संत लौंगोवाल अभियांत्रिकी एवं प्रौद्योगिकी संस्थान,
लौंगोवाल, संगरुर, पंजाब - १४८ १०६
[भारत सरकार द्वारा स्थापित]
Sant Longowal Institute of Engineering and Technology
Longowal, Dist. Sangrur, Punjab – 148106
[Established by Govt. of India]
(Deemed to be University)

Ref.No.SLIET/ME/1612 Date 12/11/2021

From : H.O.D (ME)

To : Dean (Academics)

Jasvir 16-11-2021 Coordinator IQAC

Subject : Conduct of Academic Audit for AY 2020-21 – submission of academic audit report

In continuation to the earlier communication from this office, vide letter no. SLIET/ME/1596 dated 08.11.2021, please find enclosed herewith complete Academic audit (2020-21) proforma containing score of self-assessment as well as expert assessment.

HOD(ME) 12/11/21

Encl : As above

D.No. Dean (Acad.) 1954 R.No. Dean (Acad.) 1209
Dated 16/11/2021 Dated 15/11/21

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY
ACADEMIC AUDIT (2020-21)
PROFORMA OF ASSESSMENT

1. **Name of the Department:** MECHANICAL ENGINEERING

2. **Reviewer (Name, Designation & Address):** Dr. Hari Singh, Professor, Mechanical Engineering department, NIT, Kurukshetra.

3. **Date of Review:** 12 /11/2021

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 Program**	**Score**	
		Self assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/ practical (contents/ratio).	9	8
2.	Equivalence and Relevance of curriculum at national level	9	8
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects (minor/major)]	9	9
4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	9	9
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	8	8
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	9	9
7.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	9	9
8.	Practical activities, non-academic and totally related to a specific trade for skill development and *developing expertise in a particular group of techniques.*	8	7
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	8	8
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	9	9
	Total Score (out of 100)	87	84
	UG Program	**Score**	
		Self assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9	8
2.	Status of study material developed by faculty for students	9	8
3.	Relevance of contents of courses taught to the students and scope of improvement (revision of syllabus, addition of new	9	8

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	experiments)	9	
4.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	9	9
5.	Modern teaching methods in practice other than the conventional methods E-Assisted Learning (i) Availability of Library Resources (ii) Multi-Media Assisted Teaching	9	9
6.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation) (i) Theory and tutorial (ii) Practical (case studies)	9	9
7.	Faculty–Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs	9	9
8.	Tour/Training/Industrial visits/Internship opportunities	8	8
9.	Effectiveness of Assisted Learning in Tutorial classes/seminars for Students	9	9
	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	8	8
10	Placement %age/higher studies options (last three years)	–	--
	Total Score (out of 100)	88	85

	PG Program (Separate for each program)	**Score**	
		Self assessment	Expert assessment
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9	8
2.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	9	9
3.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	9	9
4.	Relevance of contents of courses taught to the students and scope of improvement	9	8
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	9	9
6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	9	8
7.	Tour/Training/Industrial visits/Internship opportunities	8	8
8.	Collaboration with other departments (within institute)	7	7
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	8	8
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	9	8
	Total Score (out of 100)	86	82

A.4	**Doctoral (Ph.D) Programmes**	**Score**	
		Self assessment	Expert assessment
1.	Intake of Ph.D Students	8	8

2.	Admission Process	9	8
3.	Pre-Ph.D Courses and Evaluation Process	9	9
4.	Breadth and Depth of Knowledge of Students	9	8
5.	Seminar/ Presentations and Technical Communication	9	8
6.	Research Facilities available in the Department	8	8
7.	Average No. of Research Students/Faculty (44/23=1.9)	8	8
8.	Average No. of Research Papers of Ph. D Students (Indexed Journals) (03)	8	8
9.	Average Duration to Complete Ph.D (years) (5 years)	8	8
10.	Participation of Research Scholars in Conferences/Workshops	8	7
	Total Score (out of 100)	84	80

B. RESEARCH

		Score	
		Self assessment	Expert assessment
1.	Research Ambience in the Department	8	9
2.	Research Awareness among Doctoral Students	9	9
3.	Thrust areas of research in the department	8	9
4.	Quality of Research	9	8
5.	Collaborations with other departments (within the institute) and at National, and International levels.	7	7
6.	Impact and Quality of Publications	8	8
7.	Relevance of Research to Knowledge Generation and Social Relevance	8	9
8.	Student Exposure for Attending Quality Conferences/Symposia	8	8
9.	Inter departmental collaborations	7	7
10.	Industry/externally funded sponsored research (Numbers and amount)	0	0
	Total Score (out of 100)	72	74

General Comments on,

1. Plan of action of the department for the next five years (in view of NEP 2020)
   - *Centre of excellence proposed on 'Materials processing and Technology'.*
   - *Additive Manufacturing facility will be augmented.*
   - *Augmentation of laboratory facilities including new softwares and upgradation of existing softwares.*
   - *Starting of new courses in the Emerging areas.*
   - *Minor degree will be offered in Mechanical Engineering.*
   - *Interdisciplinary projects will be promoted at the UG, PG and Ph. D. level.*
   - *Industry-Institute interaction will be accelerated.*
   - *Special emphasis on Consultancy work will be given.*

- *Sponsored projects will be brought in the department especially in the thrust/emerging areas to further strengthen these areas.*

2. Significant achievements of the department (faculty/Staff/Students)
   - *National award 'ULEKTZ WALL OF FAME' awarded to Dr. Arvind Jayant, Professor (Mechanical Engineering).*
   - *SLIET Quality publication award (cash prize worth Rs. 5,000/-) won by Jastej Singh, Research Scholar.*
3. Placement record of the department (Last three years):
   - *Total 108 students got placed in the last 3 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.
   - *Faculty members are attending courses as per their research interest. However new courses having more relevance to the emerging areas can be added to the existing curriculum.*
   - *Technical staff should be encouraged to attend workshops/seminars in their respective areas to enhance the quality of delivery for the practical classes. This will also help them in continuous learning by way of having more hands-on experience.*
5. Effective/Continuous monitoring of faculty/staff in delivery the course contents (at departmental level) for enhancing the teaching-learning process.
   Class monitoring committee duly constituted by the HOD of the department is in place which is responsible for monitoring of the classes.
6. Technical Societies/ Colloquium for Students
   (i) Departmental Society: *1. SLIET Mechanical Engineering Society (SMES)*

   (ii) Student Chapter(s) of Professional Societies: *ISTE, IEI, ISHRAE*
7. Scope of improvement in the present teaching –learning process:
   Striving for achieving higher quality academic standards is a continuous evolving process. So, faculty and staff should continuously keep up with their learning to acquaint themselves with the latest technical know-how.
8. The skill and expertise of the faculty/Technical staff in the department (specific):
   They should keep learning about new techniques, processes, equipments, materials etc.
9. Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use)"
   New additive manufacturing facility 'Wire Arc Additive Manufacturing' (WAAM) is going to be installed in the department by the end of November 2021 under which the equipment 'Robotic Cold metal transfer (CMT)' is being procured. This will help strengthening additive manufacturing of alloys and thus UG. PG and Ph. D. projects can be planned in this focused area of research.

10. Any other point: -----

C. Departmental Infrastructure

		Score	
		Self assessment	Expert assessment
1	Adequacy of Class Rooms and Multi-Media Facility	9	9
2	Availability of Laboratories	9	9

3	Availability of Conference/Seminar Room, etc.	9	9
4	Availability of Seating Space for Faculty and Research Students	9	9
5	Availability of Internet Services in Research Labs and Class Rooms	9	9
6	Departmental Library and E-Resources	9	8
7	Computing Facilities and Software	8	8
8	Adequacy of Offices and Furnishing for Faculty	9	8
9	Faculty- Student Ratio	8	8
10	Support Staff (Technical/Administrative) Adequacy	8	8
	Total Score (out of 100)	87	85

SWOT analysis by the department

Strengths: *Good infrastructural facilities, 70% of the regular faculty of the department is Ph.D., Faculty retention is good, Faculty members visit abroad to attend international conferences to present their research works.*

Weaknesses: *Consultancy work, Shortage of faculty and technical staff.*

Opportunities: *Emphasis on emerging areas can help in improving graduation outcome in terms of diversified/allied areas being taken up especially as a part of UG. PG and Ph. D. projects. Augmentation of expertise and research facilities from other departments of the institute should be encouraged to help making the courses more relevant to the present days' industrial needs.*

Threats: *Since in the previous past a good number of govt./non-govt. institutes/universities have emerged in this region, this provides students an option to choose a location near to their home place. This locational preference has led to a decline in admission rate of students especially at the PG level.*

Suggestions for improvement:

- *Keeping in view the faculty expertise and infrastructural facilities in the department, new formal as well as non-formal courses/training programmes should be initiated.*
- *Industry-Institute interaction should be emphasized.*
- *IRG generation can be thought of from skilling and upskilling of manpower from industry.*
- *Lab/research equipments/instruments should be periodically calibrated.*
- *Faculty and PhD scholars should be motivated for filing patents in their respective research areas*

D. Outcomes

		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	8	8
2	Average No. of Ph. Ds Awarded per Year (2 to 3)	–	5
3	Publications per Faculty in Indexed Journals/Year (Average of last three years) (02)	–	5
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus) (06)	–	5
5	Recognitions; Awards (National/International) to Faculty/Students	0	0

6	Consultancy and Externally Funded Projects	0	0
7	No. of Ph.D. graduates who took Academics as Career (Last 5 Years) (16 no.)	—	5
8	Students offered for higher studies	—	----
9	No. of qualified students NET/GATE/CAT etc (State/Central Civil Services)	—	----
10	Entrepreneurship	—	----
	Total Score (out of 100)	8	28

Comments & Suggestions for Improvement:

- *Students' outcome in terms of placements can be improved by improving the quality of projects/dissertations/thesis work by selecting industry-oriented real time problems.*
- *Motivational lectures and personality workshops should be more frequently conducted for the students.*
- *More emphasis should be laid down on skilling and upskilling of the students.*

SANT LONGOWAL
INSTITUTE OF ENGINEERING & TECHNOLOGY
ACADEMIC AUDIT (20 20- 2021)
SUMMARY SHEET

1.	Name of the Department	MECHANICAL ENGINEERING	
2.	Name of Reviewer Designation & Address	**From Academia**	**From Industry**
		Dr. Hari Singh, Professor, Mechanical Engineering department, NIT, Kurukshetra.	--------
3.	Date of Meeting	12/11/2021	

Score Summary							
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)				
84	85	86	84	74	85	28	526

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.

12/11/2021
Name & Signature of HOD

(Prof. Hari Singh)