

**SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY**  
(Deemed-To-Be-University)  
**LONOGOWAL-148106**

**ACADEMIC AUDIT (2023- 2024)**  
**PROFORMA OF ASSESSMENT**


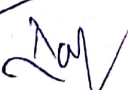
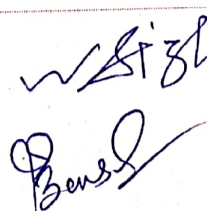

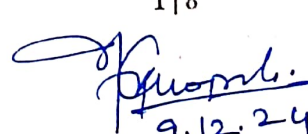
1. Name of the Department: Chemistry
2. Reviewer (Name, Designation & Address): Dr. Narinder Singh, Prof. (Chemistry), IIT, Roopar
3. Date of Review: 09.12.2024

**NOTE:**

- i. Please grade in the box provided for the following parameters in the range of 1-10 with 10 being the highest.
- ii. Leave 'blank' for 'No Comment'.
- iii. Kindly give your opinion on the strength and weakness of the Department and your suggestions for future growth.

**A. ACADEMICS**

A.1	ICD Programme	Score	
		Self- assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/ practical (contents/ratio).	10	09
2.	Equivalence and Relevance of curriculum at national level	10	10
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10	09
4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10	10
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	10	09
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	09	09
7.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10	10
8.	Practical activities, non-academic and totally related to a specific trade for skill development and <i>developing expertise in a particular group of techniques.</i>	09	09
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	09	09
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	09	09
<b>Total Score (out of 100)</b>		<b>96</b>	<b>93</b>

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A.2	UG Programme	Score	
		Self- assessment	Expert assessment
1.	Curriculum (Structure, Course syllabi, Flexibility, Choice based credit system)	10	10
2.	Status of study material developed by faculty for students	10	10
3.	Relevance of contents of courses taught to the students and scope of improvement (revision of syllabus, addition of new experiments)	10	10
4.	Formal academic load on students [Teaching, Laboratory/Practical, Projects(minor/major)]	09	09
5.	Modern teaching methods in practice other than the conventional methods E-Assisted Learning (i) Availability of Library Resources (ii) Multi-Media Assisted Teaching	10	9
6.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation) (i) Theory and tutorial (ii) Practical (case studies)	10	10
7.	Faculty-Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs)	09	09
8.	Tour/Training/Industrial visits/Internship opportunities	09	08
9.	(a) Effectiveness of Assisted Learning in Tutorial classes/seminars for Students	05	04
	(b) Faculty Mentoring/Faculty Advisor System for Students/Class of Students	05	05
10	Placement %age/higher studies options (last three years)	08	07
<b>Total Score (out of 100)</b>		<b>95</b>	<b>91</b>
A.3	PG Programme (Separate for each programme)	Score	
		Self- assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility)	10	10
2.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10	10
3.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10	10
4.	Relevance of contents of courses taught to the students and scope of improvement	10	10
5.	Modern teaching methods in practice other than the conventional method E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching	10	10

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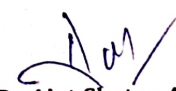
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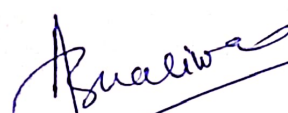
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6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	09	09
7.	Tour/Training/Industrial visits/Internship opportunities	08	08
8.	Collaboration with other departments (within institute)	08	08
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	09	09
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	09	09
<b>Total Score (out of 100)</b>		<b>93</b>	<b>93</b>


A.4	Doctoral (Ph.D.) Programmes	Score	
		Self-assessment	Expert assessment
1.	Intake of Ph.D. Students	08	07
2.	Admission Process	10	10
3.	Pre-Ph.D. Courses and Evaluation Process	10	10
4.	Breadth and Depth of Knowledge of Students	09	09
5.	Seminar/ Presentations and Technical Communication	10	09
6.	Research Facilities available in the Department	08	07
7.	Average No. of Research Students/Faculty	08	08
8.	Average No. of Research Papers of Ph. D. Students (Indexed Journals)	10	10
9.	Average Duration to Complete Ph.D. (years)	09	09
10.	Participation of Research Scholars in Conferences/Workshops	10	09
<b>Total Score (out of 100)</b>		<b>92</b>	<b>88</b>

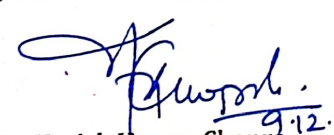
  
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SLIET, Longowal

  
Dr Ajat Shatru Arora  
Prof (EIE)  
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Dr A S Dhaliwal  
Dean (SW)  
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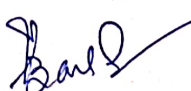
  
Dr. Harish Kumar Chopra  
Prof. & HOD Chemistry  
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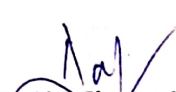
## B. RESEARCH

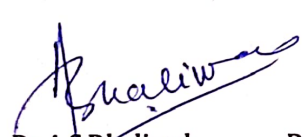
B.1	Research and Industrial collaboration	Score	
		Self-assessment	Expert assessment
1.	Research Ambience in the Department	09	09
2.	Research Awareness among Doctoral Students	09	09
3.	Thrust areas of research in the department	09	09
4.	Quality of Research	10	09
5.	Collaborations with other departments (within the institute) and at National, and international levels.	09	08
6.	Impact and Quality of Publications	09	09
7.	Relevance of Research to Knowledge Generation and Social Relevance	09	09
8.	Student Exposure for Attending Quality Conferences/Symposia	10	10
9.	Inter departmental collaborations	08	08
10.	Industry/externally funded sponsored research. (Numbers and amount)	07	07
<b>Total Score (out of 100)</b>		<b>89</b>	<b>87</b>


## General Comments on,

- Plan of action of the department for the next five years (in view of NEP 2020)
- Significant achievements of the department (faculty/Staff/Students)
- Placement record of the department (Last three years)
- Scope for training of faculty/staff for further strengthening the teaching-learning process for strengthening the curriculum with the addition of new courses having relevance at National and International levels.
- Effective/Continuous monitoring of faculty/staff in delivery the course contents (at departmental level) for enhancing the teaching-learning process.
- Technical Societies/ Colloquium for Students
  - Departmental Society
  - Student Chapter(s) of Professional Societies
- Scope of improvement in the presenting teaching-learning process
- The skill and expertise of the faculty/Technical staff in the department (specific)
- Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use)
- Any other point


  
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 (External Expert)

  
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## C. Departmental Infrastructure

C.1	Departmental resources	Score	
		Self-assessment	Expert assessment
1	Adequacy of Classrooms and Multi-Media Facility	10	09
2	Availability of Laboratories	09	09
3	Availability of Conference/Seminar Room, etc	10	10
4	Availability of Seating Space for Faculty and Research Students	09	08
5	Availability of Internet Services in Research Labs and Classrooms	09	09
6	Departmental Library and E-Resources	09	08
7	Computing Facilities and Software	09	09
8	Adequacy of Offices and Furnishing for Faculty	09	09
9	Faculty- Student Ratio	08	08
10	Support Staff (Technical/Administrative) Adequacy	09	08
<b>Total Score (out of 100)</b>		<b>91</b>	<b>87</b>

## SWOT analysis by the Department:

## Strengths:

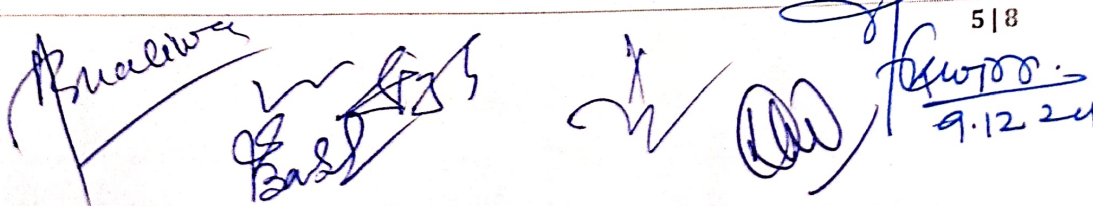
- Dedicated faculty and Staff, Well-equipped laboratories, and well-designed Lab Manuals for all courses.
- Development of Resource Material: Video Lectures, PowerPoint presentations, and question banks
- Continuous review of the syllabus and curriculum by the subject experts.
- Smart Classrooms and focus on Modern Methods of Teaching
- In-house facilities for Internship in addition to Industrial exposure to students via educational tour and internships (Internal and External students)
- Dissertation work in M.Sc.; M.Sc. Result ~ 100% and many students opted for higher studies and placement.
- SLIET Chemical Society and Chemistry Alumni Association.
- Research Profile: Publications in high impact factor journals and high citation Index.
- Intra- and interdepartmental and interuniversity/organizations Universities/organizations collaborative research efforts, including Industry (through PhD Executive Program)
- Books and Book Chapters authored by faculty members.
- Research and Academic Awards conferred to the faculty/students.
- Consultancy Projects and Patents by the Faculty/students.
- The department has Introduced 5-year Integrated B.Sc.-M.Sc. program (2024-25) as per NEP-2020
- Active participation in Global Gender sensitization programs of IUPAC.
- Advanced Analytical Instruments viz. HPLC, GC-MS, CHN Analyzer, UV-VIS spectrophotometer, IR spectrophotometer, Fluorescence Spectrophotometer, BET surface area analyzer etc. are available in the department.
- Major equipment's are available for other external agencies (Institutes/industry) for generation of IRG.
- NET/GATE Guidance; Course Materials for ICD, PPT and Video Lectures for ICD, Degree and PG, Question Bank for ICD and Degree

## Weaknesses:

- Additional Laboratories for UG, PG and Ph.D. students.
- Chemical waste disposal unit.
- Regular Physical Chemistry and Computational Chemistry faculty.
- Regular technicians for Laboratories.
- Subscription of Sci-Finder.
- No externally funded Research Projects.

## Opportunities:

- Starting New programme:
  - (i) 4-year Integrated B.Sc. B.Ed. Programme from 2026-27 in collaboration with other science departments under ITEP programme of GOI.
  - (ii) Online courses on general chemistry in addition to the curricular subjects.

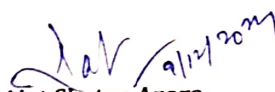

  
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- Chemical waste disposal unit.
- Industry-academic collaborative research,
- MOU's with reputed national/international institutes/industry

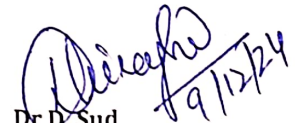
**Challenges:**

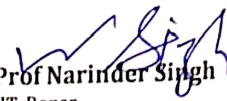
- Admission to Ph.D. Programmes
- Industry-Institute interaction

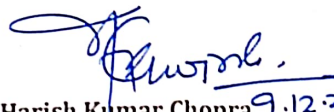
  
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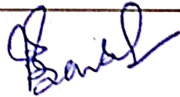
## D. Outcomes

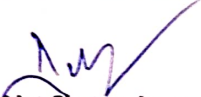
D.1	Placement/ higher studies/ Publications/ Consultancy, Ph.D. awarded etc.	Score	
		Self-assessment	Expert assessment
1	i. Placements for ICD ii. Placement of B.Tech iii. Placement of Masters Student iv. Placement of Ph.D. Students	08	07
2	Average No. of Ph.Ds Awarded per Year	08	08
3	Publications per Faculty in Indexed Journals/Year (Average of last three years)	09	09
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	09	09
5	Recognitions; Awards(National/International) to Faculty/Students	09	09
6	Consultancy and Externally Funded Projects	07	07
7	No. of Ph.D. graduates who took Academics as Career (Last 5 Years)	10	10
8	Students offered for higher studies	09	09
9	No. of qualified students NET/GATE/CAT etc (State/Central Civil Services)	08	08
10	Entrepreneurship	06	06
<b>Total Score (out of 100)</b>		<b>83</b>	<b>82</b>

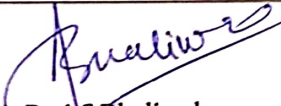
## Comments &amp; Suggestions for Improvement

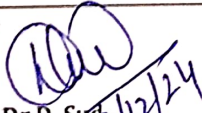
## Suggestions for improvement:

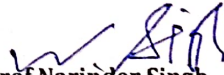
- Revision of curriculum as per NEP-2020 in line with NITs/IITs and introduction of more flexibility to students for industrial collaborative/social projects as per needs of the region/globe.
- MSc students need to be encouraged to participate in National/International conferences. The student may be provided with financial assistance to participate in ONE national conference.
- Admission Procedure for admission to MSc and 5-Year Integrated BSc-MSc Programme needs to be reviewed.
- To foster entrepreneurial spirit among the students, module for entrepreneurship should be included in the course curriculum.
- During curriculum revision the following subjects may be included; Physical Organic Chemistry and Industrial Chemistry.
- All the students should get exposure to the instruments available in the Department of Chemistry.
- The fellowship for Research Scholars to be reimbursed on time.

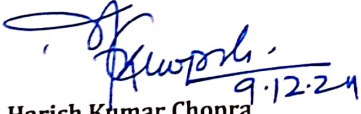
  
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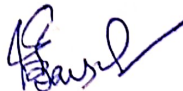
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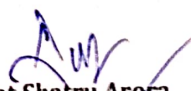
**ACADEMIC AUDIT (2023 - 2024)**  
**SUMMARY SHEET**

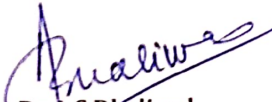
1.	Name of the Department	Chemistry	
2.	Name of Reviewer Designation & Address	From Academia	From Industry
		Dr. Narinder Singh, Prof. Department of Chemistry, IIT, Ropar	-----
3.	Date of Meeting	11.11.2024	


Score Summary							
Academics (A)				Research (Max Score 100)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
ICD Programme (Max Score 100)	UG Programme (Max Score 100)	PG Programme (Max Score 100) (Average of all PG programs)	Doctoral Programme (Max Score 100)				
(A.1)	(A.2)	(A.3)	(A.4)	(B)	(C)	(D)	(A+B+C+D)
93	91	93	88	87	87	82	621

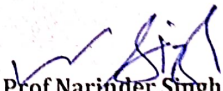
**Note:** 1. Marks mentioned above are the average of the marks given by the experts.  
2. If marks have not been allotted for some attributes by the experts, total score can be scaled to maximum marks.

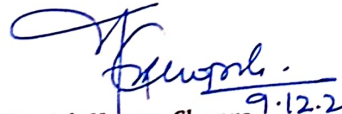
  
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