

**Academic Audit Report
(2019-2020)**




**Department of Computer Science and Engineering
Sant Longowal Institute of Engineering & Technology,
Longowal**




Department of Computer Science and Engineering
Sant Longowal Institute of Engineering and Technology


Recommendation of the committee during the academic audit of the Department of Computer Science and Engineering (CSE), SLIET on dated 24-09-2021 are as follows:


1. Update the study scheme and syllabus of the ICD Programme offered by the CSE department to make it as per requirements of industry.
2. To give more flexibility in the syllabi of ICD, UG, and PG programmes' by:
 - a. Providing content selection flexibility at the course instructors' end.
 - b. Add-on content by faculty.
3. Encourage research in the domains of deep learning, fog computing, IoT, blockchain technology, etc. for UG and PG programmes.
4. Increase frequency of interaction sessions between faculty members and students after the classes.
5. Propose a grading system for PG dissertation instead of the existing acceptance/non-acceptance system.
6. Start/Revive Students' Chapters (ACM students' chapter, CSI students' chapter, etc.). Students' Chapters provide students with various academic and research opportunities.
7. To foster interdisciplinary research among PG and doctoral scholars, bring in faculty from other departments/institutes and other organizations for co-supervision.
8. Increase financial support for research students to attend quality conferences in their areas of research.
9. Encourage faculty members for Government/Industry-funded research projects. These projects will help to enhance the research infrastructure in the department which will, in turn, improve the research ambience of the department.
10. Encourage faculty members to publish quality work and apply for patents.
11. Sign Memorandum of Understanding (MoUs) with other Academic Institutes/Government Departments/Industries to enrich the knowledge base of faculty members and students.
12. Get more Ph.D. research grants from Government Departments/Industries to increase the number of Ph.D. scholars in the department.
13. Procure new high-configuration workstations to help research scholars in their research.
14. Faculty members should attend quality improvement training to broaden their knowledge base.
15. Provide more space for offices and laboratories as per government standards.
16. Cultivate entrepreneurial thinking in students and help students with the infrastructure to start new ventures.

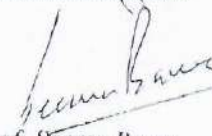

18/10/2021
Prof. Manoj Sachan
(HOD, CSE), Convenor


Prof. A. S. Arora
IQAC Member


18/10/21
Prof. Birmohun Singh
Department Nominee


Prof. A. P. Singh
Professor (ECE)


Prof. Mahesh Arora
Professor (M&H)


Prof. Seema Bawa
Professor, TIET, Patiala
External Member

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2019- 2020)

PROFORMA OF ASSESSMENT

1. Name of the Department : Computer Science and Engineering
2. Reviewer (Name, Designation & Address) :
3. Date of Review: 24/09/2021

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		Remarks
		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	Statutory Approvals from AICTE
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	7	10	
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	9	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 <i>developing expertise in a particular group of techniques.</i>	10	10	SSDC Club, IEEE Student Chapter
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	10	10	
10.	Availability of workshop type lab/laboratory for providing hand on training to the students for skill development	10	10	List of Laboratories attached as Annexure
Total Score (out of 100)		96	100	

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A. ACADEMICS

	UG Program	Score		Remarks
		Self assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	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	8	10
9.	Effectiveness of Assisted Learning in Tutorial classes/seminars for Students Faculty Mentoring/Faculty Advisor System for Students/Class of Students	9	9
10	Placement %age/higher studies options (last three years)	8	10
Total Score (out of 100)		95	99

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SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (20 19 - 20 20)

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3. Date of Review:

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	PG Program (Separate for each program)	Score		Remarks
		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	Dept. is following the AICTE model curriculum
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	Google classroom used as LMS E-resources including e-journals, e-books, search engines are available. Dept has two smart classrooms.
6.	Technical Societies/ Colloquium for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	10	10	SLIET Software Development Club, IEEE

7.	Tour/Training/Industrial visits/Internship opportunities	8	10	Not compulsory as per the PG curriculum
8.	Collaboration with other departments (within institute)	7	7	Open elective subjects for other departments
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10	10	Class counsellors, Student Thesis supervisors
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	10	10	
Total Score (out of 100)		95	97	

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 - A large checkmark or signature below the initials.

2019 - 2020

A.4	Doctoral (Ph.D) Programmes	Score		Remarks
		Self assessment	Expert assessment	
1.	Intake of Ph.D Students	10	10	Attached List A4.P1&P7
2.	Admission Process	10	10	SET Brochures
3.	Pre-Ph.D Courses and Evaluation Process	10	10	SLIET Ph.D. Course Work
4.	Breadth and Depth of Knowledge of Students	10	10	SCI Publications
5.	Seminar/ Presentations and Technical Communication	10	10	SLIET Ph.D. Rules
6.	Research Facilities available in the Department	10	10	HPC Lab.
7.	Average No. of Research Students/Faculty	8	8	Attached List A4.P1&P7
8.	Average No. of Research Papers of Ph. D Students (Indexed Journals)	10	10	Attached List A4 P8
9.	Average Duration to Complete Ph.D (years)	10	10	5 Years
10.	Participation of Research Scholars in Conferences/Workshops	7	7	
Total Score (out of 100)		95	95	

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2019 - 2020

B. RESEARCH

		Score		Remarks
		Self assessment	Expert assessment	
1.	Research Ambience in the Department	8	8	
2.	Research Awareness among Doctoral Students	8	8	Attached A4. P8
3.	Thrust areas of research in the department	10	10	Attached B point 3
4.	Quality of Research	10	10	Attached A4. P4
5.	Collaborations with other departments (within the institute) and at National, and International levels.	7	7	Attached B point 5
6.	Impact and Quality of Publications	10	10	Attached B point 6 &7
7.	Relevance of Research to Knowledge Generation and Social Relevance	10	10	Attached B point 6 &7
8.	Student Exposure for Attending Quality Conferences/Symposia	7	7	
9.	Inter departmental collaborations	7	7	Attached B point 5
10.	Industry/externally funded sponsored research (Numbers and amount)	5	5	Attached B point 10 and D6
	Total Score (out of 100)	82	82	

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C. Departmental Infrastructure (Session 2019-2020)

		Score	
		Self assessment	Expert assessment
1	Adequacy of Class Rooms 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	8	8
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	10
8	Adequacy of Offices and Furnishing for Faculty	8	8
9	Faculty- Student Ratio	8	8
10	Support Staff (Technical/Administrative) Adequacy	8	8
	Total	92	92

SWOT analysis by the department

Strengths:

Weaknesses:

Opportunities:

Threats:

Suggestions for improvement:

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2019 - 2020

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	8	8	Attached D Point 1
2	Average No. of Ph.Ds Awarded per Year	8	8	A4.1
3	Publications per Faculty in Indexed Journals/Year (Average of last three years)	8	8	D3
4	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	8	8	D4
5	Recognitions; Awards(National/International) to Faculty/Students	8	8	D6 & B10
6	Consultancy and Externally Funded Projects	5	5	Attached B point 10 and D6
7	No. of Ph.D. graduates who took Academics as Career (Last 5 Years)	10	10	
8	Students offered for higher studies	8	8	D8
9	No. of qualified students NET/GATE/CAT etc (State/Central Civil Services)	5	5	D9
10	Entrepreneurship	5	5	
	Total	73	73	

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SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2019-2020)

SUMMARY SHEET

1.	Name of the Department	Computer Science and Engineering	
2.	Name of Reviewer Designation & Address	From Academia	From Industry
3.	Date of Meeting	24/9/2021	

Score Summary							
ICD Program (Max Score 100)	Academic			Research (Max Score 100)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
	UG Program (Max Score 100)	PG Programs (Max Score 100) (Average of all PG programs)	Doctoral Program (Max Score 100)				
100	99	97	95	82	92	73	638

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
18/10/2021
Name & Signature of HOD

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General Comments on,

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

- Proposed a multidisciplinary PG Diploma programme in Cyber Law and IT in collaboration with RGNUL, Patiala.
- Plan to propose a programme with industry collaboration.
- Continuing Financial support for students: M Tech, PHD Fellowship (Full time, QIP)
- Will organize FDP, STTP, Workshops, Training Programs for faculty/Staff/Students.

Vision of the Department:

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

Mission of the Department:

- 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.

2. Significant achievements of the department (faculty/Staff/Students):

- NBA Accreditation
- Hackathon event winner
- Participation of the students in the competitive exams
- 09 Students have secured good score in GATE Exam
- Research publications in SCI/SCIE Journals
- Workshop organized by the department for Non teaching staff
- ATAL FDP organized by the department for faculty.
- Online short-term training programme organized by the department for faculties on "Recent Advances in Artificial Intelligence" in July 2020.
- Short-term programme organized by the department for Non teaching staff on "Office Automation" in August 2020
- Online Short-term programme organized by the department for Non teaching staff on "Enhancement of Computer Skill- Level-1" in June 2021
- The department of Computer Science and Engineering, SLIET, Longowal has signed an agreement with Athens University of Applied Science, Technological Education Institute of Athens, Greece under International Faculty Mobile Program.

Eminent external experts visited to the department for expert talk:

- Expert talk on the topic "Use of Machine Learning and Optimization to solve real life processes" by Prof. Vijay Mago, Lakehead University, Canada, on 17th December, 2019.
- Expert talk on "Human Authentication" by Prof. Klimis Ntalianis, University of West Attica, Athens, Greece, on 26th November, 2019.
- Expert Talk on "Internet Of Things "(IOT) by Dr. Raj Kumar Buyya, Redmond Barry, Distinguished Professor & Director Cloud Computing And Distributed System (CLOUDS) Laboratory, University of Melbourne on 26th April, 2019.

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- Expert Lecture on the topic "E-Waste Management to avoid environmental Hazards" by Mr. Paramjeet Singh , Motivational Speaker & Environmental Awareness Project Head , Patiala on 10th December,2018.
 - Expert Lecture on the topic "Cloud Computing & Machine learning" by Dr. Anand Nayyar , Professor in Graduate school at Duy Tan University, Vietnam on 21st February 2018.
 - Expert talk on "General Education Trends in Greece" by Prof. Klimis Ntalianis of Athens University of Applied Science, Technological Educational Institutes under ERASMUS + programme on 07th February,2018.
 - Expert talk on "Social Computig and General Education Trends in Greece" by Prof. Klimis Ntalianis on 7th February 2018.
3. Placement record of the department (Last three years):
 - Annexure 1: Placement record of the department
 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
 - (i) Departmental Society : SLIET Software Development Club
 - (ii) Student Chapter(s) of Professional Societies: ISTE, CSI
 7. Scope of improvement in the presenting teaching –learning process:
 - Encouraging faculty for lecture recordings
 - Implementation of OBE based education
 8. The skill and expertise of the faculty/Technical staff in the department (specific):
 - Annexure 2: Thrust Areas
 9. Strengthening laboratory infrastructure (adding of new equipment's and use of present facility for optimum use):
 - Annexure 3: Equipment list
 10. Any other point

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SWOT Analysis

Strength

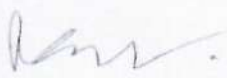
- Well qualified and experienced faculty and staff
- Well equipped laboratory infrastructure
- Research lab fitted with high end infrastructure (Research lab with high end workstations, ANEKA-Cloud PaaS software, Qualnet)
- Students diversity (cultural/language/academic courses)
- Modular course design 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 development of faculty
- Access to various online journals
- A Good collection of books through central and departmental library

Weakness


- Lacking in consultancy and funded research projects
- Lack of industry collaboration with respect to course execution/Project execution
- Shortage of industry visits by faculty/students
- Shortage of regular faculty and staff positions
- Shortage of smart class rooms
- Shortage of building for further expansion of the Computer Labs/Classrooms/Faculty rooms
- Location disadvantage which creates difficulty in faculty retention and students preference for admission in various courses.

Opportunities

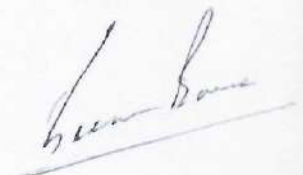
- Maximum placements are happening in the IT sector.
- Some good IT companies such as Infosys, Capgemini etc. have started conducting day one in SLIET.
- The discipline of computer science and engineering has been a preferred discipline during admission to the ICD/UG level.











- During admission in the ICD/UG programs the aspirants have 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 an ample number of faculty members with PhD and research experience in the diversified fields, the department gets strength to excel in the research/publications/patent in thrust areas.
- With the availability of Laboratory infrastructure and experienced faculty/staff, the number of paid/unpaid Training programs/workshops can be increased. 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.
- 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 it difficult to connect.

Ram

Subramanian

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Annexure: 2

Research Areas

1. Medical Image Processing and Signal Processing
2. Adhoc Networks, Wireless Sensor Networks, Digital Signal Processing, Optimisation Techniques
3. Artificial Intelligence, Autonomous Robotics, Multi-Agent System, Formal Verification, Distributed System, Software Engineering, and SOA.
4. Digital Image Processing, Bio-metrics, Machine Learning
5. Machine Learning, Text Analytics, Online Social Text Stream Analysis and E-Commerce
6. Trust and Reputation Systems, Cloud Computing, Brain Computing, Software Systems, Internet of Things, Big Data, Pervasive Computing
7. Delay tolerant Networks, Opportunistic Networks, Reinforcement Learning, Contract Theory
8. Computer Networks & Web Engineering
9. Natural Language Processing, Pattern Recognition, Deep Learning