REF. NO. EIE/2023/1454   DATED:19.12.2023

From:	HOD (EIE)
To:	Dean (Academics)
Subject:	**Academic Audit.**

In reference to letter No. Dean(A)/1275 dated 27th September 2023, the Academic Audit of this Department for the Academic year 2022-23 has been conducted on 19th December 2023. The complete report and recommendations of the committee in original is forwarded please.

HOD (EIE)

Enclosed as above.

D.No. Dean (Acad.)......1947
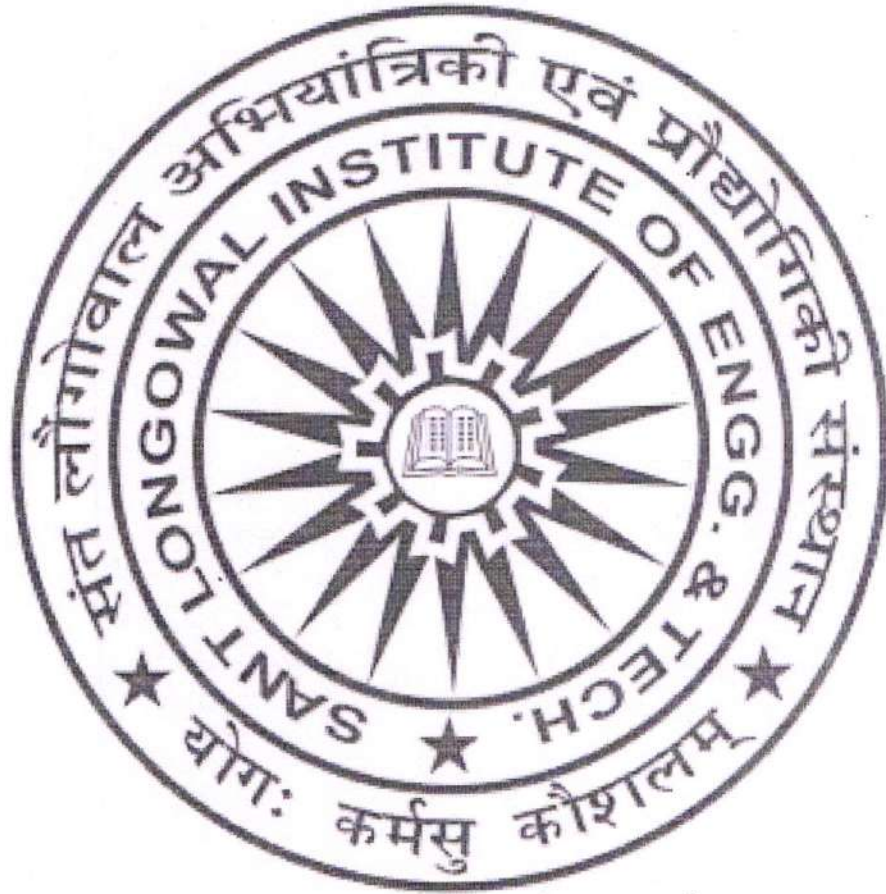Dated....20/12/23
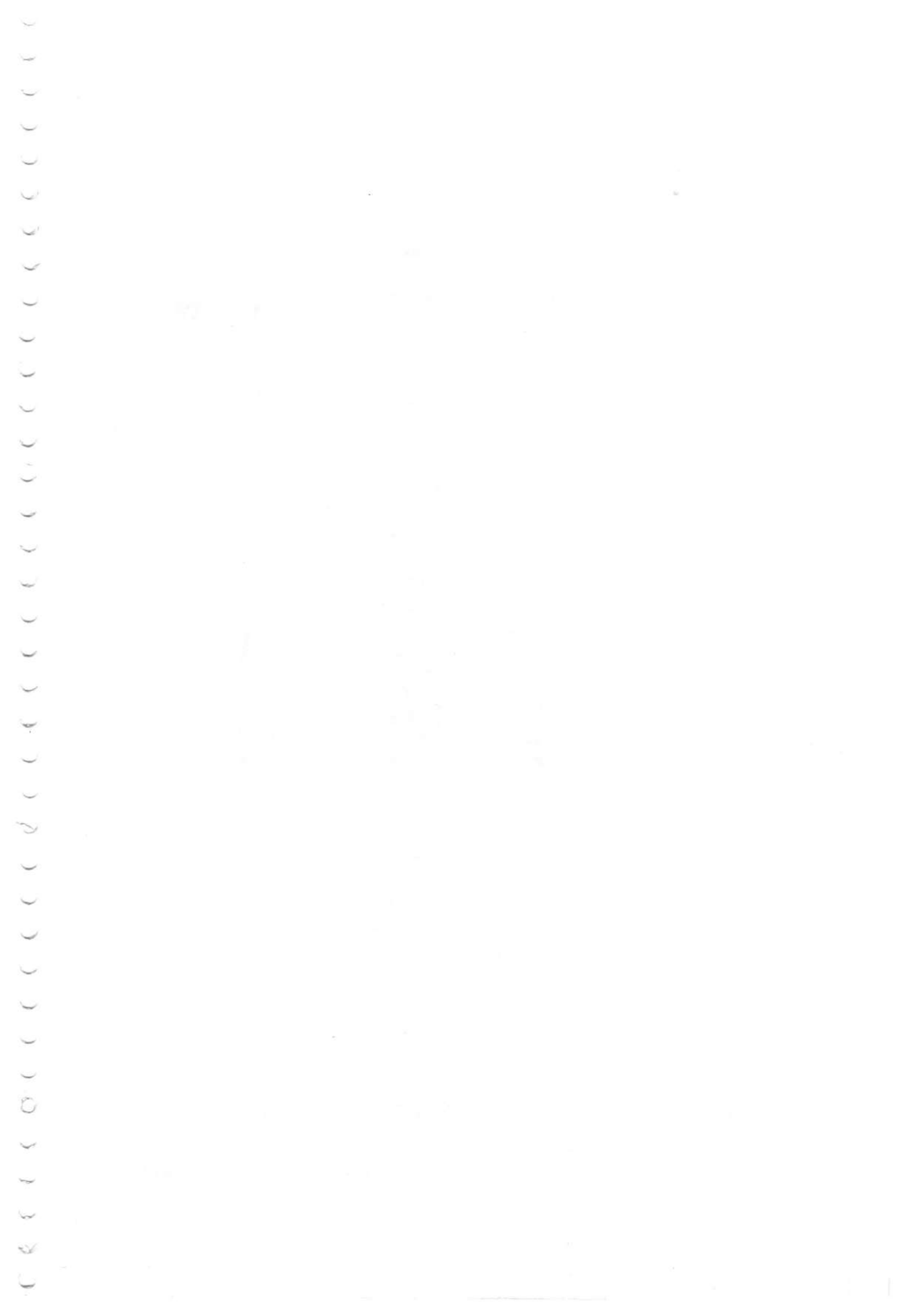
Forwarded

20.12.2023

Coordinator / IQAC.   for record

PS.

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY LONGOWAL
(DEEMED-TO-BE- UNIVERSITY)
(Established by MHRD, Govt. of India)
<u>DEPTT. OF ELECTRICAL & INSTRUMENTATION ENGINEERING</u>

ACADEMIC AUDIT 2022-23
19.12.2023

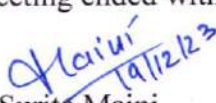## <u>MINUTES OF MEETING (ACADEMIC AUDIT : 2022-23)</u>

Minutes of Meeting held on 19th December 2023 at 10.00 AM in the office of HOD (EIE) pertaining to Academic Audit 2022-23. The following members have attended the meeting.
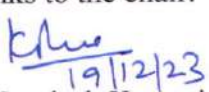
1. HOD (EIE)
2. Dean (P&D)
3. Prof. A.S. Arora, Deptt. of EIE
4. Prof. Pardeep Gupta, Deptt. of Mech. Engg.
5. Dr. Mandeeep Ghai, AsP, Deptt. of M&H
6. Prof. Ravinder Aggarwal, Thapar University Patiala

The recommendations of committee is as under.

➢ The committee appreciated the progress made by the Department since the last Academic Audit in terms of establishing State of Art laboratories.

➢ The committee is of the opinion that more efforts need to be put in fetching the research projects from Government funding agencies.

➢ The committee suggested to consolidate the Departmental Alluminies data so that branch perception and Department perception may be improved.

➢ The committee pointed out to increase the hardware based presentation of B.Tech and M.Tech. project works.

➢ The committee suggested to carry out the activities related to Personality Development and attitude in Departmental Societies.

➢ The committee suggested to put more effort to establishing Industry Sponsored Centre of Excellence where ICD and UG students can experience industrial exposure.

➢ The flexibility in ICD Programme (choice based credit system, industry based syllabus as per NEP) may be adhered to increase the employability of Diploma holders.
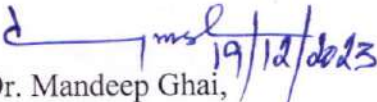
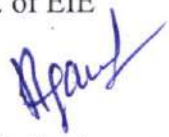The meeting ended with vote of thanks to the chair.
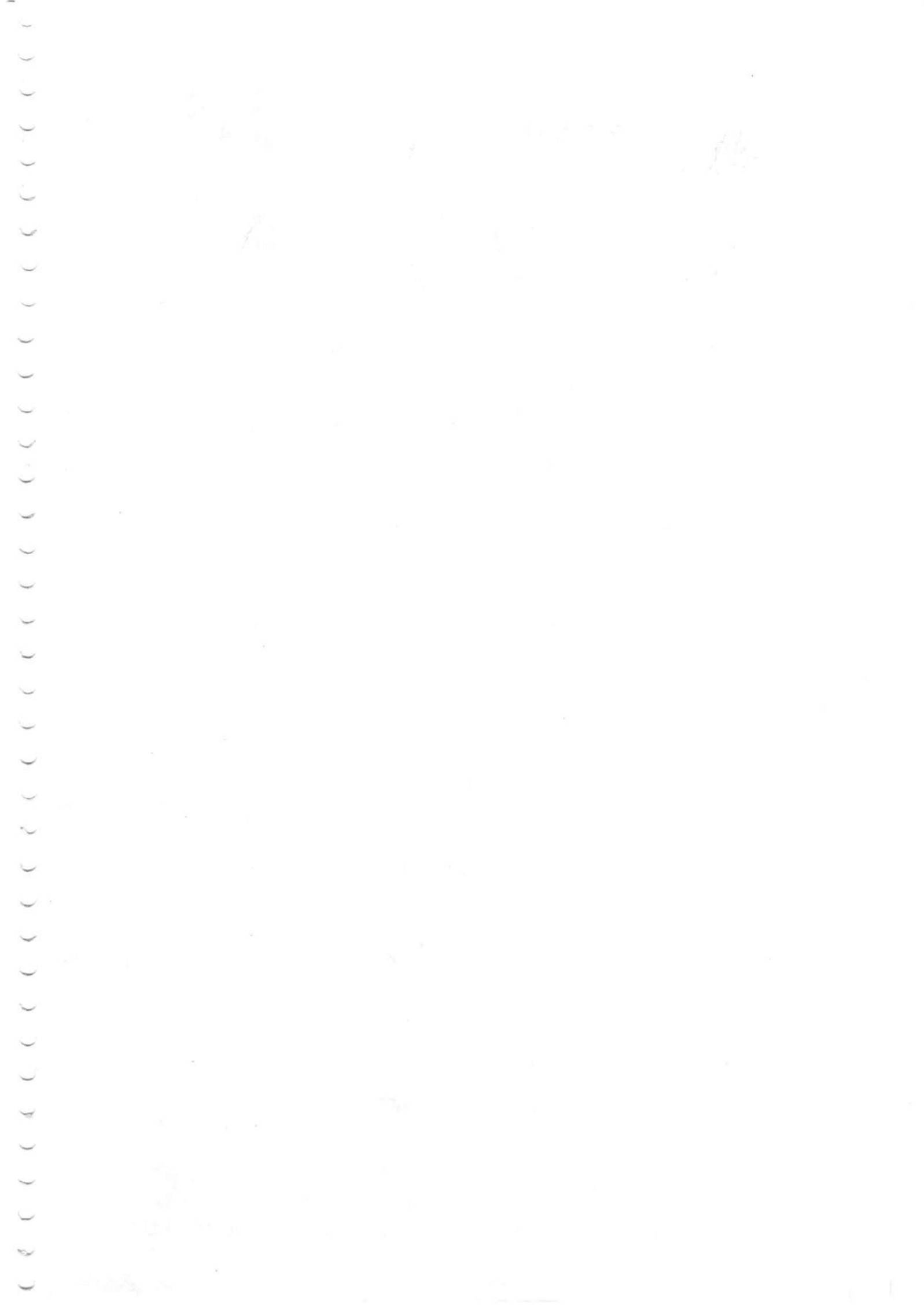
Prof. Surita Maini
HOD (EIE)

Prof. Kamlesh Kumari,
Dean (P&D)

Prof. A. S. Arora,
Deptt. of EIE

Prof. Pardeep Gupta,
Deptt. of Mech. Engg.

Dr. Mandeep Ghai,
Deptt. of M&H

Prof. Ravinder Aggarwal,
Thapar University, Patiala

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY
ACADEMIC AUDIT (2022 - 2023)
PROFORMA OF ASSESSMENT

1. **Name of the Department** : Electrical & Instrumentation Engineering

2. **Reviewer (Name, Designation & Address) :**

Prof. Ravinder Agarwal, Thapar University, Patiala

Prof. Kamlesh Kumari, Dean P&D, SLIET, Longowal

Prof. A. S. Arora, EIE, SLIET, Longowal

Prof. Pradeep Gupta, ME, SLIET, Longowal

Dr. Mandeep Ghai, M&H, SLIET, Longowal

3. **Date of Review:** 19-12-2023

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 strengths and weakness of the Department and your suggestions for future growth.

A. ACADEMICS

A.1	ICD Program	Score		Remarks
		Self assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/ practical (contents/ratio).	10	9	As per NEP 2020 http://eie.sliet.ac.in/scheme-and-syllabi/
2.	Equivalence and Relevance of curriculum at national level	8	8	As per AICTE norms 2020 http://eie.sliet.ac.in/scheme-and-syllabi/
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10	10	As per AICTE norms SLIET Academic Section	Rules and Regulations

		Score		Remarks
4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	9	9	As per AICTE norms SLIET Academic Section	Rules and Regulations
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	7	8	Conducted every year to various industries.
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	8	8	Identification of slow learner and Fast learner and treat them accordingly. Details regarding the batch, assessment, and overall outcomes of the course is available in course file. http://eie.sliet.ac.in/important-notices-and-forms/
7.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	9	9	Class counsellor and Tutor Gurdian Scheme implemented. **http://eie.sliet.ac.in/counselling/**
8.	Practical activities, non-academic and totally related to a specific trade for skill development and *developing expertise in a particular group of techniques.*	9	9	Different activities of clubs and project labs available for students. Supporting students to make projects of their interest and for participating in various activities like tech fest. Workshops for mentoring of students.
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	5	6	ICD restructuring in Process. The Qualification Pack (QP) has been identified in alignment with National Education Policy (NEP).
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	10	9	Available. http://eie.sliet.ac.in/laboratories/
	Total Score (out of 100)	85	85	
	UG Program	**Score**		**Remarks**

		Self assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9	9	As per AICTE norms http://eie.sliet.ac.in/scheme-and-syllabi/
2.	Status of study material developed by faculty for students	10	10	Developed and distributed in class and lab. http://eie.sliet.ac.in
3.	Relevance of contents of courses taught to the students and scope of improvement (revision of syllabus, addition of new experiments)	9	9	As per AICTE norms SLIET Academic Section | Rules and Regulations
4.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10	10	As per AICTE norms SLIET Academic Section | Rules and Regulations

5.	Modern teaching methods in practice other than the conventional methods
	
	E-Assisted Learning
	  (i) Availability of Library Resources
	  (ii) Multi-Media Assisted Teaching
		8	8	Smart classrooms available for ICT based teaching learning. Hard copies and soft copies of books available. Subscription of various Journals (IEEE, IETE, INSA etc.) http://library.sliet.ac.in/journals-magazines/

6.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)
	
	  (i) Theory and tutorial
	  (ii) Practical (case studies)
		10	10	As per AICTE norms SLIET Academic Section | Rules and Regulations

7.	Faculty–Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs	10	10	Yes, Class counsellor and Tutor Gurdian Scheme slot is fixed 12.30 pm every Wednesday. **http://eie.sliet.ac.in/counselling/**
8.	Tour/Training/Industrial visits/Internship opportunities	10	10	Industrial tour organized by Dr. Charanjiv Gupta for final year students of the department. Compulsory 2 weeks and 4 weeks

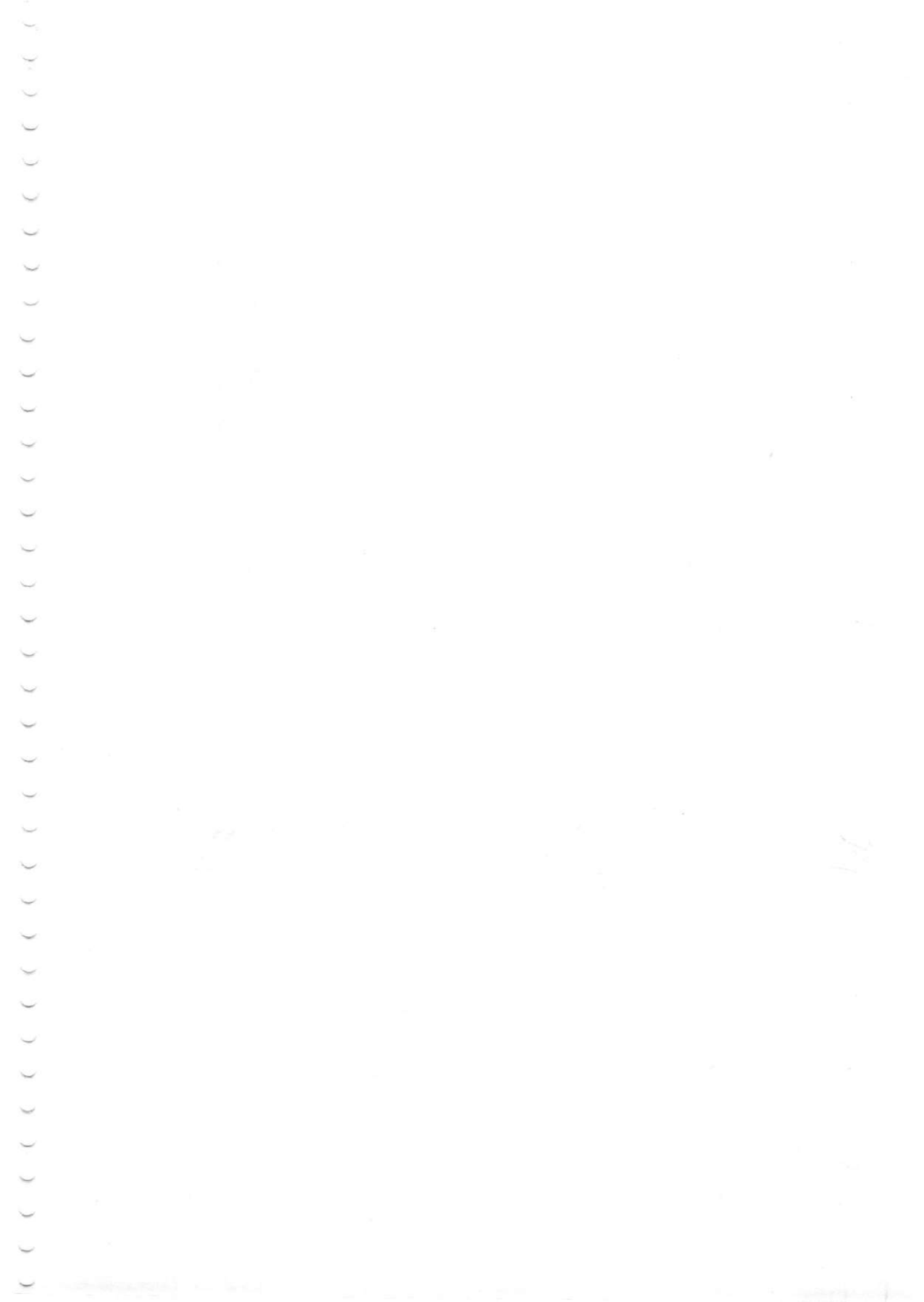| #	Criteria	Score		Remarks
				training for UG students and Optional 6 months internship. http://eie.sliet.ac.in/
9.	Effectiveness of Assisted Learning in Tutorial classes/seminars for Students Faculty Mentoring/Faculty Advisor System for Students/Class of Students	9	9	Identification of slow learner and Fast learner and treat them accordingly. Encourage them to participate in Institute Level Projects and National Level Hackathon. Students are guided to Learn through "DO it Your Self" Details regarding the batch, assessment, and overall outcomes of the course is available in course file. http://eie.sliet.ac.in/important-notices-and-forms/
				Class counsellor and Tutor Gurdian Scheme implemented. **http://eie.sliet.ac.in/counselling/**
10	Placement %age/higher studies options (last three years)	7	8	Placement percentage is increasing. http://eie.sliet.ac.in/students-activities/
	Total Score (out of 100)	92	93	
	PG Program (Separate for each program)	**Score**		**Remarks**
		Self assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9	9	As per AICTE Norms. Also, PG in Electrical Engineering and PG in Biomedical Engineering is being proposed. http://eie.sliet.ac.in/scheme-and-syllabi/

2.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	9	9	As per AICTE norms SLIET Academic Section | Rules and Regulations
3.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10	10	As per AICTE norms SLIET Academic Section | Rules and Regulations
4.	Relevance of contents of courses taught to the students and scope of improvement	9	9	As per AICTE norms and syllabus are updated time to time http://eie.sliet.ac.in/
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	8	9	Smart classrooms available for ICT based teaching learning. Journal subscriptions for updated research. Hard copies and soft copies of books available. Subscription of various Journals (IEEE, IETE, INSA etc.) http://library.sliet.ac.in/journals-magazines/ Plagiarism software Urkund and DrillBit
6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	6	8	Different activities of clubs and project labs available for students. IEEE SLIET Chapter available. Society of Electrical and Instrumentation Technocrates available. http://eie.sliet.ac.in/
7.	Tour/Training/Industrial visits/Internship opportunities	6	8	Industrial visits for research related work.
8.	Collaboration with other departments (within institute)	7	8	Yes. Faculties co-guide students with other departments. http://eie.sliet.ac.in/research-and-

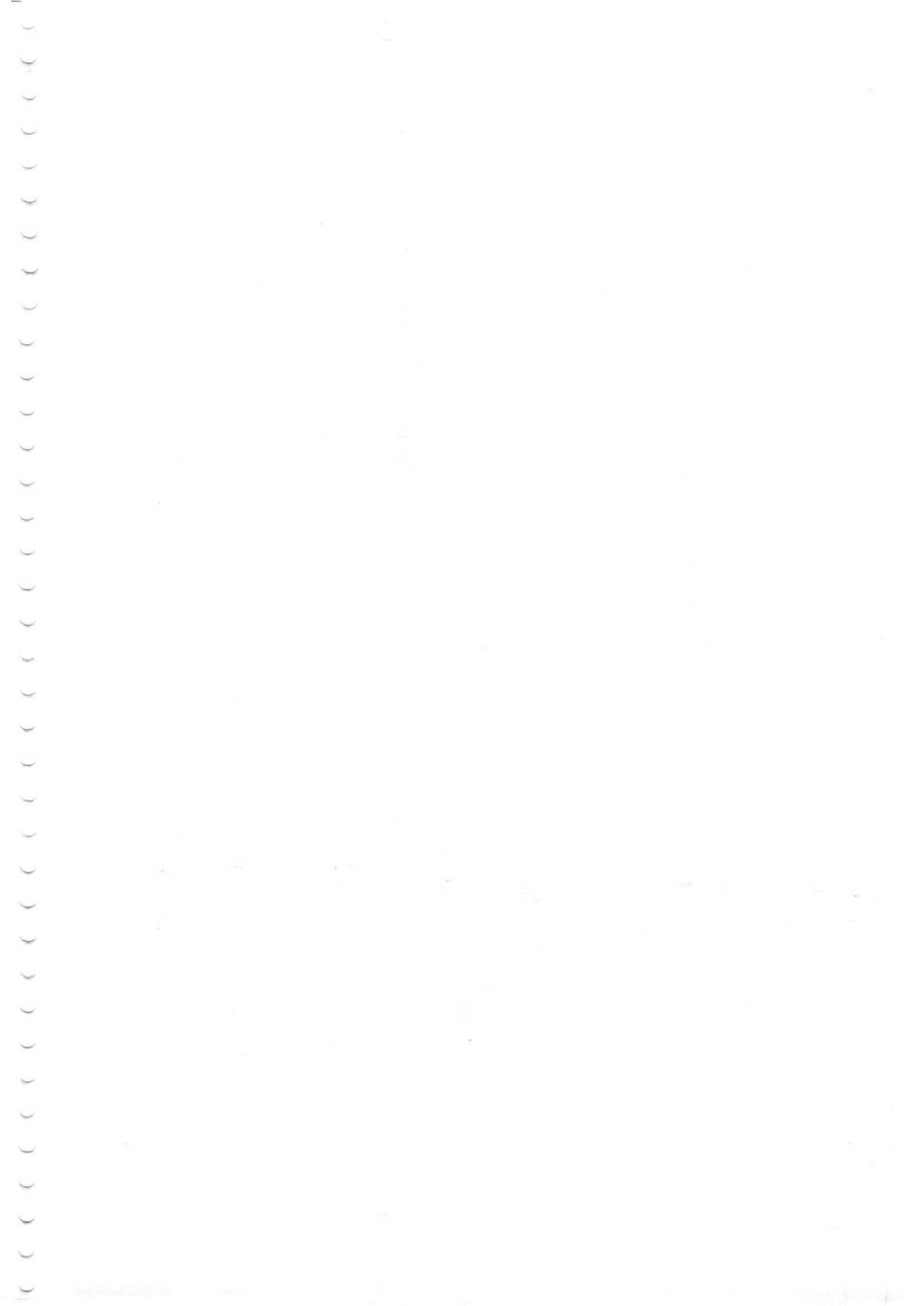|				consultancy/
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	8	9	R&D Monitoring and DRC available http://eie.sliet.ac.in/files/2023/07/Depart ment-Committees-26th-June-2023.pdf
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	8	9	Evaluated at regular intervals by committee formed by HOD as per institute rules. http://academic.sliet.ac.in/ug-pg-cell/ug- pg-phd-academic-rule/
	Total Score (out of 100)	80	88	

A.4	Doctoral (Ph.D) Programmes	Score		
		Self assessment	Expert assessment	
1.	Intake of Ph.D Students	9	8	Intake every year **http://eie.sliet.ac.in/research-and- consultancy/**
2.	Admission Process	10	10	GATE, SET V https://www.slietexam.co.in/#:~:text=C andidate%20shall%20log%20on%20t o,is%20a%205%20Step%20process.
3.	Pre-Ph.D Courses and Evaluation Process	8	9	As per institute rules. http://academic.sliet.ac.in/ug-pg- cell/ug-pg-phd-academic-rule/
4.	Breadth and Depth of Knowledge of Students	8	8	
5.	Seminar/ Presentations and Technical Communication	8	8	Evaluated at regular intervals by committee formed by HOD as per institute rules. http://academic.sliet.ac.in/ug-pg- cell/ug-pg-phd-academic-rule/
6.	Research Facilities available in the Department	9	9	Labs and research facilities available

				http://eie.sliet.ac.in/
7.	Average No. of Research Students/Faculty	8	8	2(aprox.) http://eie.sliet.ac.in/research-and-consultancy/
8.	Average No. of Research Papers of Ph. D Students (Indexed Journals)	8	8	3 (aprox.) http://eie.sliet.ac.in/research-and-consultancy/
9.	Average Duration to Complete Ph.D (years)	8	8	5 years (aprox) http://eie.sliet.ac.in/research-and-consultancy/
10.	Participation of Research Scholars in Conferences/Workshops	8	8	Yes http://eie.sliet.ac.in/research-and-consultancy/
	Total Score (out of 100)	84	84	

B. RESEARCH

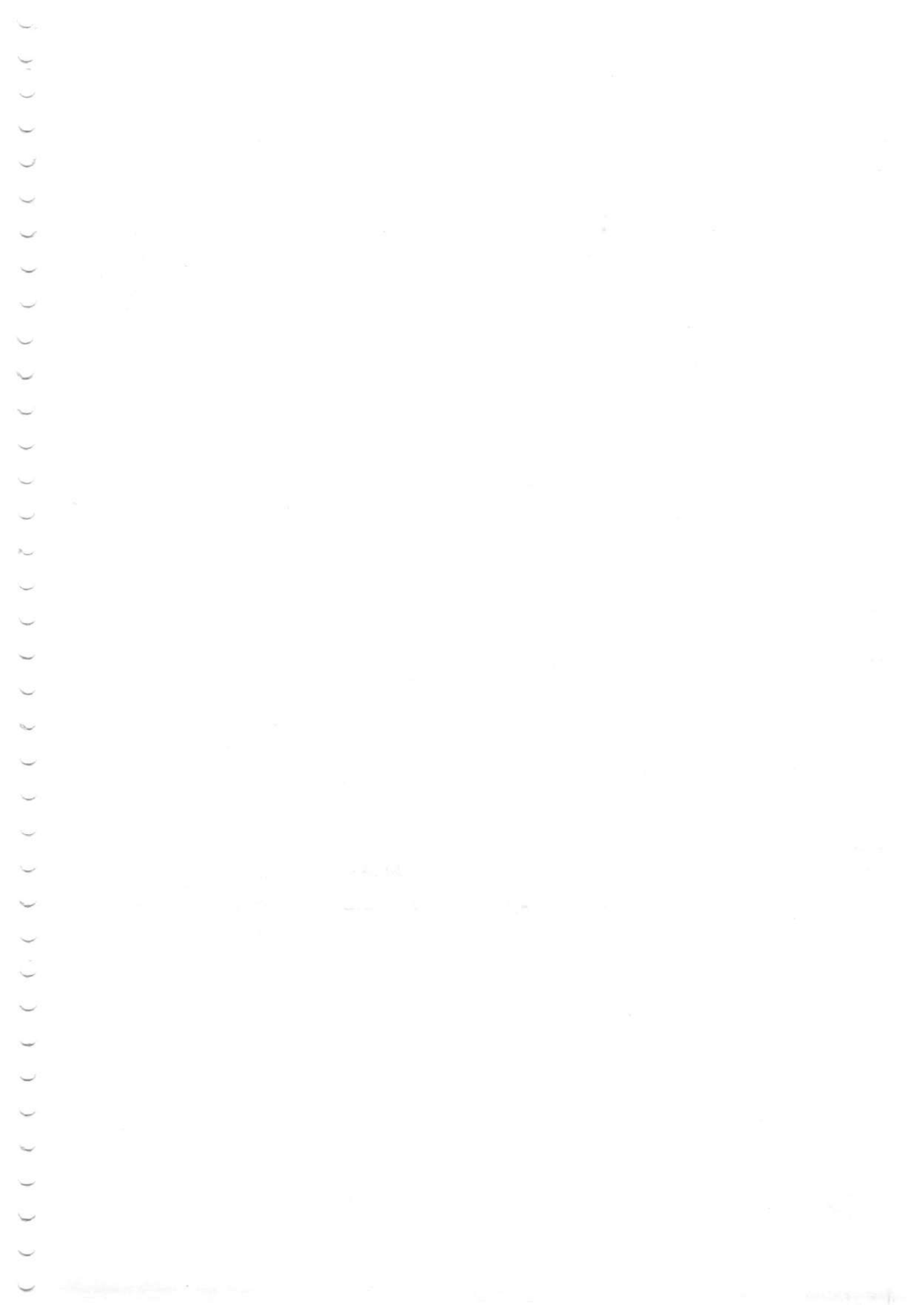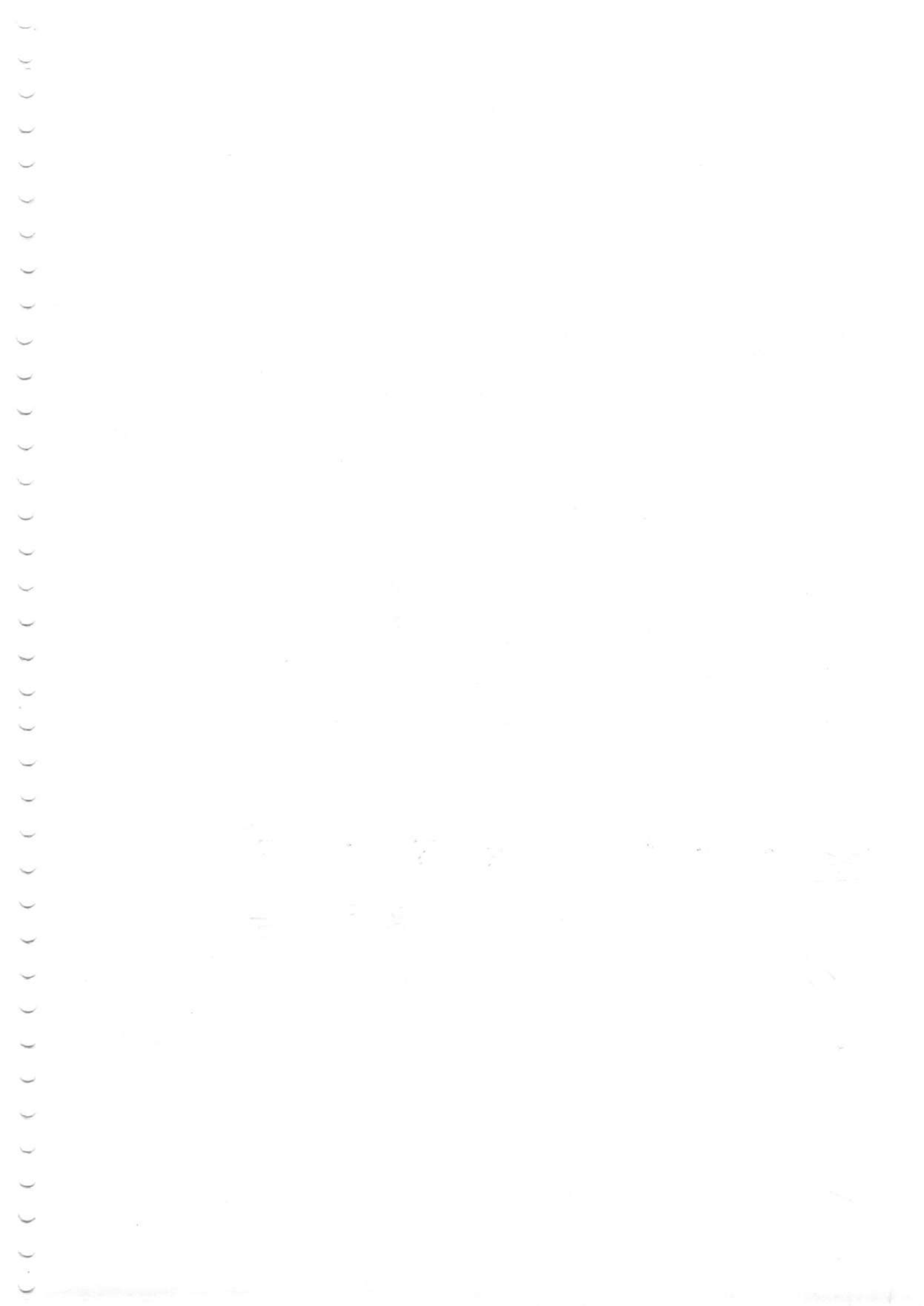|		Score		
		Self assessment	Expert assessment	
1.	Research Ambience in the Department	9	9	Research labs and groups available. http://eie.sliet.ac.in/
2.	Research Awareness among Doctoral Students	9	9	Guided by the R&D Monitoring and DRC committee of the department at frequent intervals. http://eie.sliet.ac.in/
3.	Thrust areas of research in the department	9	9	Research groups available. http://eie.sliet.ac.in/faculty-research-groups/
4.	Quality of Research	8	8	The number of publications and citations increasing. http://eie.sliet.ac.in/research-publication-2/
5.	Collaborations with other departments (within the institute) and at National, and International levels.	8	8	Yes. Faculties co-guide students with other departments. http://eie.sliet.ac.in/research-and-consultancy/
6.	Impact and Quality of Publications	8	8	The number of publications and citations increasing. http://eie.sliet.ac.in/research-publication-2/
7.	Relevance of Research to Knowledge Generation and Social Relevance	8	8	The number of publications and citations increasing. http://eie.sliet.ac.in/research-publication-2/
8.	Student Exposure for Attending Quality	8	8	The number of publications and

					citations is increasing. http://eie.sliet.ac.in/research-publication-2/
9.	Inter departmental collaborations		10	*10*	Yes. Faculties co-guide students with other departments. http://eie.sliet.ac.in/research-and-consultancy/
10.	Industry/externally funded sponsored research (Numbers and amount)		8	*9*	Few externally funded projects are fetched by the faculties of the department. http://eie.sliet.ac.in/research-and-consultancy/
		Total Score (out of 100)	85	*86*	

General Comments on,

1. Plan of action of the department for the next five years (in view of NEP 2020)
2. Significant achievements of the department (faculty/Staff/Students)
3. Placement record of the department (Last three years)
4. 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.
5. Effective/Continuous monitoring of faculty/staff in delivery of the course contents (at departmental level) for enhancing the teaching-learning process.
6. Technical Societies/ Colloquium for Students
   (i) Departmental Society
   (ii) Student Chapter(s) of Professional Societies
7. Scope of improvement in the presenting teaching –learning process
8. The skill and expertise of the faculty/Technical staff in the department (specific)
9. Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use)
10. Any other point

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C. Departmental Infrastructure

		Score		Remarks
		Self assessment	Expert assessment	
1	Adequacy of Class Rooms and Multi-Media Facility	10	10	Smart classrooms are fully functional. http://eie.sliet.ac.in/
2	Availability of Laboratories	9	9	2 new laboratories are setup. http://eie.sliet.ac.in/laboratories/
3	Availability of Conference/Seminar Room, etc	9	9	Conference rooms and smart classrooms are fully functional. http://eie.sliet.ac.in/department-library/
4	Availability of Seating Space for Faculty and Research Students	10	10	New office rooms and conference rooms are allotted to faculties. http://eie.sliet.ac.in/department-library/
5	Availability of Internet Services in Research Labs and Class Rooms	10	10	Yes. http://eie.sliet.ac.in/
6	Departmental Library and E-Resources	9	9	Hard copy and Soft Copy of books are available. Journal subscriptions are available in the institute intranet. http://eie.sliet.ac.in/department-library/
7	Computing Facilities and Software	9	9	Yes. http://eie.sliet.ac.in/
8	Adequacy of Offices and Furnishing for Faculty	9	9	Yes. http://eie.sliet.ac.in/
9	Faculty- Student Ratio	8	8	http://eie.sliet.ac.in/
10	Support Staff (Technical/Administrative) Adequacy	9	9	Yes.

	Total Score (out of 100)	92	*92*	

**SWOT analysis by the department**

Strengths:

1. Well qualified, experienced and dedicated faculty and staff.
2. Significant contribution of faculty at Administrative level of the institute.
3. Good departmental library.
4. High Computational Lab developed for Research Purpose.
5. State-of-the-art laboratories have been established like automation lab; Sensor Network and IoT lab.
6. The department has ICD, UG, PG and PhD programmes for both Electrical Engineering and Instrumentation & Control Engineering.
7. The department has well equipped laboratories for the students to get hands-on experimentation.
8. MoU signed with industries and industry-collaborated labs are in pipe-line.
9. The department has adequate smart classrooms equipped with smart board and sound system for online seminar, conferences and classes.
10. SCI publications are increasing every year.

Weaknesses:

11. Student placement in core companies is not satisfactory.
12. Very few graduation students are opting for higher studies in India, whereas more number of students are opting for higher studies in abroad.
13. Externally funded and consultancy projects are less in number.

Opportunities:

14. The Fee structure and location of the institute can attract the students from weaker section and local people complementing the slogan "Aatam Nirbhar Bharat"
15. Collaboration and Innovation walk in the nearby villages gives the students a lot of opportunities to think explore the innovative ideas, the demand of present scenario.
16. Precision agriculture is the new upcoming field to strengthen agriculture and department has offered subject on this.

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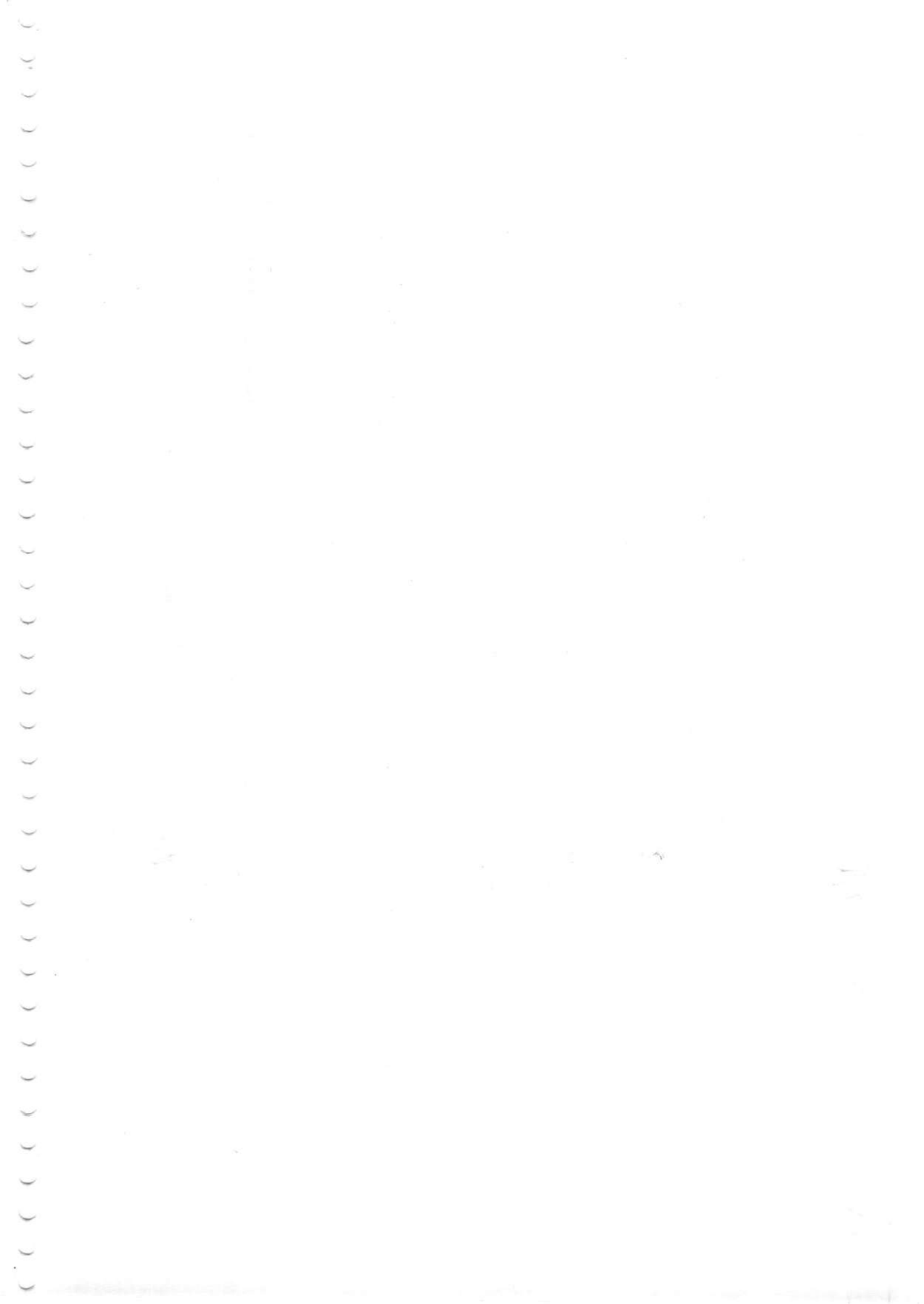
Threats:

17. The location of the institute is not much attractive to fetch quality students and convince companies for placement.
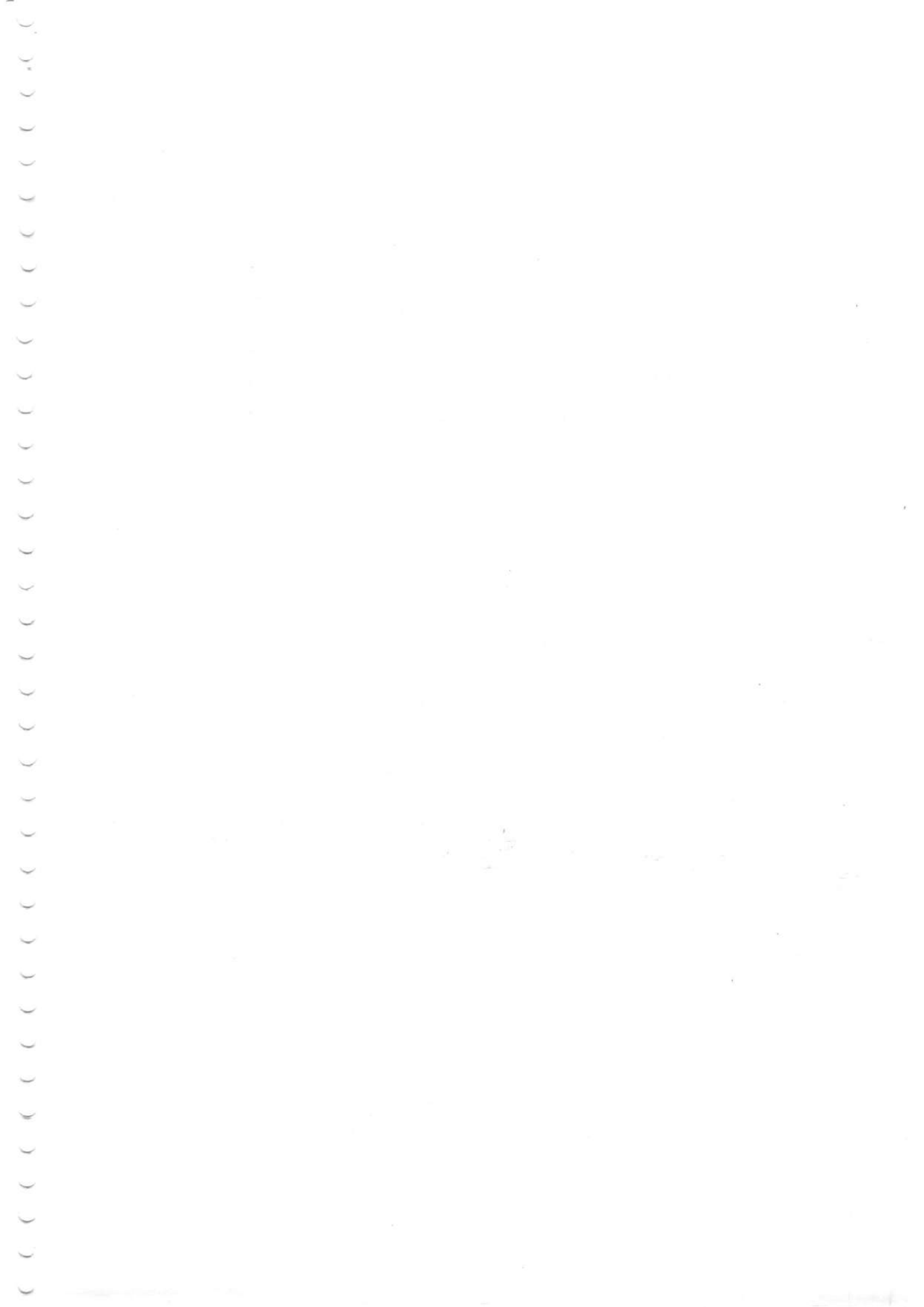
Suggestions for improvement:

1. Industry Collaborated Lab has to be established.

2. Idea to Implementation (i2i) Lab has been planned.

3. ICD restructuring in Process. The Qualification Pack (QP) has been identified in alignment with National Education Policy (NEP).

D.   Outcomes

		Score		Remarks
		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	9	9	Placement percentage increased. http://eie.sliet.ac.in
2	Average No. of Ph.Ds Awarded per Year	7	7	5.33 in the last 3 years. http://eie.sliet.ac.in/research-and-consultancy/
3	Publications per Faculty in Indexed Journals/Year (Average of last three years)	8	8	2.3 http://eie.sliet.ac.in/research-and-consultancy/
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	8	8	62.98 http://eie.sliet.ac.in/research-and-consultancy/
5	Recognitions; Awards(National/International) to Faculty/Students	8	8	Few http://eie.sliet.ac.in/research-and-consultancy/

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| 6	Consultancy and Externally Funded Projects	8	8	03 in last 3 years http://eie.sliet.ac.in/research-and-consultancy/
7	No. of Ph.D. graduates who took Academics as Career (Last 5 Years)	8	8	18 http://eie.sliet.ac.in/research-and-consultancy/
8	Students offered for higher studies	8	8	Almost all ICD students opt for higher studies. UG and PG students also opt for higher studies. http://eie.sliet.ac.in
9	No. of qualified students NET/GATE/CAT etc (State/Central Civil Services)	8	4	Few http://eie.sliet.ac.in
10	Entrepreneurship	8	6	Few http://eie.sliet.ac.in
	Total Score (out of 100)	80	74	

Comments & Suggestions for Improvement

1. Industry Collaborated Lab has to be established.

2. Idea to Implementation (i2i) Lab has been planned.

3. ICD restructuring in Process. The Qualification Pack (QP) has been identified in alignment with National Education Policy (NEP).
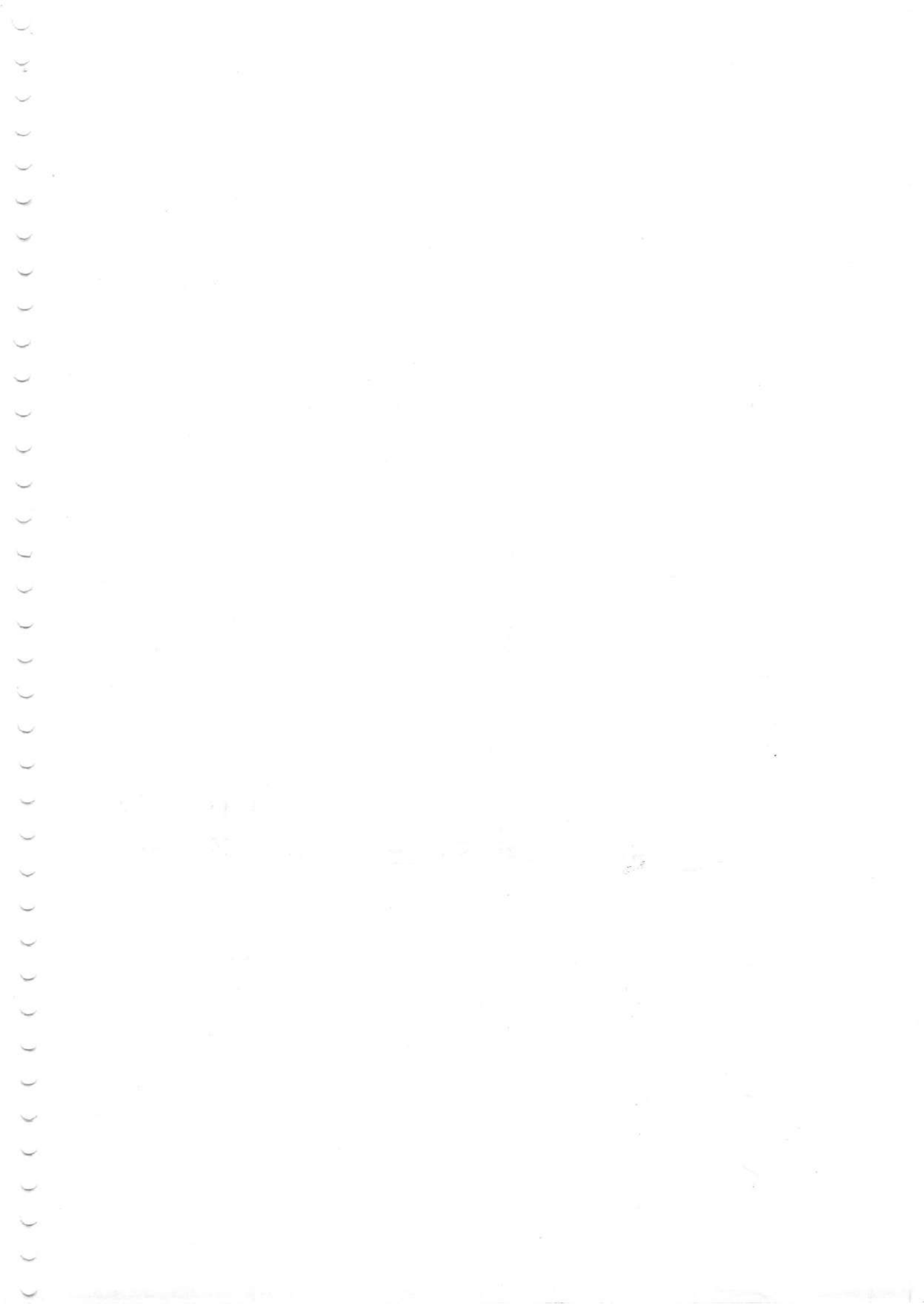
SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2022 - 2023)

SUMMARY SHEET

1.	Name of the Department	Electrical and Instrumentation Engineering	
2.	Name of Reviewer	**From Academia**	**From Industry**
	Designation & Address	Prof. Ravinder Agarwal, Thapar University, Patiala	
3.	Date of Meeting	19-12-2023	

Score Summary (Self)							
Academic				Research (Max Score 100)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
ICD Program (Max Score 100)	UG Program (Max Score 100)	PG Programs (Max Score 100) (Average of all PG programs)	Doctoral Program (Max Score 100)				
85	92	80	84	85	92	80	598

Score Summary (Expert)							
Academic				Research (Max Score 100)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
ICD Program (Max Score 100)	UG Program (Max Score 100)	PG Programs (Max Score 100) (Average of all PG programs)	Doctoral Program (Max Score 100)				
85	93	88	84	86	92	74	602

Note: 1. Marks mentioned above is 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.

Name & Signature of HOD

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