

3. Evaluative Report of the Department

1. Name of the Department : **Institute of Forensic Science & Criminology**
2. Year of establishment : **2009**
3. Is the Department part of a School/Faculty of the university? : **Faculty of the University**
4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D. Sc., D.Litt., etc.) : **PG, Ph.D.**
5. Interdisciplinary programmes and departments involved : **NA**
6. Courses in collaboration with other universities, industries, foreign institutions, etc. : **NA**
7. Details of programmes discontinued, if any, with reasons : **NA**
8. Examination System: Annual/Semester/Trimester/Choice Based Credit System : **Semester system**
9. Participation of the department in the courses offered by other departments : **NA**
10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including (CAS & MPS)
Professor	1		
Associate Professors			
Asst. Professors	3	2+1(likely to join in June 2014)	
Others			

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Prof. Rajat Sandhir	Ph.D.	Coordinator	Molecular Forensics	20 Years	2
Dr. Shweta	Ph.D.	Asstt. Professor	Forensic Toxicology, Colloidal Chemistry	4 Years	3 (ongoing)
Dr. Vishal Sharma	Ph.D.	Asstt. Professor	Material Science, Finger Print Science	7 Years	3 (ongoing)
Dr Jagdish Rai	Ph.D.	Asstt. Professor	Molecular Biology and Bioinformatics: protein science	4 Years	--

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors : **YES**

Guest Faculty				
1.	5	Dr R. S. Verma	Former Director CSFL Chandigarh	M.Sc., Ph.D
2.	6	Dr S.K. Shukla	(Former Director CSFL Chandigarh)	M.Sc., Ph.D
3.		Prof R.K. Pathak	Department of Anthropology	M.Sc., Ph.D
4.		Dr S.K. Jain	Deputy Director, CSFL Chandigarh	M.Sc., Ph.D

5.		Dr M C Joshi	GEQD, CFSL, Chandigarh	M.Sc., Ph.D
6.	7	Dr Suresh Kumar Sharma	Deptt. of Statistics P.U. Chandigarh	M.Sc., Ph.D
7.		Prof V.L. Sharma	Department of Zoology, PU, Chandigarh	M.Sc., Ph.D
8.		Dr Nidhi	PU, Chandigarh	M.Sc., Ph.D
9.	8	Mr S. S. Basoya	CSFL Chandigarh	M.Sc.
10.	9.	Dr Paul Ramesh	CSFL Chandigarh	M.Sc., Ph.D
11.		Dr Jag Mahinder Singh	GMCH- 32 Chandigarh	M.Sc., Ph.D
12.		Ms Sunita Verma	CSFL Chandigarh	M.Sc.
13.	12	Dr Geeta Joshi	Deptt. of Law P.U. Chandigarh	LLM, Ph.D.

13. Percentage of classes taken by temporary faculty – programme-wise information :
65 Lectures

14. Programme-wise Student Teacher Ratio : 30/10

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

Number of Administrative Staff sanctioned: 01

Filled : 01

Actual :

16. Research thrust areas as recognized by major funding agencies : **UGC/DAE-BRNS**

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

National Funding Agency:

Dr Vishal Sharma:

- i. **DAE YOUNG SCIENTIST RESEARCH AWARD (DAE YSRA)** awarded by BOARD OF RESEARCH FOR NUCLEAR SCIENCES (BRNS), BHABHA ATOMIC RESEARCH CENTER, GOVERNMENT OF INDIA for the project "**LATENT FINGERPRINT DETECTION IN FORENSIC APPLICATION, UTILIZING INORGANIC NANO-PARTICLES: SYNTHESIS AND CHARACTERIZATION**" with research grant of around Rs 16.96 Lakhs, **2011-2014**.
 - ii. Co-Investigator in UGC (IUAC, New Delhi) funded project titled "EFFECT OF SWIFT HEAVY ION IRRADIATION ON ALKALI- ALKALINE BASED OXIDE NANOPHOSPHORS: LUMINESCENCE AND RELATED STUDIES" 2012-2015 (7.91 Lacs).
18. Inter-institutional collaborative projects and associated grants received : NA
- a) National collaboration b) International collaboration
19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.
20. Research facility / centre with
- state recognition
 - national recognition : Yes
21. international recognition Special research laboratories sponsored by / created by industry or corporate bodies : Nil
22. Publications: (from 2012 to till date) --Peer reviewed journals

Prof R.K. Pathak (Former Coordinator)

- (1) Sex and age related non-metric variation of human sternum in a Northwest Indian postmortem sample: A pilot study. **Forensic Science International** (2013); Doi: 10.1016/j.forsciint.2013.02.002(**Impact factor-2.16**) listed in Web of Science, Scopus
- (2) Morphometric sex determination from various sternal widths of Northwest Indian sternums collected from autopsy cadavers: A comparison of sexing

methods. *Egyptian Journal of Forensic Sciences*, 2 (2012): 18-28
doi:10.1016/j.ejfs.2011.12.002. (**Impact factor-new journal**) listed in Web
of Science, Scopus

Dr Vishal Sharma

Citations= 82

h-index=5, i10-index=3

- (1) Potential of $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+},\text{Dy}^{3+}$ inorganic oxide based nano phosphor in Latent fingerprint detection, J Mater Sci (2014) 49:2225-2234 DOI :10.1007/s10853-013-7916-2. (**Impact factor-2.16**) listed in Web of Science, Scopus
- (2) Luminescence and surface properties of Tb^{3+} doped $\text{Sr}_3(\text{VO}_4)_2$ nanophosphors, J Integ. Sc Tech, 2013, 1, 1, 5-8.(**Impact factor-new journal**)
- (3) Spectral and surface investigations of Mn^{2+} doped SrZnO_2 nanocrystalline phosphors J Mater Sci 48, 9 (2013), 3327-3333. (**Impact factor-2.16**) listed in Web of Science, Scopus

Dr Shweta

Citations= 21

h-index=3

- (1) Book Chapter on "Nanostructured Drug Delivery: Toxicological Challenges and Safety Considerations" accepted to be printed in Vol.1: Nanomedicine of the Series "Nanobiomedicine (6 Vol.)
23. Details of patents and income generated : NIL
24. Areas of consultancy and income generated : NIL
25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad :
 - **International Travel grant to Dr Vishal Sharma in May 2014 to present his research work in an International conference (4th International Conference on Colloids) at Madrid (Spain) by SERB, DST, Govt of India.**
26. Faculty serving in
 - a) National committees b) International committees c) Editorial Boards d) any other (please specify) :Academic /Technical

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

The entire Faculty have attended the Orientations as well as refresher courses in their respective disciplines.

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects : **All the M.Sc. 4th semester students have to work on a project/problem to complete his/her dissertation work.**
- percentage of students doing projects in collaboration with other universities / industry / institute : NA

29. Awards / recognitions received at the national and international level by

- Faculty : **Young Scientist Award (DAE)**
- Doctoral / post doctoral fellows
- Students : NA

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. : NA

31. Code of ethics for research followed by the departments : **YES**

32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Sc. IFSC	118	6	9	33.3	77.7
Ph.D	10	3	5	30	50

33. Diversity of Students

Name of the Programme (refer to question no.4)	% of students from the same university	% of students from other universities within the State	% of students From universities outside the State	% of students from other countries
PG	46.6			3.3

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

- (i) **Almost 50% of the M.Sc. students have cleared the UGC (NET) examination.**
- (ii) **While others have cleared Directorate of Forensic Science (DFS), Bank PO, Punjab Public Service Commission, Narcotics Bureau etc. examinations.**

35. Student progression

Student progression	Percentage against enrolled
UG to PG	NA
PG to M.Phil.	NA
PG to Ph.D.	5
Ph.D. to Post-Doctoral	NA
Employed <input type="checkbox"/> Campus selection <input type="checkbox"/> Other than campus recruitment	Yes, 7 students
Entrepreneurs	

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	Nil
from other universities within the State	
from universities from other States	
from universities outside the country	

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

38. Present details of departmental infrastructural facilities with regard to
- a) Library : **well-maintained library with No. of useful Books for students**
 - b) Internet facilities for staff and students : **Yes , Wi- Fi**
 - c) Total number of class rooms: **2**
 - d) Class rooms with ICT facility: **01**
 - e) Students' laboratories :**2**
 - f) Research laboratories:**1**
39. List of doctoral, post-doctoral students and Research Associates
- a) from the host institution/university :
Qutsia Tabasum, Dolly Manha, Nikita, Monika, Ankush Parmar
 - b) from other institutions/universities :
Raj Kumar, Amrita Kumari Das, Shivpoojan Kori
40. Number of post graduate students getting financial assistance from the university: 3
41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.
42. Does the department obtain feedback from
- a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? Yes
 - b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? Yes
 - c. alumni and employers on the programmes offered and how does the department utilize the feedback? Yes
43. List the distinguished alumni of the department (maximum 10) Qutsia Tabasum, Neha Verma, Nitika wadhwa, Astha, Dolly, Ankush, Monika, Gagandeep, Ruchi, Sandeep
44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.
Special lecture on DNA fingerprinting in April 2014 by Dr Deepti from Govt. Medical College & Hospital Sector 32 Chandigarh
45. List the teaching methods adopted by the faculty for different programmes. : **Oral, Power Point & visual Presentation**

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The higher percentage of placements of our students in different organizations

47. Highlight the participation of students and faculty in extension activities.
48. Give details of “beyond syllabus scholarly activities” of the department.
- (i) **Journal club every week for PhD & M.Sc. students.**
 - (ii) **Real time exposure to the forensic case work by attachments of students at Central Forensic Science Laboratory, Chandigarh.**
 - (iii) **Summer training of 4-8 week at various laboratories of CBI, CFSL, State FSLs etc.**
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. : NA
50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

The application of science to the law and exploring the body of knowledge regarding delinquency and crime as social phenomena is what comprise the Institute of Forensic Science & Criminology (IFSC). The institute has been incepted by Panjab University from session 2009-2010. Forensic science is the diverse collection of scientific techniques. In practice, forensic science is built upon the principles dragged from physics, chemistry, biology, anthropology and other scientific principles and methods. The Institute of Forensic Science and Criminology aims to impart quality education in Forensic Science to the Post graduated level (M.Sc.) students as well as carrying out research both at doctoral (PhD) and postdoctoral level. Our major strength is that we provide real time exposure of the students to the forensic case work. The Institute is having Memorandum of Understanding between Directorate of Forensic Science, Ministry of Home Affairs (MHA), Govt. of India for mutually providing and sharing human resources and infrastructure facilities in research programmes.

The research in the Institute has been started on developing the latest technology of Latent Fingerprint development utilizing nano-technology. Recognizing this Department of Atomic Energy (DAE) ‘BARC’ (Bhabha Atomic Research Centre) has awarded a research project worth Rs.16.96 lac from 2011-14. The thrust areas of Research in the Institute are Forensic Toxicology, Nanotechnology in Fingerprint Science, DNA Profiling and Identification of Human skeleton remains, Estimation of Age & Sex based upon bone density measurements, Ion Beam Analysis (IBA) in Forensic Science.

Offshoot aim of the Institute is utilizing scientific power in producing 'scientific workforce' to meet the needs of highly technical personnel to serve the society in an effective and efficient way.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

- (i) **Real time exposure to the forensic case work by attachments of students at Central Forensic Science Laboratory, Chandigarh.**
- (ii) **Summer training of 4-8 week at various laboratories of CBI, CFSL, State FSLs etc.**
- (iii) **A large no. of UGC (JRF/NET) produced (almost 50% since the institute started in 2009)**
- (iv) **Regular up gradation of the syllabi as per the requirements.**
- (v) **Exposure of the students towards the research in Forensic Discipline in the form of Dissertation Project in the M.Sc. 4th semester.**

52. Future plans of the department.

In its future plans the Institute intends to develop the state of art laboratories so that it could come up as the referral centre for analysis of forensic cases pertaining to poisoning, audio-video, DNA profiling and identification of human skeleton remains. For this it is desirable to establish Toxicology Laboratory, Audio-video Laboratory, DNA Laboratory and human Osteology laboratory.