

3. Evaluative Report of the Department

1. Name of the Department : UCIM

The University Centre of Instrumentation and Microelectronics (UCIM) was established in 1995 and offers M.Tech. (Instrumentation) and M.Sc. (Instrumentation) Courses, each of 2 years (4 semesters) duration. The objective of the centre is to generate trained manpower for Modern Sophisticated 96 Instrumentation and for Microelectronics applications. The facilities available have been supplemented by combining with it the DST funded Sophisticated Analytical Instrumentation Facility (SAIF), Central Instrumentation Laboratory (CIL) and University Science Instrumentation Centre (USIC) which are housed in the same building.

2. Year of establishment : 1995

3. Is the Department part of a School/Faculty of the university? Faculty of Engg. & Tech.

4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.).

Name of Programme	Specialization	Duration	Full-time/Part-time
M.Tech.	(Instrumentation)	02 Years	Full time
M.Sc	(Instrumentation)	02 Years	Full time

5. Interdisciplinary programmes and departments involved
Nil

6. Courses in collaboration with other universities, industries, foreign institutions, etc. : MOU with CSIO

7. Details of programmes discontinued, if any, with reasons : -None-

8. Examination System: Annual/Semester/Trimester/Choice Based Credit System : Semester System

9. Participation of the department in the courses offered by other departments : None

10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	01	--	--
Associate Professors	01	--	--
Asst. Professors	02	02	02
Others	02	02	02

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

Name	Qualification	Designation	Specialization	No. of Years of Experience	N0. of Ph.D./ M.Phil Students guides for the last 4 years
H.P.S.Kang	B.E. (Electronics) M.E. (Electronics)	Asstt. Professor	Instrumentation	20 Years	--
Poonam Kumari	B.E.(Instrumentation), M.Tech(Instrumentation)	Asstt. Professor	Instrumentation	12 Years	--
Ramesh K.Sharma	M.Tech.(Microelectronics), M.Sc.(Physics)	Asstt. Professor	Microelectronics	6 Years	--
Anil.K.Sharma	M.Tech.(Instrumentation), M.Sc.(Physics),M.Phil(Physics)	Asstt. Professor	Electronics	6 Years	--

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors -None-

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

None-

14. Programme-wise Student Teacher Ratio

Name of the Programme	# of Faculty	# of Students	Student-Teacher Ratio
M.Tech.(Inst.)	04	30	8:1
M.Sc.(Inst.)	04	06	3:2

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

No. of Staff	Sanctioned	Filled	Actual
Technical Staff	--	--	--
Administrative staff	--	01	01

16. Research thrust areas as recognized by major funding Agencies

Sophisticated Analytical Instrumentation Facility (SAIF), Central Instrumentation Laboratory (CIL) and University Science Instrumentation Centre (USIC), are being funded by DST and through Purse Grant from DST.

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. –None–

18. Inter-institutional collaborative projects and associated grants received

a) National collaboration b) International collaboration –None–

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received. –None–

20. Research facility / centre with

- State recognition -----

- National recognition

SAIF, formerly known as RSIC at Panjab University Chandigarh was incepted in the earlier years of the 6th plan. The complete facilities of USIC, CIL, SAIF and RSIC are working in unison in the service of research and also for imparting practical training to the students through workshops. CIL/RISC/USIC The Centre also undertakes the design, fabrication and repair of electronic instruments required by students and teachers from the University and the colleges around. It

also runs training programmes in technical skills for the benefit of scientific community and associated laboratory staff from different institutions.

The Centre houses the following Sophisticated Instruments: Transmission Electron Microscope (TEM) Hitachi (H-7500), Scanning Transmission Electron Microscope (SEM) Model JSM6100 (Jeol) with Image Analyser, Elemental Analyser for CHN (Thermo Scientific), FT-NMR Cryo-magnet Spectrometer 400 MHz (Bruker), X-ray Diffractometer (Powder Method) . Panalytical.s X.Pert Pro, LC-MS Spectrometer Model Q-ToF Micro Waters, Liquid Nitrogen Plant Stirling (StirLIN-1), F.T.Infra-Red Spectrophotometer Model RZX(Perkin Elmer), UV-VIS-NIR Spectrophotometer Model Lambda 750 Perkin Elmer , WD-XRF Spectrometer Model-S8 TIGER Bruker.

- International recognition -----

- | | | |
|-----|--|-------------------------|
| 21. | Special research laboratories sponsored by / created by industry or corporate bodies | --None- |
| 22. | Publications: | |
| | * Number of papers published in peer reviewed journals (national / international) | 23 |
| | * Monographs | -- |
| | * Chapters in Books | 01 |
| | * Edited Books | |
| | -- | |
| | * Books with ISBN with details of publishers | -- |
| | * Number listed in International Database (For <i>e.g.</i> Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) | -- |
| | * Citation Index – range / average | -- |
| | * SNIP | -- |
| | * SJR | -- |
| | * Impact Factor – range / average | -- |
| | * h-index | -- |
| 23. | Details of patents and income generated
SAIF | Rs. 80 Lacs from |
| 24. | Areas of consultancy and income generated | --None- |

25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad –None-
26. Faculty serving in –None-
- a) National committees b) International committees c) Editorial Boards d) any other (please specify) –None-
27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Faculty is encouraged to take part in refresher courses, workshops, seminars etc. to enhance their teaching and technical skills.

- Faculty is also encouraged to runs training programmes in technical skills for the benefit of Scientific community and associated laboratory staff from different institutes.

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects

Number of students	Percentage
12 [M.Tech.(Instrumentation)]	85%
03 [M.Sc..(Instrumentation)]	100%

- percentage of students doing projects in collaboration with other universities / industry / institute

Number of students	Percentage
01 [M.Tech.(Instrumentation)]	7%
00 [M.Sc..(Instrumentation)]	--

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

- Faculty
- Doctoral / post doctoral fellows –None-
- Students

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. –None-

31. Code of ethics for research followed by the departments

Every research paper/ thesis submitted for the award of PhD Degree is being verified by the Plagiarism Software “Turnitin”.

32. Student profile programme-wise: July 2009-June 2013

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Tech.(Instrumentation) 2011-2013	85	09	04	89	100
M.Tech.(Instrumentation) 2012-2014	70	09	04	100	100
M.Sc.(Instrumentation) 2011-2013	07	01	02	100	100

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
M.Tech. (Instrumentation)	34	60	06	
M.Sc. (Instrumentation)	100	--	--	
Ph.D	100	--	--	-

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

*We admit GATE Qualified students to M.Tech.(Instrumentation) Programme.
13 in No per year.*

35. Student progression

Student progression		Percentage against enrolled
UG to PG		N.A.
PG to M.Phil.		N.A.
PG to Ph.D.		None
Ph.D. to Post-Doctoral		None
Employed		
<input type="checkbox"/>	Campus selection	--
<input type="checkbox"/>	Other than campus recruitment	100%
Entrepreneurs		

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	75%
from other universities within the State	--
from universities from other States from	25%
universities outside the country	--

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period -None-
38. Present details of departmental infrastructural facilities with regard to
- a) Library: Number of titles - **approx. 2221 books available in deptt.**
 - b) Internet facilities for staff and students: **Total Wi-Fi connectivity to internet.**
 - c) Total number of class rooms 04
 - d) Class rooms with ICT facility 02
 - e) Students' laboratories 08
 - f) Research laboratories --
39. List of doctoral, post-doctoral students and Research Associates from the host institution/university -None-
- from other institutions/universities -None-
40. Number of post graduate students getting financial assistance from the university. -None-

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

The following points were taken into consideration for starting M.Sc.(Instrumentation)course.

Demand of the course

Details of other institutions offering the course .

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,

All issues related to teaching-learning-evaluation are discussed in departmental Academic & Administrative meetings regularly and Suggestions are implemented after the approval from Board of Studies (BoS).

- b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

The subject teacher gets feed back on curriculum, teaching-learning process etc from students on a regular basis so that measures can be taken to improve the things.

- c. Alumni and employers on the programmes offered and how does the department utilize the feedback? -None-

43. List the distinguished alumni of the department (maximum 10) -None-

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

We have started organizing 5/10 days workshop on Sophisticated Instruments for the aspirants'.

45. List the teaching methods adopted by the faculty for different programmes.

Teaching methods includes:

- *Lectures and discussions*
- *Student presentations;*
- *Group assignments;*

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

Regular Self assessment and feedback from experts.

47. Highlight the participation of students and faculty in extension activities.

Department faculty and students actively participate in extension activities like Symposiums, Seminars, Group Discussions etc

48. Give details of “beyond syllabus scholarly activities” of the department.

Quality components such as group assignments, student presentations etc.

- *Industrial and R&D institutions Visits*

49. State whether the programme/ department is accredited/ graded by other agencies?

If yes, give details.

M.Tech (Instrumentation) programme is approved by AICTE since 1995.

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

M.Tech (Instrumentation) and M.Sc. (Instrumentation) programme focus on basic as well as applied knowledge and skills in Field of Instrumentation that are integrated and delivered in a comprehensive manner to prepare students to cater R&D institutes & industries .

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

Strength

- 1. Department is equipped with the state-of-art sophisticated instruments like NMR, UV-VIS, FTIR, XRD, XRF etc.*
- 2. Research Publications in peer reviewed journals.*
- 3. Academic growth and professional development through Seminars, Workshops, Refresher courses, Conferences etc.*
- 4. DST grants for upkeep and maintenance of Sophisticated Instruments.*

Weakness

- 1. Inadequate faculty strength with Ph.D.*
- 2. Inadequate number of MoUs*
- 3. Number of sponsored major/minor research projects to faculty.*

Opportunities

- 1. PURSE-DST grant from University to promote research projects*
- 2. Training for both Faculty members and Students through workshops/seminars*
- 3. Consultancies and Funded research projects.*
- 4. Provision for interdisciplinary research.*
- 5. Support for faculty in their higher studies with sabbatical leave*

Challenges

- 1. Instability of Job opportunities.*

- 4. Set up a state-of-the-art Research Labs and sensetize the users to SAIF facility on a much wider scale for our teaching, learning & research*
- 5. To have more space for class room/faculty rooms/LABs etc.*

52. Future plans of the department.

Academic

- 1. Strengthening the technical and administrative manpower*
- 2. Redesign curricula on par with the technology growth*
- 3. Introducing new teaching and research programmes*

Placement

- 1. Establishing Industry Institute Interactions*
- 2. Establish MoUs with various companies/ industries*

Research

- 1. Work for sponsored research proposals and projects.*
- 2. Organizing and Hosting national/ International conferences to share research findings and challenges prevailing nationally/internationally*