-4	To impart the understanding of post mortem examination in criminal investigation.
CO-5	To provide basic knowledge on injuries and its medico-legal significance.

Semester: III

Forensic Biology and Serology (Honours-II/Subsidiary)

Code: S-388

Course Outcomes	<i>The students taking up this course of B.Sc. with Forensic Biology and Serology (Honours-II/Subsidiary) as a special subject of study receive the following outcomes:</i>
CO-1	To impart understanding of handling of different biological samples of animal and plant origin at various scene of crime
CO-2	To impart the understanding on examinations of biological fluids in the forensic science laboratory.
CO-3	To impart the understanding on examinations of hair, fibres and other trace materials of biological origin in the forensic science laboratory.
CO-4	To provide fundamental aspects of DNA profiling and its significance in criminal cases.
CO-5	To provide basic knowledge of scopes of forensic biology/ employability

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Semester: IV

Forensic Physics and Ballistics (Honours-I)

Code: S-487

Course Outcomes	<i>The students taking up this course of B.Sc. with Forensic Physics and Ballistics (Honours-I) as a special subject of study receive the following outcomes:</i>
CO-1	To educate the students about the history, development and types of firearms and its examinations for legal purposes.
CO-2	To educate the students about the forensic aspects of physics to apply its knowledge in criminal investigation
CO-3	To educate the students about the ammunitions and their examinations for legal purposes.
CO-4	To clear the basic concepts of internal, external and terminal ballistics.
CO-5	To educate the students about the legal aspects of ballistics and its scopes.

Semester: IV

Cyber Forensics (Honours-II/Subsidiary)

Code: S-488

Course Outcomes	<i>The students taking up this course of B.Sc. with Cyber Forensics (Honours-II/Subsidiary) as a special subject of study receive the following outcomes:</i>
CO-1	To provide education on the concepts of the conventional and cyber-crimes at national and international level.
CO-2	To provide education on the concepts of the crimes committed by using computer, internet and related technologies.
CO-3	To impart the knowledge on handling of digital evidences at the scene of crime.
CO-4	To impart the knowledge examination of digital evidences for forensic purposes.
CO-5	To teach the basics of IT Act and scope of cyber forensics.

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Semester: V

(Course not continuing in the session 2021-22)

Crime and Society (Honours-I)

Code: S-587

Course Outcomes	<i>The students taking up this course of B.Sc. with Crime and Society (Honours-I) as a special subject of study receive the following outcomes:</i>
CO-1	To educate the students about fundamentals of criminology.
CO-2	To educate the students about elements of crimes, theories and factors of crime.
CO-3	To make students aware about the crimes, criminals, police, courts.
CO-4	To impart the basic knowledge on court procedures along with the criminal justice system of India.
CO-5	To educate the students about police, policing style and scope of criminology.

Semester: V

Criminal Law and Criminal Justice System (Honours-II/Subsidiary) Code: S-588

Course Outcomes	<i>The students taking up this course of B.Sc. with Criminal Law and Criminal Justice System (Honours-II/Subsidiary) as a special subject of study receive the following outcomes:</i>
CO-1	To make students aware about the crimes and criminals in national and international context.
CO-2	To educate the students about the usefulness of IPC.
CO-3	To educate the students about the usefulness CrPC and IEA.
CO-4	To impart the knowledge on the constitution of India and various other Indian Laws in criminal investigation.
CO-5	To educate the students about various laws related to socio economic and environmental crimes.

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Semester: VI

(Course not continuing in the session 2021-22)

Forensic Pharmacology and Drugs of Abuse (Honours-I)

Code: S-687

Course Outcomes	<i>The students taking up this course of B.Sc. with Forensic Pharmacology and Drugs of Abuse (Honours-I) as a special subject of study receive the following outcomes:</i>
CO-1	To make students aware about drugs and its abuse.
CO-2	To impart the knowledge on various pharmacologically active substances along with the legal aspects of abusive drugs in Indian and international context.
CO-3	To educate the students about the search and seizures in case of drugs of abuse.
CO-4	To educate the students about drugs of abuse in sports.
CO-5	To educate the students about the examination of various samples of and related to drugs of abuse.

Semester: VI

Tools and techniques in Forensic Science (Honours-II/Subsidiary)

Code: S-688

Course Outcomes	<i>The students taking up this course of B.Sc. with Tools and techniques in Forensic Science (Honours-II/Subsidiary) as a special subject of study receive the following outcomes:</i>
CO-1	To educate students about the theoretical and practical concepts of spectroscopic techniques and their applications in various forensic fields.
CO-2	To educate students about the theoretical and practical concepts of chromatographic techniques and their applications in various forensic fields.
CO-3	To educate students about the theoretical and practical concepts of sample preparation techniques along with the electrophoresis and its applications in various forensic fields.
CO-4	To educate the students about fundamental aspects of examination of fingerprints, questioned documents and other impressions.
CO-5	To give the basic ideas about various start-ups and self-employability.

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Programme: B.Sc. (Major/Honours-I)

Subject: Forensic Science

Mapping of COs with PSOs for Semester-I (Major)

Course		PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
<i>Paper Title: Introduction to Forensic Science & Criminalistics</i> <i>Paper Code: MJS- 187</i>	CO1	*	*								
	CO2										
	CO3										*
	CO4							*			
	CO5									*	

Mapping of COs and PSOs for Semester-II (Major)

<i>Paper Title: Criminology and Criminal Justice System</i> <i>Paper Code: MJS- 287</i>	CO1				*						
	CO2								*		
	CO3				*						
	CO4						*				
	CO5	*									

Mapping of COs and PSOs for Semester-III (Honours-I)

<i>Paper Title: Forensic Medicine and Anthropology</i> <i>Paper Code: S-387</i>	CO1	*									
	CO2			*							
	CO3		*								
	CO4					*					
	CO5							*			

Mapping of COs and PSOs for Semester-IV (Honours-I)

<i>Paper Title: Forensic Physics and Ballistic</i> <i>Paper Code: S-487</i>	CO1				*						
	CO2			*							
	CO3										
	CO4		*							*	
	CO5	*	*								*

Mapping of COs and PSOs for Semester-V (Honours-I)

<i>Paper Title: Crime and Society</i> <i>Paper Code: S-587</i>	CO1	*									
	CO2		*								
	CO3				*						
	CO4				*				*		
	CO5		*						*		

Mapping of COs and PSOs for Semester-VI (Honours-I)

<i>Paper Title: Forensic Pharmacology and Drugs of Abuse</i> <i>Paper Code: S- 687</i>	CO1	*									
	CO2		*	*							
	CO3					*					
	CO4								*		
	CO5	*									*

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Programme: B.Sc. (Minor/Honours-II)

Subject: Forensic Science

Mapping of COs with PSOs for Semester-I (Minor)

Course		PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
Paper Title: Introduction to Forensic Science Paper Code: MNS- 188	CO1	*	*								
	CO2										
	CO3										*
	CO4							*			
	CO5									*	

Mapping of COs and PSOs for Semester-II (Minor)

Paper Title: Forensic Chemistry and Toxicology Paper Code: MNS- 288	CO1	*									
	CO2		*								
	CO3			*							
	CO4		*								
	CO5			*							

Mapping of COs and PSOs for Semester-III (Honours-II/Subsidiary)

Paper Title: Forensic Biology and Serology Paper Code: S-388	CO1							*			
	CO2		*								
	CO3	*		*							
	CO4					*					
	CO5									*	

Mapping of COs and PSOs for Semester-IV (Honours-II/Subsidiary)

Paper Title: Cyber Forensic Paper Code: S-488	CO1					*					
	CO2						*				
	CO3		*								
	CO4					*					
	CO5	*					*				

Mapping of COs and PSOs for Semester-V (Honours-II/Subsidiary)

Paper Title: Criminal Law and Criminal Justice System Paper Code: S- 588	CO1				*						
	CO2								*		
	CO3				*						
	CO4						*				
	CO5	*									

Mapping of COs and PSOs for Semester-VI (Honours-II/Subsidiary)

Paper Title: Tools and techniques for Science Paper Code: S- 688	CO1	*									
	CO2		*								
	CO3		*	*							
	CO4			*				*			
	CO5										*

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Programme: B.A./B.Sc./B.Com. (Generic Elective) Subject: Forensic Science

Mapping of COs with PSOs for Semester-I (Generic Elective)


Course		PS01	PS02	PS03	PS04	PS05	PS06	PS07	PS08	PS09	PS010
Paper Title: Crime Scene Management Paper Code: GES- 187	CO1	*									
	CO2		*	*							
	CO3										
	CO4				*						
	CO5		*								

Mapping of COs and PSOs for Semester-II (Generic Elective)

Paper Title: Forensic Dermatoglyphics & Biometrics Paper Code: GES- 287	CO1	*									
	CO2	*	*								
	CO3		*								
	CO4					*					
	CO5					*					


(IQAC Coordinator)


(Convenor, Academic Committee)


(HOD, Forensic Science)

संयोजक
अकादमिक समिति
सच्चक्ष्म उत्कृष्टता संस्थान
भोपाल

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(Dr Pragyesh Kumar Agarwal)

Director
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