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SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

(Deemed-To-Be-University)
LONOGOWAL-148106

ACADEMIC AUDIT (2021 - 2022)

PROFORMA OF ASSESSMENT

1. **Name of the Department: Computer Science and Engineering**
2. **Reviewer (Name, Designation & Address):**
3. **Date of Review: 31.08.2022**

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	06
2	Equivalence and Relevance of curriculum at national level	10	08
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	07
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	10	06
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	08
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	10	08
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	10	08
	Total Score (out of 100)	**100**	**81**

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	08
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	8
7.	Faculty–Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs	10	6
8.	Tour/Training/Industrial visits/Internship opportunities	10	8
9.	(a) Effectiveness of Assisted Learning in Tutorial classes/seminars for Students	5	3
	(b) Faculty Mentoring/Faculty Advisor System for Students/Class of Students	5	5
10	Placement %age/higher studies options (last three years)	10	6
	Total Score (out of 100)	**100**	**84**

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	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	10	10

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6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	10	06
7.	Tour/Training/Industrial visits/Internship opportunities	10	08
8.	Collaboration with other departments (within institute)	10	02
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)	**100**	**84**

A.4	**Doctoral (Ph.D.) Programmes**	**Score**	
		Self-assessment	Expert assessment
1.	Intake of Ph.D. Students	10	10
2.	Admission Process	10	10
3.	Pre-Ph.D. Courses and Evaluation Process	10	10
4.	Breadth and Depth of Knowledge of Students	10	02
5.	Seminar/ Presentations and Technical Communication	10	10
6.	Research Facilities available in the Department	10	8
7.	Average No. of Research Students/Faculty	10	2
8.	Average No. of Research Papers of Ph. D. Students (Indexed Journals)	10	3
9.	Average Duration to Complete Ph.D. (years)	10	6
10.	Participation of Research Scholars in Conferences/Workshops	10	2
	Total Score (out of 100)	**100**	**63**

B. RESEARCH

B.1	Research and Industrial collaboration	Score	
		Self-assessment	Expert assessment
1.	Research Ambience in the Department	10	06
2.	Research Awareness among Doctoral Students	10	04
3.	Thrust areas of research in the department	10	10
4.	Quality of Research	10	00
5.	Collaborations with other departments (within the institute) and at National, and International levels.	10	06
6.	Impact and Quality of Publications	10	09
7.	Relevance of Research to Knowledge Generation and Social Relevance	10	10
8.	Student Exposure for Attending Quality Conferences/Symposia	10	04
9.	Inter departmental collaborations	10	06
10.	Industry/externally funded sponsored research (Numbers and amount)	5	00
	Total Score (out of 100)	**95**	**55**

General Comments on,

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

Vision & Mission of the Department

Vision: To achieve technical & research excellence in the field of Computer Science and Engineering with industrial & social perspective.

Mission

To provide environment for imparting high quality technical education, skill development, research and development.

To disseminate sound knowledge of recent Computer Technologies by organizing seminar/workshops/short-term courses.

To develop interaction and collaboration with the industry.

To facilitate Hand-on training to the students for promoting Self-Employment.

NEP 2020 is the first education policy of the 21st century and replaces the thirty-four year old National Policy on Education (NPE), 1986. Built on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, this policy is aligned to the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities of each student.

Related to CSE Department:

Multi disciplinary Course entitled "Cyber Security"

Increase GER in higher education to reach upto 50% (Target 2030)

Rationalised Institutional Architecture

National Research Foundation(NRF)

Financial support for students: M Tech, PHD Fellowship (Full time, QIP)

Teacher Education: FDP, STTP, Workshops, Training Programs

2. Significant achievements of the department (faculty/Staff/Students): NBA Accreditation, Hackathon Event participation, Cyber Security Jagrookta Divas, Industry Institute Interaction of CSE students, Participation of the students in the competitive exams
3. Placement record of the department (Last three years): Annexure placement data

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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.: NITTT Modules, STTP/FDP
5. Effective/Continuous monitoring of faculty/staff in delivery the course contents (at departmental level) for enhancing the teaching-learning process.: Student Feedback, Class monitoring committee
6. Technical Societies/ Colloquium for Students
   Departmental Society: Software Club
7. Scope of improvement in the presenting teaching –learning process: Lecture Recordings
8. The skill and expertise of the faculty/Technical staff in the department (specific): Research Areas of faculty NLP, ML, AI, Cloud Computing, WSN, DIP
9. Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use): Workstations and AI servers
10. Any other point- NIL

C. Departmental Infrastructure

C.1	Departmental resources	Score	
		Self-assessment	Expert assessment
1	Adequacy of Class Rooms and Multi-Media Facility	10	8
2	Availability of Laboratories	10	8
3	Availability of Conference/Seminar Room, etc	10	8
4	Availability of Seating Space for Faculty and Research Students	10	6
5	Availability of Internet Services in Research Labs and Class Rooms	10	10
6	Departmental Library and E-Resources	10	10
7	Computing Facilities and Software	10	9
8	Adequacy of Offices and Furnishing for Faculty	10	7
9	Faculty- Student Ratio	10	0
10	Support Staff (Technical/Administrative) Adequacy	10	7
	Total Score (out of 100)	**100**	**73**

SWOT analysis by the department :

Strength

- Well qualified and experienced faculty and staff
- Well equipped laboratory infrastructure
- Availability of smart classrooms and auditorium
- Research lab fitted with high end infrastructure (Research lab with high end workstations, ANEKA-Cloud PaaS software, Qualnet)
- Students diversity (cultural/language/academic courses)
- Modular course design with multi entry and multi exit. (ICD/UG/PG/PhD) Outgoing students from a course can be the input for next higher-level course
- Attractive research fellowships (Departmental/QIP)
- Availability of PDA grant for the professional development of faculty
- Allocation of funds under various Govt. schemes for department upgradation
- Access to various online journals
- Strong book bank through central/departmental library
- Encourage students for various academic and research opportunities like ACM student chapter, CSI student chapter etc
- Industry relevant updated study scheme and syllabus for ICD/UG/PG programme
- Excellent academic environment for student grooming and career development

Weakness

- Lacking in consultancy and funded research projects
- Lack of industry collaboration with respect to course designing/course execution/Project execution
- Shortage of industry visits by faculty/students
- Shortage of regular faculty and staff positions
- Shortage of building for further expansion of the Computer Labs/Classrooms/Faculty rooms
- Location disadvantage which create difficulty in faculty retention
- Less number of workshops to encourage faculty members for quality research and patent publication
- Interdisciplinary research is lacking.

Opportunities

- Since maximum placements are happening in the IT sector, the department can further work towards placing the maximum students in good companies.
- In the recent time Infosys, Capgemini has conducted day one in SLIET and both of these are IT companies. Hope these will be conducting day one in SLIET in future also, the department can prepare the students to grab maximum positions during Day one
- During admission in the ICD/UG programs the aspirants has a good preference for the CSE branch. It is a good opportunity for the department to attract the meritorious students by showcasing our strengths.
- With the availability of research fellowships and PDA the department can further strengthen the research prospects
- With ample number of faculty members with PhD and research experience in the diversified fields, the research groups can be created to further strengthen the research/publications/patent in thrust areas.

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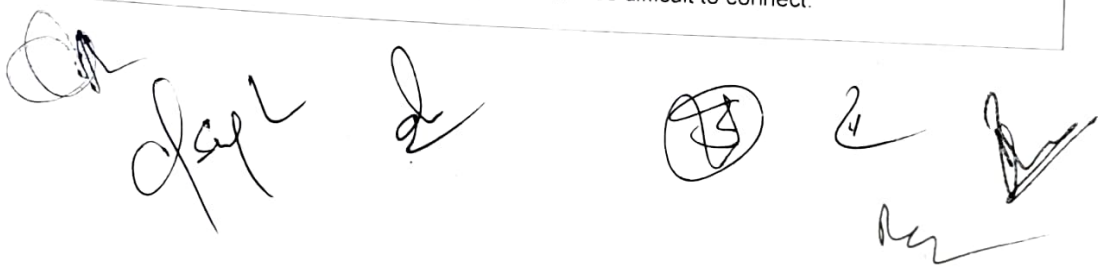
- With the availability of Laboratory infrastructure and experienced faculty/staff, Training programs/workshops can be conducted. This will help to generate the funds also.

Threats

- Downfall in admission at the PG level
- More and more students are opting for study abroad at the Diploma/UG level. The department may face admission problem in future. Therefore, we should be more concerned in the competitive environment.
- Fund generation
- Many big/small scale companies prefer to visit metro cities/well connected cities/locations. This affects the placement opportunities.
- Lack of IT sector in nearby cities/surrounding which makes difficult to connect.



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	10	5.5
2	Average No. of Ph. Ds Awarded per Year	10	7
3	Publications per Faculty in Indexed Journals/Year (Average of last three years)	10	6
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	10	8
5	Recognitions; Awards(National/International) to Faculty/Students	10	0
6	Consultancy and Externally Funded Projects	10	0
7	No. of Ph.D. graduates who took Academics as Career (Last 5 Years)	10	10
8	Students offered for higher studies	10	4
9	No. of qualified students NET/GATE/CAT etc (State/Central Civil Services)	10	4
10	Entrepreneurship	10	2
	Total Score (out of 100)	**100**	**46.5**

Comments & Suggestions for Improvement

A.1 ICD Programme

1. Theory and practical components are approximately in 50-50 ratio. COs and POs have been defined but have not been evaluated yet, and CBCS is not implemented.
2. 70-80% mapping of the curriculum has been done with the NSQ Framework.
3. Industrial training of the students is in place but there is a lack of industrial visits/tours due to the Covid-19 pandemic.
4. No seminar exists in the curriculum for ICD students. A system needs to be developed to identify and support weak students. Assisted learning system for the students' needs to be strengthened.
5. The duration of activities related to skill-development needs to be increased. A non-credit course for alumni-student interaction may be introduced.
6. Mapping of ICD courses with NSQF exists but outcomes need to be evaluated.
7. Upgradation of existing labs for skill development needs to be strengthened.

A.2 UG Programme

1. Study material developed by faculty needs to be enhanced.
2. List of additional new experiments included in the curriculum need to be documented clearly.
3. Process related to CO-PO mapping is in place but COs pertaining to question papers need to be mentioned clearly.
4. Industrial training of the students is in place but there is a lack of industrial visits/tours due to the Covid-19 pandemic.
5. More efforts are required to support the weaker students.
6. Placement activities in department needs to be enhanced.

A.3 PG Programme

1. Industry person may be invited for content delivery.
2. M. Tech students must be involved conduct activities for B.E. students.
3. M. Tech students should be involved for technical societies.
4. No tour/ visit of students could be planned due to COVID 19 pandemic.

A.4 Ph. D. Programme

1. More emphasis should be given to enhance the infrastructure and requirements.
2. More papers should be published in reputed journals.

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SUMMARY SHEET

1.	Name of the Department	Computer Science and Engineering	
2.	Name of Reviewer Designation & Address	**From Academia**	**From Industry**
		As Below	———
3.	Date of Meeting	31.08.2022	

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) (A.1)	UG Programme (Max Score 100) (A.2)	PG Programmme (Max Score 100) (Average of all PG programs) (A.3)	Doctoral Programmme (Max Score 100) (A.4)	(B)	(C)	(D)	(A+B+C+D)
81	84	84	63	55	73	46.5	486.5

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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Name & Signature of HOD

From Academia

1.) HoD (CSE)
2.) Dean (Students Welfare)
3.) Dr. Manoj Kumar Sachan
4.) Prof. J.S. Ubhi
5.) Prof. P.K. Dhiman
6.) Prof. Harsh Kumar Verma (External Expert, NIT, Jallandhar)