Dated 27/10/2026

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Deemed-To-Be-University)

LONOGOWAL-148106

ACADEMIC AUDIT (2025 - 2026)

PROFORMA OF ASSESSMENT

1. **Name of the Department: Mechanical Engineering**
2. **Reviewer (Name, Designation & Address) : Prof. Hari Singh, Prof. & Head (ME) NIT, Kurukshetra**
3. **Date of Review: 27.10.2026**

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	Integrated Certificate and Diploma (ICD) Programme	Score	
		Self-assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/ practical (contents/ratio).	10	10
2.	Equivalence and Relevance of curriculum at national level	10	10
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10	10
4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10	10
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	10	08
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	10	10
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 developing expertise in a particular group of techniques.	10	10
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	10	09
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	10	09
	Total Score (out of 100)	**100/100**	**96/100**

27/10/26

Prof. Indraj Singh, (ME)

27/X/2026

Prof. Sanjeev Bansal, (M&H)

27/X/26

Prof. Jagtar Singh, (ME)

Jindal

Prof. Navdeep Jindal, AsD (IQAC)

27/10/26

Prof. Surinder Singh (Dean (R&C))

Prof. Hari Singh.
External Expert

27/10/26

Prof. Shankar Singh,
HOD (ME) & Convener

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)]	10	10
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	10
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	10	10
8.	Tour/Training/Industrial visits/Internship opportunities	10	10
9.	(a) Effectiveness of Assisted Learning in Tutorial classes/seminars for Students	10	09
	(b) Faculty Mentoring/Faculty Advisor System for Students/Class of Students		
10	Placement %age/higher studies options (last three years)	10	10
	Total Score (out of 100)	**100/100**	**99/100**

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	10	10

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	method: E-Assisted Learning i. Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching		
6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	10	08
7.	Tour/Training/Industrial visits/Internship opportunities	10	08
8.	Collaboration with other departments (within institute)	08	08
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10	10
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	10	10
	Total Score (out of 100)	**98/100**	**94/100**

A.4	Doctoral (Ph.D.) Programmes	Score	
		Self-assessment	Expert assessment
1.	Intake of Ph.D. Students	06	06
2.	Admission Process	10	10
3.	Pre-Ph.D. Courses and Evaluation Process	10	10
4.	Breadth and Depth of Knowledge of Students	04	04
5.	Seminar/ Presentations and Technical Communication	10	10
6.	Research Facilities available in the Department	10	10
7.	Average No. of Research Students/Faculty	10	07
8.	Average No. of Research Papers of Ph. D. Students (Indexed Journals)	10	10
9.	Average Duration to Complete Ph.D. (years)	04	04
10.	Participation of Research Scholars in Conferences/Workshops	10	10
	Total Score (out of 100)	**84/100**	**81/100**

B. RESEARCH

B.1	Research and Industrial collaboration	Score	
		Self-assessment	Expert assessment
	Research Ambience in the Department	10	10
	Research Awareness among Doctoral Students	10	10
	Thrust areas of research in the department	10	10
	Quality of Research	10	10
	Collaborations with other departments (within the institute) and at National, and international levels.	10	10
	Impact and Quality of Publications	10	10

Prof. Indraj Singh, (ME) Prof. Sanjeev Bansal, (M&H) Prof. Jagtar Singh, (ME)

Prof. Navdeep Jindal, AsD (IQAC) Prof. Surinder Singh (Dean (R&C))

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	Relevance of Research to Knowledge Generation and Social Relevance	10	10
	Student Exposure for Attending Quality Conferences/Symposia	10	10
	Inter departmental collaborations	10	10
	Industry/externally funded sponsored research. (Numbers and amount)	07	07
	Total Score (out of 100)	**97/100**	**97/100**

1. Plan of action of the department for the next five years (in view of NEP 2020):

a) More emphasis to be laid down on Skill development courses.

b) Setting up of two "Centers of Excellence" in (i) Materials processing & Characterization (ii) Material testing & Evaluation Centre

c) On Job training (OJT) will be further strengthened in the department, especially in the following areas:

(i) Welding (ii) CNC machining (iii) Product fabrication & manufacturing (iv) Material testing

d) Software training modules on Software like Auto-CAD, ANSYS, Solid works, Pro-E, CATIA etc. to be further strengthened as a part of in-house training as per the curriculum requirements.

e) Externally funded/Sponsored research projects by the faculty would be submitted by the faculty of the department.

f) International conferences (IESSD'26 and ICMDR 2027) have been planned for academic years 2026-27 and 2027-28, respectively.

g) FDP, STC, Workshops/Seminars (at least twice every year) would be organized.

h) Collaborative research, especially in the thrust areas would be focused.

i) Interdisciplinary research with other departments would be planned with special focus on UG, PG and Ph. D. projects.

j) More focus will be laid down on patent and technology transfer.

k) Efforts will be made to acquire consultancy from industry in the thrust area.

l) The Senate, in its 43rd Meeting held on 10 June 2025, approved two new ICD-Diploma programmes proposed by the Mechanical Engineering Department: ICD-Diploma in Automation & Robotics, and ICD-Diploma in Agricultural Engineering, with an intake of 30 students each. The programmes, named as per AICTE Diploma programme nomenclature, are proposed to be started in the upcoming academic sessions to address regional and industrial needs.

Prof. Indraj Singh, (ME)

Prof. Sanjeev Bansal, (M&H) 27/10

Prof. Jagtar Singh, (ME) 27.10.26

Prof. Navdeep Jindal, AsD (IQAC)

Prof. Surinder Singh (Dean (R&C)) 27/10/26

Prof. Hari Singh, External Expert 27/10/26

Prof. Shankar Singh, HOD (ME) & Convener 27/10/26

2. Significant achievements of department

a. Patents filed/granted/published.

S. No	Name of Faculty	Patent/ application Number	Title of the patent	Year of Award of patent	Date of filing/ granting / publishing /licensing	Status of Patent (Filed/ Granted/ Published/ Licensed)
1.	Dr. Sumit Kumar, Dr. Vivek Kumar, Dr. Surinder Kumar, Dr. Sunil Kumar, Karan Singh, Gurdeep Singh, Harshpreet Singh, Ritik Bansal	202511038621 A	RETROFIT ATTACHMENT FOR CONVERTING BICYCLE TO E-CYCLE	2025	04/07/2025	Granted
2.	Dr. Sumit Kumar, Dr. Vivek Kumar Dr. Surinder Kumar, Dr. Sunil Kumar, Aditya Raj, Adarsh Kumar Ankit Kumar, Rudra Kasoudhan	202611021670	AN AUTONOMOUS SOLAR GRASS CUTTER	---	24.02.2026	Filed
3.	Dr. Rakesh Kumar, Bharat Singh Chittoriya, Dr Arvind Jayant	2026	TOOL HOLDER FOR VERTICAL MILLING MACHINE	2026	2026	Granted
4.	Dr. Rakesh Kumar, Bharat Singh Chittoriya, etc.	2026	SMART COOLING AND THERMAL MANAGEMENT DEVICE FOR FSH TOOL HOLDER	--	2026	Filed
5.	Dhiraj Sud, Jagtar Singh, Anil Kumar Singla, Payal Malik, Anuj Bansal, Riya, Shubham Mourya, Mani Kant Paswan	202611031341	METHOD FOR PRODUCTION OF BIO-STIMULANT FORMULATION FROM PROCESSED RICE STRAW AGRO-WASTE AND FORMULATION THEREOF	--	16/03/2026	Filed
6.	Dhiraj Sud, Jagtar Singh, Anil Kumar Singla, Payal Malik, Anuj Bansal, Mani Kant Paswan, Pankaj Jain	Design No.: 461333-001	DEVICE FOR LIQUID EXTRACTION FROM AGRI WASTE	2025	21.10.2025	Granted
7.	Dr. Shankar Singh	Application No. 479053-001	WIRE-ASSISTED ELECTRO DISCHARGE TURNING (WEDT) ATTACHMENT	--	25.06.2026	Published
8.	Anuj Bansal, Jonny Singla, Anil Kumar Singla, Deepak Kumar Goyal, Jagtar Singh	Application No:202211037172 A	A PORTABLE MUD BASED CURVY AND CONE HEAT SINKER SYSTEM FOR OUTDOOR AIR CONDITIONER UNIT		23/06/2023	Published
9.	Dr. Harish Kumar Arya, Dr. Kulwant Singh, Dr. Paramjeet Shakya, Mr. Rajesh Kumar	TEMP/E-1/47010/2026-DEL 202611042910	MAGNETICALLY AND VIBRATIONALLY CONTROLLED ARC WELDING SYSTEM AND METHOD THEREOF	--	03/04/2026	Filed

b. Conferences/ Seminars Organized by the department.

S. No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Name of Organizer (s)
1.	2D Graphics for Scientific Reporting (2DGSR 2025)	07-11 July 2025	33	SLIET	Dr. Sunil Kumar, (AP, ME), Mr. Surinder Kumar, (AP, ME) and Dr. Sumit Kumar, (AP, ME

Prof. Indraj Singh, (ME)

Prof. Sanjeev Bansal, (M&H)

Prof. Jagtar Singh, (ME)

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2.	Smart Composite Materials: Technologies and Applications (SCMTA-2025)	22nd to 26th December 2025	57	SLIET	Dr. Rakesh Kumar, (AsP, ME), Dr Mohd Majid, (AsP, ME) and Er Divesh Bharti, (AP, ME)
3.	Green Foundary Practices in Metal Casting (GFPMC-2026)	13th to 14th February 2026	62	SLIET	Dr. Rakesh Kumar, (AsP, ME), Dr Mohd Majid, (AsP, ME) and Er Divesh Bharti, (AP, ME)
4.	Welding & Simulation	1st –5th Sep,2025	50	SLIET	Dr. Mohd Majid Dr. Vikek Kumar
5.	One Week FDP on Artificial Intelligence Applications in Mechanical Engineering: Future Tools (AIAME-2026)	18–22 May 2026	--	--	Dr. Rakesh Kumar, (AsP, ME), Dr Manoj Goyal (AsP, ME) and Dr Yogesh Verma, (AP, ME)
6.	One Week Workshop/STP on "Techno-Model Quizzard on Emerging Engineering Technologies" under IEI–SLIET (Diploma Chapter)	16.02.2026 to 20.02.2026	100	SLIET	Dr. Rakesh Kumar, (AsP, ME), Dr. Pankaj Das (AP, ECE) and Dr. Subita Bhagat (AP, Chem)
7.	Online Short-Term Training Programme Advances in Additive Manufacturing (AAM-2026)	January 05-09, 2026	90	SLIET	Coordinators: Dr. Anil Kumar Singla (AsP, ME) and Dr. Anuj Bansal (AP, ME), Co-Coordinators: Er. Ankita Omer (AP, ME) and Er. Jonny Singla (AP, ME).

c. Training programmes held for students.

S No	Name of the program	Duration	No of participants	Sponsoring Agency if any	Name of Organizer (s)
1.	Statistical Analysis in Engineering with R	July 18-19,2025	40	--	Coordinators : Dr. Jagtar Singh(Professor, ME), Dr V.K Kukreja (Professor) Organized at Sant Longowal Institute of Engineering and Technology, in association with Wenzhou University
2.	Workshop on Fundamentals of Vibration Analysis for Condition Monitoring & Fault Diagnosis	January 15-16, 2026	34	-	Coordinators : Dr. Rajesh Kumar (Professor, ME), Organized at Sant Longowal Institute of Engineering and Technology

d. Expert/ Invited lectures delivered.

S. No.	Name of faculty member	Topic of delivered lecture/ expert lecture	Name of the organization/ Institute/ industry, where the expert lecture was delivered.	Organizer	Date/ Year of the event
1.	Dr. Sunil Kumar	CAD & Entities in 2D graphics	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	SLIET	10.07.2025
2.	Dr. Sunil Kumar	Auto CAD Interface	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	SLIET	11.07.2025
3.	Dr. Sunil Kumar	AutoCAD (Tool commands)	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	SLIET	11.07.2025
4.	Er. Divesh Bharti	Enhancing WAAM Performance through the Effective Integration of Process Parameters and Deposition Strategies	One-week online STTP on "Advances in Additive Manufacturing (AAM-2026)	SLIET	07th January 2026
5.	Er. Divesh Bharti	From Kinematics to WAAM: Motion in Modern Manufacturing	Department of Mechanical Engineering, Govt Polytechnic Kangra (Himachal Pradesh)	Govt Polytechnic Kangra (Himachal Pradesh)	23rd March 2026
6.	Dr. Rakesh Kumar	Role of Artificial Intelligence in Metal Casting	One-Week FDP on Artificial Intelligence Applications in Mechanical Engineering: Future Tools (AIAME-2026)	Department of Mechanical Engineering, ,SLIET, Longowal	21 May 2026

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7.	Dr. Rakesh Kumar	Foundry Technology and Practices	One-Week Faculty Development Programme (Hybrid Mode) on Smart Composite Materials: Technologies and Applications (SCMTA-2025)	Department of Mechanical Engineering, ,SLIET, Longowal	25 December 2025
8.	Dr. Rakesh Kumar	Resource person to Complete Foundry Tarining	Two-Day Hands-on Workshop on "Green Foundry Practices in Metal Casting (GFPMC-2026),"	Department of Mechanical Engineering, ,SLIET, Longowal	13–14 February 2026
9.	Dr. Sumit Kumar	Working with Mendely	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	Department of Mechanical Engineering, ,SLIET, Longowal	09/07/2025
10.	Dr. Sumit Kumar	Bibliometric analysis	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	Department of Mechanical Engineering, ,SLIET, Longowal	09/07/2025
11.	Dr. Sumit Kumar	Typesetting of Thesis report	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	Department of Mechanical Engineering, ,SLIET, Longowal	10/07/2025
12.	Dr. Sumit Kumar	Advance MS word	2D Graphics for Scientific Reporting (2DGSR 2025) SLIET	Department of Mechanical Engineering, ,SLIET, Longowal	10/07/2025
13.	Dr. Anuj Bansal	Development of Titanium/Aluminium and complex structure using WAAM: Research papers to product development	Research Papers to Marketable Products: Writing and Innovation Strategies	Department of Electronics and Communication Engineering	01/03/2026
14.	Dr. Anuj Bansal	NEP-2020	IKG PTU Kapurthala	IKG PTU Kapurthala	02/04/2026
15.	Dr. Anuj Bansal	Challenges in Development of Aluminium and Titanium Components using WAAM	STTP on Advances in Additive Manufacturing (AAM-2026)	Department of Mechanical Engineering, SLIET, Longowal	09/01/2026
16.	Mr. Jonny Singla	Trajectory Planning for Development of Quarter Iso-grid Structure using WAAM	STTP on Advances in Additive Manufacturing (AAM-2026)	Department of Mechanical Engineering, SLIET, Longowal	07/01/2026
17.	Dr. Anil Singla	Defects in AM Components and Effects of Post Processing on Mechanical Performance of AM Components	STTP on Advances in Additive Manufacturing (AAM-2026)	Department of Mechanical Engineering, SLIET, Longowal	05/01/2026
18.	Dr. Pardeep Gupta	Challenges and Opportunities for 3D Printing of PLA-based Biocomposites used in Biomedical Applications' in	STTP on Advances in Additive Manufacturing-2026	Department of Mechanical Engineering, SLIET, Longowal	(05.01.2026 to 09.01.2026)
19.	Dr. Rajesh Kumar	Condition Monitoring of Vibrating Equipment & Structures	Workshop on Fundamentals of Vibration Analysis for Condition Monitoring & Fault Diagnosis	Department of Mechanical Engineering, SLIET, Longowal	15-16 January 2026

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27.10.26

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e. Consultancy projects received during the year.

Name of the consultant	Name of consultancy project	Consulting/ Sponsoring agency with contact details	Year	Revenue generated (INR in Lakhs)
"PI:Prof. Dhiraj Sud (SLIET) CO-PI: Prof. Jagtar Singh (SLIET), Dr. Anil Kumar Singla (SLIET), Dr. Payal Malik (SLIET), Dr. Anuj Bansal (SLIET), Prof. Mani Kant Paswan (SLIET)"	Processing and Utilization of Compressed Biogas (CBG) Plant's Residue	VERBIO India Private Limited, Lehragaga, Dugal, KM Stone 7-8, Tehsil - Lehragaga, Raidharana Road, Village Bhutal Kalan, Sangrur, Punjab – 148031 Phone: 6239329038 Fax: E-mail: pankaj.jain@verbio.in	2025-2026	Rs. 1,18,000

f. PhD Submitted/Awarded to students.

S No	Regn. No.	Name of the scholar	Name of the guide/s	Year of award
1	PME 1702	Shrikant Bhardwaj	Dr. ARVIND JAYANT, DR. KULWANT SINGH	15.09.2025
2	PME 2116	Ranbir Singh Rooprai	Dr. JAGTAR SINGH, DR. ANUJ BANSAL	30.10.2025
3	PME 1903	Hari Om	Dr. SHANKAR SINGH	27,01,2026
4	PME 1809	Navneet Goyal	Dr. KULWANT SINGH	09.03.2026
5	PME 2001	Nikesh Kumar Ojha	Dr. R. K. SAXENA	24.07.2026

g. List of SQPA (*SLIET Quality Publication Award*) awarded.

S. No.	Name of Ph.D Scholar and Regn. No.	Amount of Award	Supervisor (s)
1.	RANBIR SINGH ROOPRAI, PME 2116	Rs. 5,000/-	DR. JAGTAR SINGH, DR. ANUJ BANSAL

h. International/National Recognition

The following faculty members have been included in the prestigious list of the world's top 2% of scientists, compiled by Stanford University:

- Prof. Rajesh Kumar
- Dr. Anil Kumar Singla
- Dr. Anuj Bansal

i. Total number of students qualifying in state/national/international level examinations during the year (e.g.: NET/SLET/GATE/GMAT/CAT/GRE/JAM/TOEFL/Central Services/State Services/Any Other examinations)

Year	Names of students	Name of the test Qualified/selected.	Registration number
2026	Shivam Ayush	GATE	2336079
2026	Aditya Anand	GATE	2246054
2026	Yuvraj Kumar Tandon	GATE	2246065
2026	Manju Nath Reddy	GATE	2246011
2026	Shiri Ram Jat	GATE	2246008
2026	Saurabh Kumar	GATE	2246028

3. Placement record of the department (Last three years):

UG students: **2023-24** = 115/130; **2024-2025** =112/121; **2025-2026** = 136/142

Prof. Indraj Singh, (ME) — **Prof. Sanjeev Bansal, (M&H)** — **Prof. Jagtar Singh, (ME)**

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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.

- The Department of Mechanical Engineering, SLIET, is committed to continuously improving the teaching–learning process by encouraging faculty participation in FDPs, workshops, seminars, conferences, short-term courses, and industrial training programmes organized by IITs, NITs, reputed institutions, and industries in India and abroad. These initiatives aim to enhance teaching skills, technical expertise, and curriculum relevance in emerging areas of engineering.
- Emphasis is placed on enhancing pedagogical competencies, ICT-enabled teaching, outcome-based education (OBE), innovative instructional practices, and project-based and experiential learning. Faculty members are encouraged to integrate emerging technologies into classroom and laboratory teaching, while technical and supporting staff are motivated to undertake hands-on training in the operation, maintenance, and calibration of laboratory equipment, advanced testing facilities, and modern research instruments.
- The curriculum is periodically reviewed and strengthened in consultation with industry experts, academic professionals, alumni and other stakeholders to ensure alignment with emerging technological developments, industrial requirements, national priorities and international standards. The introduction of new elective and interdisciplinary courses in emerging areas such as Artificial Intelligence and Machine Learning, Industry 4.0 and 5.0, Smart Manufacturing, Robotics and Automation, Additive Manufacturing, Sustainable Engineering, Advanced Materials and Digital Technologies may be considered based on feasibility, faculty expertise, infrastructure availability and stakeholder feedback.
- The department will continue to encourage collaborations with IITs, NITs, research institutions and industries, promote the use of SWAYAM/NPTEL and other recognized online learning platforms, and periodically assess the effectiveness of training programmes through feedback and improvements in teaching practices. These initiatives aim to enhance faculty competence, strengthen technical support, improve student learning outcomes and ensure that the curriculum remains relevant at national and international levels.
- The Department will continuously enhance faculty competencies, strengthen technical support facilities, and update the curriculum in line with emerging technologies and industry requirements to improve the quality of teaching–learning, research, and graduate employability.

5. Effective/Continuous monitoring of faculty/staff in delivery the course contents (at departmental level) for enhancing the teaching-learning process.

The Department ensures systematic monitoring of faculty and staff to ensure effective delivery and timely completion of the prescribed course contents. Regular reviews of syllabus coverage, adherence to the academic calendar, classroom teaching, and student feedback are conducted under the supervision of the Head of the Department and designated faculty coordinators. Periodic interactions with faculty members help identify and address academic issues, maintain teaching standards, and ensure the timely completion of the syllabus. These practices strengthen accountability, enhance teaching effectiveness, and support the continuous improvement of the teaching–learning process.

6. Technical Societies/ Colloquium for Students

(i) Departmental Society
(a) SLIET Mechanical Engineering Society (SMES)

(ii) Student Chapter(s) of Professional Societies
(a) Institution of Engineers (India), Kolkata-Student Chapter
(b) Indian Society for Technical Education (ISTE) (Faculty and Student Chapter)

7. Scope of improvement in the present teaching – learning process

(i) Teaching-learning process can be further enhanced by delivering course contents through interactive videos related to fundamental as well as applied topics.
(ii) Case studies can be included in the curriculum.
(iii) Industrial visits can be more effectively utilized for identifying research projects/consultancy.

Prof. Indraj Singh, (ME) | Prof. Sanjeev Bansal, (M&H) | Prof. Jagtar Singh, (ME)

Prof. Navdeep Jindal, AsD (IQAC) | Prof. Surinder Singh (Dean (R&C))

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8. The skill and expertise of the faculty/Technical staff in the department (specific)

Faculty expertise includes areas like

Additive Manufacturing,
Modelling and Simulation,
Surface Engineering,
Material Processing,
Recycling of Industrial waste,
Bioenergy and Utilization of Biomass,
Design,
Manufacturing and Non-conventional Machining,
Welding,
Industrial Engineering.

9. Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use)

- Laboratory infrastructure has been strengthened as per the plan/need of the department.
- The present facility is also being optimally used by the students as well as the faculty of the department for catering to the curriculum, project as well as research needs.
- Specific Addition includes Melting furnace for new alloy development, Vacuum furnace and FTIR.

10. Any other point:

Specific suggestions by the external expert:

- Industrial training should be strictly monitored by the faculty.
- Projects should focus more on industry oriented and/or current local problems.
- Students should be encouraged for Entrepreneurship and Start-up.
- Student faculty ratio and number of technical staff needs to be improved.
- Industry-institute MoU for internship, training, skill development, and placement to be explored.

C. Departmental Infrastructure

C.1	Departmental resources	Score	
		Self-assessment	Expert assessment
1	Adequacy of Classrooms and Multi-Media Facility	10	10
2	Availability of Laboratories	10	10
3	Availability of Conference/Seminar Room, etc.	10	10
4	Availability of Seating Space for Faculty and Research Students	10	10
5	Availability of Internet Services in Research Labs and Classrooms	10	10
6	Departmental Library and E-Resources	10	10
7	Computing Facilities and Software	10	10
8	Adequacy of Offices and Furnishing for Faculty	10	10
9	Faculty- Student Ratio	08	08
10	Support Staff (Technical/Administrative) Adequacy	06	06
	Total Score (out of 100)	94/100	94/100

Prof. Indraj Singh, (ME)

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SWOC analysis by the department:

Strengths:

- The department has experienced faculty. More than 75% of the faculty is Ph. D. and their retention rate is also high.
- Three faculty members have been listed in the prestigious top 2% scientist list issued by Stanford University, USA.
- Laboratory infrastructure is adequate with latest state-of-the-art equipment.
- Faculty is motivated towards research and strives to achieve higher quality levels of teaching-learning process.

Weaknesses:

- Institute-industry interaction needs to be strengthened.
- Monitoring of the internship/training of final year students due to involvement in many activities needs to be reviewed.
- Student faculty ratio is high.

Opportunities:

- Sufficient laboratory infrastructure is available in the department to offer vocational courses in different areas like Welding, Machining, Automation, Software training etc. that can help in generating IRG for the institute.
- New courses can be designed and offered for skilling and upskilling of manpower of industry as well as academic institutes in line with the faculty expertise and laboratory infrastructure.
- Industrial consultancy can be improved with active institute-industry interaction.
- Students' projects should be focused on industrial problems.

Challenges:

- Declining trend of admissions especially at the PG and PhD. level.
- Mindset of the students is slightly more inclined towards IT jobs rather than their core field.
- Communication and analytical skills of the students requires significant improvement.

Suggestions for improvement:

- **Enhancement of Practical and Industrial Training:** Greater emphasis should be placed on providing students with hands-on training in the operation of various equipment, machinery, and engineering software through structured On-the-Job Training (OJT) programmes to strengthen their practical skills and industry readiness.
- **Development of Digital Learning Resources:** Faculty members should be encouraged to develop fundamental lecture materials and instructional videos, particularly animated videos, to facilitate better understanding of complex engineering concepts and improve the effectiveness of the teaching-learning process.
- **Establishment of Virtual Laboratories:** Virtual laboratories should be developed and integrated into the curriculum to provide students with interactive, simulation-based learning experiences and opportunities to perform experiments beyond the limitations of conventional laboratory facilities.
- **Integration of Case Studies into the Curriculum:** More industry-oriented and real-world case studies should be incorporated into the curriculum to promote analytical thinking, problem-solving abilities, and the practical application of theoretical knowledge.
- **Structured Industrial Visits:** The curriculum should include visits to at least two to three industries or companies after the completion of the third semester to familiarize students with industrial operations, emerging technologies, workplace practices, and industry expectations.
- **Inclusive Participation in Departmental Societies and Committees:** Postgraduate (PG) and Ph.D. students should be actively involved in departmental societies and student-oriented committees, where participation is currently dominated by undergraduate (UG) students. This would promote interdisciplinary interaction, leadership development, peer learning, and greater participation of research scholars in departmental activities.

Prof. Indraj Singh, (ME) | Prof. Sanjeev Bansal, (M&H) | Prof. Jagtar Singh, (ME)

Prof. Navdeep Jindal, AsD (IQAC) | Prof. Surinder Singh (Dean (R&C)) 27/10/26

Prof. Hari Singh, External Expert 27/10/26

Prof. Shankar Singh, HOD (ME) & Convener 27/10/2026

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 Master Student iv. Placement of Ph. D. Students	10	10
2	Average No. of Ph.Ds Awarded per Year	10	10
3	Publications per Faculty in Indexed Journals/Year (Average of last three years)	10	10
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	10	10
5	Recognitions; Awards (National/International) to Faculty/Students	10	10
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	10	10
9	No. of qualified students NET/GATE/CAT etc. (State/Central Civil Services)	10	10
10	Entrepreneurship	10	08
	Total Score (out of 100)	97/100	95/100

Comments & Suggestions for Improvement: Already available in the SWOC analysis.

Prof. Indraj Singh, (ME)

Prof. Sanjeev Bansal, (M&H) 27/10

Prof. Jagtar Singh, (ME)

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SANT LONGOWALINSTITUTE OF ENGINEERING & TECHNOLOGY
(Deemed-To-Be-University)
LONOGOWAL-148106

ACADEMIC AUDIT (2023 - 2024)

SUMMARY SHEET

1.	Name of the Department	**Mechanical Engineering**	
2.	Name of Reviewer Designation & Address	**From Academia**	**From Industry**
		Dr. Hari Singh, Professor (Mechanical) NIT, Kurukshetra	Nil
3.	Date of Meeting	27.10.2026	

Score Summary							
Academics (A)				Research (Max Score 100) (B)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
ICD Programme (Max Score 100) (A.1)	UG Programme (Max Score 100) (A.2)	PG Programmme (Max Score 100) (Average of all PG programs) (A.3)	Doctoral Programme (Max Score 100) (A.4)		(C)	(D)	(A+B+C+D)
96	99	94	81	97	94	95	656/700= 93.7%

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.

27/10/26

Name & Signature of HOD
(Prof Shankar Singh)
HOD (ME)

Prof. Indraj Singh, (ME)

Prof. Sanjeev Bansal, (M&H) 27/10

Prof. Jagtar Singh, (ME) 27/10/26

Prof. Navdeep Jindal, AsD (IQAC)

Prof. Surinder Singh (Dean (R&C)) 27/10/26

Prof. Hari Singh,
External Expert 27/10/26

27/10/26

Prof. Shankar Singh,
HOD (ME) & Convener

संत लौंगोवाल अभियांत्रिकी एवं प्रौद्योगिकी संस्थान

(शिक्षा मंत्रालय, भारत सरकार के अधीन सम विश्वविद्यालय)

लौंगोवाल, जिला संगरुर, पंजाब -१४८१०६

Sant Longowal Institute of Engineering and Technology

(Deemed-to-be-University under Ministry of Education, Government of India)

Longowal, District Sangrur, Punjab – 148106

Department of Mechanical Engineering

Ref. No. SLIET/ME/ 1235 Date : 27/10/26

From	:	**HOD (Mech. Engg.)**
To	:	**Dean (Academics)**
Subject	:	**Submission of Academic Audit for Academic Year 2025-26 - Regarding.**

Please find enclosed the duly completed Academic Audit Proforma for the Academic Year 2025–26 of the Department of Mechanical Engineering, proforma containing the scores of self-assessment as well as expert assessment, for your kind perusal and further necessary action.

27/10/2026

HOD (Mech. Engg.)

Copy to :

1. Coordinator, IQAC: for information, please.
2. File copy