SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2022 - 2023)

Last Academic Audit performed in 2020-2022

PROFORMA OF ASSESSMENT

1. Name of the Department: Food Engineering and Technology
2. Reviewer (Name, Designation & Address):

I	Dr. Vikas Nanda, HOD, Convener, FET, SLIET Longowal-148106
II	Dr Rajesh Kumar, Dean (SW)
III	Dr H.K. Sharma, Professor, SLIET Longowal-148106
IV	Dr S.S.Dhaliwal, Professor (Maths), SLIET Longowal-148106
V	Dr Sanjay Garg, Professor (M&H)), SLIET Longowal-148106
VI	Dr B.S.Khatkar, Formar Professor, Department of Food Technology, GJUS&T, Hisar

Date of Review: 01.12.2023

> **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 strength and weakness of the Department and your suggestions for future growth.

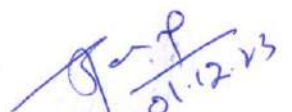(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

A. ACADEMICS

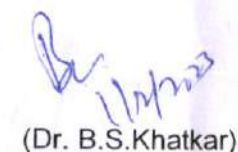| A.1	ICD Program	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/ practical (contents/ratio).	9 (10)	09	• The curriculum is designed through Board of Studies(BOS) meetings, which involve external experts from other education institutes, industry, and alumni. • Last BOS meetings were held in 2018, 2021 and 2022. • Minutes are available in public domain at: http://fet.sliet.ac.in/board-of-studies-mom/ • Course curriculum always aims to address students' early-stage comprehension of Food science and Technology concepts towards technical education and standardization of students' knowledge and learning. • The curriculum is always open for modification as per the need and BOS meetings are scheduled twice a year. • The ICD curriculum underwent a comprehensive overhaul under ICD restructuring programme and approved by the BOS in 2022. The final approval is required from the senate. • The ICD curriculum is given as **Annexure A.1- 1.**
2.	Equivalence and Relevance of curriculum at national level	10 (10)	09	• Keeping in view of the AICTE model curriculum, the Department of Food Engineering and Technology prepared a curriculum for ICD program with approximately total 142 credit which was approved by senate. The curriculum is at par with AICTE model curriculum. (**Annexure A.1- 2).** • Relevancy and effectiveness, however, can further be improved with the introduction of modified ICD Curriculum
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects (minor/major)]	10 (10)	10	• Academic load is generally measured in terms of credit load and course difficulty. The success of a student is generally measured in terms of GPA. The academic load on students per semester is given as **Annexure-A.1- 3.**

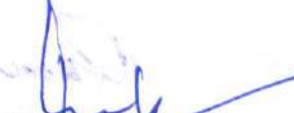(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10 (10)	10	• A continuous evaluation process is in place (as per institute guidelines), encompassing various components such as minors, majors, assignments, quizzes, and viva for both theory and practical aspects of the curriculum. • The entire examination process is transparent, i.e., students have access to all examination documents and can discuss their concerns with the teachers. • The details are provided in **Annexure A1-4**.
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	07 (07) 02 (03)	09	• As per course curriculum, the students must perform two-week practical training (TP-201) after 2nd semester and four-week industrial training (TP-301) after 4th semester **Annexure A1- 5**, consists of the details of the students who underwent industrial training. • The industrial visits organized for ICD students, including trips to the Flour Mill, Organic Farm, and Dairy Plant at Badbar, Distt Barnala on 11th February 2023, have immensely benefited their practical knowledge. These experiences have provided invaluable hands-on learning opportunities, enriching their understanding of real-world industrial processes. • The information related to the Industrial visit of ICD students is available at http://fet.sliet.ac.in/industrial-visit/
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	05 (10)	05	• In the academic setup, a course file is essentially a document that includes all the necessary details regarding the batch, assessment, and overall outcomes of the course. Course file generally includes information like the student details, course information, assessment metrics and assignments, Tutorial course outcomes and objectives etc. **Annexure A1-6**. • Students of ICD exhibit deficiencies in both analytical capabilities and soft skills, positioning them below par. • Furthermore, the students at ICD demonstrate subpar communication skills, contributing to their overall limitations in proficiency. • Weaker students are always encouraged to seek help of respective teachers.
7.	Faculty Mentoring/Faculty Advisor System forStudents/Class of Students	10 (10)	09	• Faculty mentoring is widely available through multiple avenues within the institute, ensuring comprehensive support for students. These avenues include the TGSMS and Counselors, offering guidance and assistance to students. Additionally, the institute implements the SMS (Student Mentorship Scheme) and TGS (Tutor-Guardian Scheme) to provide personalized mentoring and support. Moreover, the institute facilitates class counseling through dedicated class counselors assigned to each class, **Annexure 1 Point 7** • A period from 12:30-1:30 pm every Wednesday is fixed in the central timetable for students to interact with a teacher, after classes/labs. • These all are to provide students with valuable guidance and support.

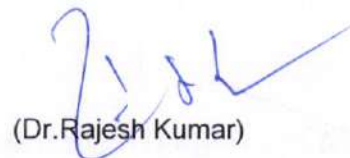(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

8.	Practical activities, non-academic and totally related to a specific trade for skill development and developing expertise in a particular group of techniques.	09 (10)	09	• For providing the professional platform to students of ICD program of the department to learn, boost and exercise their potential through various activities, various Professional Societies/ Students' Chapters have been established at Department of Food Engineering and Technology, SLIET, Longowal. The complete information is attached as Annexure-1 Point 8 • A Visit of the ICD students was organized by the Science Club, SLIET at Pushpa Gujral Science City, Kapurthala. (http://fet.sliet.ac.in/files/2023/05/VISIT-TO-PUSHPA-GUJRAL-SCIENCE-CITY-BY-ICD-STUDENTS.pdf).
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	10 (10)	09	• The integration of ICD programs with outcome-based vocational education, specifically through industry linkage, enhances skill development by aligning curriculum with industry needs. This connection ensures that learners acquire relevant skills, increasing employability and readiness for real-world job demands. • By fostering collaboration between educational institutions and industries, this linkage enriches learning experiences, making education more practical and responsive to evolving job markets.
10.	Availability of workshop type laboratory for providing hands-on training to the students for skill development	10 (10)	09	• Central Workshop: The Central Workshop was established at Sant Longowal Institute of Engineering & Technology (Deemed to be University), Longowal to impart practical training to the students of all the branches. The various shops of Workshop are fully equipped and provide centralized training to Certificate and Diploma students. • Well-Equipped laboratories along with the pilot plant are available having to provide hands-on training to the students for skill development. • Detailed information is provided in Annexure 1 Point 10. • Details of the Laboratories are available at http://fet.sliet.ac.in/virtual-tour-of-department/
		92 (100)	88(100)	
	Total Score (out of 100)	92	88	
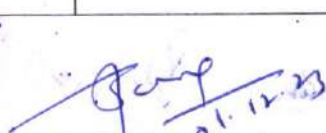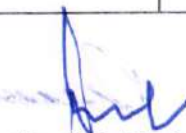
(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

A.2	UG Program	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	10 (10)	9	• The curriculum for UG program is designed by the members of the Board of Studies (BOS) constituted at the department level as per the structure/guidelines issued by AICTE/UGC time to time which are duly approved by the Senate of the institute. Periodical revision to the curriculum that is taken up by the BOS is based upon the inputs received from different stakeholders like students, faculty member teaching that subject as well as from faculties doing research work in that area, experts from industries who contribute via making new and industrially relevant topics in the field. Annexure-A2, point 1 • The curriculum is regularly subject to modification during the biannual BOS meetings. • Modified UG curriculum is available at (http://fet.sliet.ac.in/files/2022/12/BE-Food-Technology-Modified-by-BoS-26-August-2022-Syllabus-applicable-for-2021-onward-batches.pdf). • An important course of BE Programs Unit Operations in Food Processing (PEFT-612A) was shifted from open elective to Professional Elective and approved by BOS held on 30th November 2023.
2.	Status of study material developed by faculty for students	10 (10)	9	• The department's faculty has been actively involved in the ongoing development and updating of study materials for both theory and practical components of thecourses. • Moreover, the faculty has developed diverse presentations and lectures aimed at enhancing students' comprehension of the subject matter. • This commitment to providing high-quality educational resources enhances the learning experience for students. • Multimedia resources and demonstrations are in practice in the laboratory. • The faculty members have developed comprehensive practical manuals for all courses.

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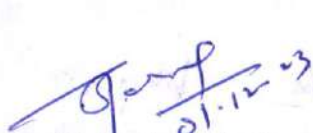|				
3.	Relevance of contents of courses taught to the students and scope of improvement (revision of syllabus, addition of new experiments)	10 (10)	9	• Course contents were designed as per AICTE guidelines as well as Board of Studies (BOS). • Based on regular feedback received from students, teachers, and alumni of the Department Academic Affairs Committee(DAAC), Board of studies have revised the course contents time to time. The courses are revised in 2018, 2019 & 2021. • Percentage change/modification in UG curriculum is given as (**Annexure-A2. Point 3**) • New experiments are being added regularly as per the needs of course contents and to address students' comprehension of concepts towards technical education and standardization of students' knowledge and learning.
4.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10 (10)	9	• Academic load is measured in terms of credit load and course difficulty. • The academic Load is provided separately
5.	Modern teaching methods in practice other than the conventional methods • E-Assisted Learning • Availability of Library Resources • Multi-Media Assisted Teaching	10 (10)	9	• The Department of Food Engineering and Technology leads in modern teaching methodologies, surpassing conventional approaches to offer students a dynamic learning experience. E-Assisted Learning stands as a cornerstone of our educational approach, integrating a plethora of digital resources and online tools that enhance the learning journey. • The students gain valuable advantages from our well-equipped laboratory facilities. • Multimedia-Assisted Teaching constitutes an integral part of our pedagogical approach, ensuring comprehensive comprehension, visualization, and effective application of complex p concepts. • The institute library offers an extensive collection of e-books, providing significant benefits to the students.

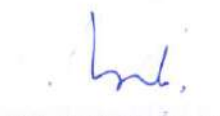(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

6.	Evaluation Process (Continuing Evaluation, and End-Term Exam) Theory and tutorial Practical (case studies)	10 (10)	10	The Department of Food Engineering and Technology follows institute guidelines, employing a thorough evaluation process to assess students' progress in both theoretical and practical aspects of the curriculum. Continuing Evaluation methods are utilized for both theory and tutorial components, encompassing various assessments such as assignments, quizzes, minor and major tests, and tutorial sessions. These methods ensure a consistent and comprehensive understanding of the subject matter throughout the course. • The entire examination process operates transparently, granting students access to all examination documents and allowing them to discuss any concerns with their teachers openly. • By employing a multifaceted evaluation process, the Department ensures that students not only gain theoretical knowledge but also cultivate the skills and apply it practically. • Details are provided at Annexure 1 Point 6.

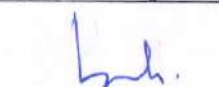(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

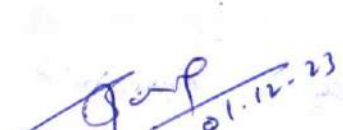|				
7.	Faculty–Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs	10 (10)	10	• Faculty mentoring is accessible through various avenues at the institute level, e.g., TGSMS and Counselors. • SMS (Student Mentorship Scheme) • TGS (Tutor-Guardian Scheme), • Class counseling through class councilor for each class • A period at 12:30-1:30 PM every Wednesday is fixed in the central timetable for students to interact with a teacher, after classes/labs. • The information is available at http://fet.sliet.ac.in/tgs-and-sms-schemes/
8.	Tour/Training/Industrial visits/Internship opportunities	7 (10)	6	• Students are offered a comprehensive array of practical experiences through a structured industrial training program seamlessly integrated into the curriculum. • Beginning with TPIN-421, a two-week in-house practical training during summer vacations after the 2nd semester, students acquire initial exposure to industry settings. • Following this, TPID-521 provides a two-week industrial training after the 4th semester, strengthening their practical understanding further. • Subsequently, TPID-621 offers an extensive four-week industrial training after the 6th semester, enabling students to explore real-world applications. • Moreover, INID-721, an internship in industry during the 8th semester, spans the entire semester, providing an immersive experience for students to apply their acquired knowledge within professional settings, thereby equipping them thoroughly for their future careers. • The BE 2nd Year students participated in an industrial visit to Pagro Frozen Foods Pvt Ltd and Kandhari Beverages Pvt Ltd located in Sadhugarh, Punjab on 3rd February 2023. • The information is available at http://fet.sliet.ac.in/industrial-visit/
9.	Effectiveness of Assisted Learning in Tutorial classes/seminars for Students. Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10 (10)	10	• Regular assignments are given to students. • Special quizzes and minors are offered to weaker students. • Weaker students are always encouraged to seek help of respective teachers. • A period at 12:30-1:30 pm every Wednesday is fixed in the central timetable for students to interact with a teacher, after classes/labs
10	Placement % age /higher studies options (last three years)	6 (10)	5	The recent statistics revealing a 58% average placement rate over the last three years are indicative of a concerning trend that demands immediate attention. While this figure represents a portion of successful placements, it also underscores an alarming reality – a significant percentage

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				of individuals are left without opportunities post-education. This scenario isn't conducive to fostering a promising future for our graduates. It highlights a systemic issue that necessitates a closer look at our strategies and initiatives concerning career development and placement. Therefore, concerted efforts need to be made to fortify our placement programs, reevaluate curricula to align them with industry demands, strengthen career counselling services, and establish robust networks with employers. Enhancing these aspects can significantly bolster our ability to ensure a more fulfilling and successful transition for our students into the workforce, empowering them to contribute meaningfully to their chosen fields and society at large.
	Total Score (out of 100)	93	86	

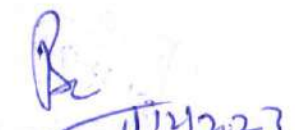(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

A.3	PG Program (Separate for each program)	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	10 (10)	9	• The curriculum for PG program is designed by the members of the Board of Studies (BOS) constituted at the department level as per the structure/guidelines issued by AICTE/UGC time to time which are duly approved by the Senate of the institute. Periodical revision to the curriculum that is taken up by the BOS. Necessary changes to be incorporated in the curriculum are discussed relevantly and revision is approved by the Senate. Details of the syllabus and scheme is available on website. The board of studies meeting was held on 13th July,2021. • The curriculum structure of the program encompasses various course components, each contributing distinctively to the overall academic journey. The program core, constituting 26% of the total credits, comprises fundamental subjects essential to the program, encompassing 23 contact hours distributed across 18 credits. **Program Electives**, accounting for 28% of the total credits, offer students the opportunity to tailor their learning experience, entailing 23 contact hours spread over 19 credits. **Open electives**, with a share of 4.4% in the curriculum, allocate 3 contact hours accounting for 3 credits. Additionally, Research Methodology and IPR modules, amounting to 2.9% of the total credits, involve 2 contact hours allocated to 2 credits. **Audit Courses**, though not for credit (NC), are part of the curriculum with 4 contact hours. The focus of the program also lies in the Dissertation, constituting 38% of the total credits, requiring an extensive engagement of 52 contact hours contributing to 26 credits. In total, the program accumulates 107 contact hours, resulting in 68 credits, offering a comprehensive and diversified learning experience across various domains. • The scheme and syllabus are available at http://fet.sliet.ac.in/syllabus/
2.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10 (10)	10	• This all is as per the guidelines of the institute.
	Evaluation Process (Continuing	10 (10)	10	• Program curriculum designed for this program is checked for its adequate compliance by examining the students, via continuous assessment. Routine assessment is carried out for tutorials, class assignments and laboratory work assigned to the students. • The performance of a student is evaluated by, quiz, assignments, seminars mid semester, and end semester exams. • Assessment for Research project work is carried out in the 3rd and 4th semester. Finally,

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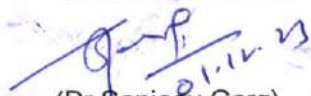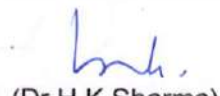(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

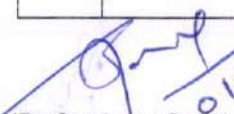|				
3.	Evaluation, and End-Term Evaluation)			after the internal evaluation of research work, the research thesis is sent to the external examiner through the academic section for the evaluation of research project. • Question papers are set in accordance to meet out largely the Cos, POs and PSOs of the program. Due weightage in terms of marks as well as course content of the subjects is given to each of exams. • The quality of these exams is ensured by designing these exams in a way where the students are assessed for their subjective as well as objective learning. Short and long answer type questions are set to evaluate the grasping ability of students. Assignments are formulated by the concerned teacher to strengthen their domain knowledge and application to complex engineering problems. • The nature of the assignments drives the students to use advance techniques including software tools for prediction and modelling and referring to additional sources of information. These are evaluated and discussed with the students to iron out their deficiencies. • This final assessment is designed to scale the depth of their knowledge and their ability to apply it effectively.
4.	Relevance of contents of courses taught to the students and scope of improvement.	9 (10)	9	• Course contents were designed as per AICTE guidelines as well as Board of Studies (BOS). • The syllabus fosters breadth and depth of understanding in the subject area. The revision of curriculum/syllabus according to the needs, to eliminate unnecessary units, & contents and to introduce latest and update content, new knowledge & practices is necessarily required. Revision has been done in the meeting of Board of studies held on 13th July 2021. • The curriculum is always open for modification as per the need and BOS meetings are scheduled twice a year. • Next BOS will be held soon in next month to review the curriculum with input from faculty, industry experts, and alumni. • Collaboration with industry experts and researchers is stressed and acted upon. Experts are regularly called from industry and reputed educational and research institutions to interact with PG students.
5.	Modern teaching methods in practice other than the conventional method • E-Assisted Learning	9 (10)	9	• Postgraduate theory classes are conducted in smart classrooms, seminar halls, and conference rooms, leveraging the latest advancements in e-assisted learning. Teachers utilize various cutting-edge tools such as PPT presentations, Google Classroom, virtual labs, and other contemporary resources to enhance the learning experience.

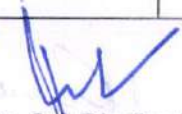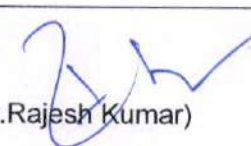(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)

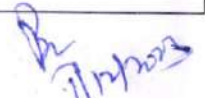|				
	• Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) • Multi-Media Assisted Teaching			• The Central Institute library has subscriptions to major search engines such as Scopus, Web of Science, and others, providing faculty and students access for their academic and research needs. • The Institute library has extended its subscriptions to online e-books, ensuring convenient access for both students and faculty members Institute library also has subscribed to various online class systems like MOOC, NPTEL etc. and teachers and students can make use of these.
6.	Technical Societies/ Colloquium for Students, Departmental Society, Student Chapter(s) of Professional Societies	9 (10)	09	Department of Food Engineering and Technology, SLIET Longowal has Society of Food Technocrats (SOFT) and AFST(I) Longowal, Chapter. Various competitions like poster making, quiz, debate, food craft and product development were organized under different themes
7.	Tour/Training/Industrial visits/Internship opportunities	05 (10)	05	Students are always encouraged to participate in tours/training/industrial visits.
8.	Collaboration with other departments (within institute)	9 (10)	08	• Co-Guide were taken from Department of CSE and Department of Chemical Engineering to Guide the M.Tech students. The Interdisciplinary Ph.D. program operates jointly between the Departments of Chemical Engineering and Computer Science & Engineering (CSE).
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10 (10)	09	• Class counsellor is assigned for each batch of PG class. • Every teacher is always available as a faculty mentor. • Senior students act as mentors for junior students. • A project supervisor is assigned for each student in the end of 2nd semester for project work.
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	10 (10)	10	• Supervisors are assigned to students at the onset of the 3rd semester, encouraging regular meetings between students and their respective supervisors. • Project work monitoring commences early in the 3rd semester. Within a month, students are expected to deliver presentations outlining their chosen topic and methodology. • Prior to the submission of the project report, students are required to present their work again. • The final viva-voce for project assessment is conducted at the semester's end by an external expert. • Students are encouraged to get their project work findings published in journals.\

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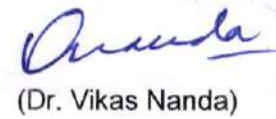| Total Score (out of 100)	91	88	

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A.4	Doctoral (Ph.D.) Program	Score		Remarks
		Self-Assessment	Expert Assessment	
1.	Intake of Ph.D. Students	10 (10)	10	The response towards Ph.D. admissions has been overwhelming, with students enthusiastically taking admissions even in the full-time category without scholarship. The department has successfully filled all allocated seats within the seat matrix. All seats accompanied by institute scholarships have been occupied.
2.	Admission Process	10 (10)	10	• Students are admitted through SET/NET/GATE. • Qualified students undergo interviews at the departmental level, following which admissions are granted based on the overall merit of the candidates
3.	Pre-Ph.D. Courses and Evaluation Process	10 (10)	10	• Pre-Ph.D. courses comprise of three subjects i) Research Methodology, ii) Research related subject and iii) Research Ethics • Two seminars related to research topics are held in 1st year. • Continuous evaluation processes are in place through both RAC and DRC mechanisms. • This all is as per UGC norms and institute rules.
4.	Breadth and Depth of Knowledge of Students	08 (10)	08	• To test the breadth and depth of a student's knowledge, entrance test/interview are held before the admission. • A continuous evaluation process through RAC and DRC is there after admission. • There is a minimum criterion for research publication in place. • This all is as per UGC norms and institute rules.
5.	Seminar/ Presentations and Technical Communication	09 (10)	08	• Two seminars are compulsory during the pre-Ph.D. • Ph.D. synopsis submission & evaluation through DRC and external expert before final confirmation of registration within one & half years after joining Ph.D. • Minimum criteria of research publication are in effect. • The progress of research students is monitored by holding seminars at least 1 per semester. This all is as per UGC norms and institute rules
6.	Research Facilities available in the Department	09 (10)	09	• Adequate laboratory and research facilities are available in the department. • The Advanced Quality Control Lab, Rheology Lab, Research Lab, and Food Biotechnology Lab are equipped with cutting-edge research instruments frequently utilized by research scholars for their investigations and experiments.
7.	Average No. of Research Students/Faculty	6 (10)	05	• On average, each faculty member guides and mentors five students,

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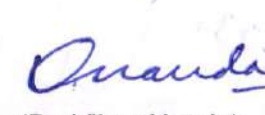
				ensuring personalized attention and support throughout their academic pursuits.
8.	Average No. of Research Papers of Ph. D Students (Indexed Journals)	08 (10)	08	• On average, Ph.D. students contribute to the publication of four papers in indexed journals, showcasing their research output. • List of Publication for last three years (2021,22, 23) **is attached as (Annexure-A4. II)**
9.	Average Duration to Complete Ph.D. (years)	08 (10)	08	• Based on last five year's data: average duration for full time/part time students to complete Ph.D. is 4-5 years (approx.)
10.	Participation of Research Scholars in Conferences/Workshops	08 (10)	08	• Research scholars actively engaged in these conferences, showcasing their expertise and securing multiple prestigious positions as recognition for their outstanding contributions. • Kindly see the list attached at (**Annexure-A4. III**)
	Total Score (out of 100)	**86**	**84**	

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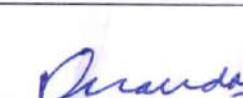
B. RESEARCH

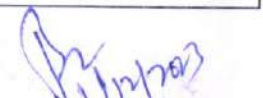| S.N.	Activity	Score		Remarks
		Self-assessment	Expert assessment	
1.	Research Ambience in the Department	9 (10)	8	• As mandated by the Department Mission, the Department of food Engineering & Technology is actively engaged in research activities. • The Department has well equipped laboratories facilities to augment the research work. • All this culminates in high impact research output in the form of publications and patents.
2.	Research Awareness among Doctoral Students	9 (10)	8	• As part of initial grooming, every research scholar completes a course on Research Methodology. In addition, she/he completes a course related to the proposed research area. • With this initiation, the doctoral student delivers two seminars in the broad area of research. • This activity provides the student with the opportunity to understand the recent developments in the proposed research area. • The student further elaborates on this and engages in extensive literature review and comes up with research proposals.
3.	Thrust areas of research in the department	8 (10)	8	**RESEARCH THRUST AREA OF DEPARTMENT** • Functional Food Products • Value addition of dairy and Agro industry products and by-products. • Processing of Cereal, Pulses, Oilseed and Millets • Characterization and value addition of Bee- products. • Postharvest Technology of Fruits and Vegetables. • Protein isolation and its characterization. • Isolation of starch and its characterization

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4.	Quality of Research	9 (10)	9	• Research papers are published in good impact factor and refereed journals. • Kindly see the list attached at (**Annexure-A4. II**) • This information has been uploaded in public domain at
5.	Collaborations with other departments (within the institute)and at National, and international levels.	8 (10)	8	• Collaboration with departments of CSE and Chemical Technology within the institute exists. • Several MoUs have been signed at the national level with institutions such as ICAR-CIPHET Ludhiana, SKUAST J&K, and numerous other institutes, fostering collaborative research work. • At international level collaboration with
6.	Impact and Quality of Publications	9 (10)	8	• Research papers are published in good impact factor indexed journals. • Kindly see the list attached at (**Annexure-A4.III**) • Citation index, h-index & i10 index of research papers published by the faculty & research scholars is good (can be from search engines in public domain like **google.com or Scopus or web of science, research gate, vidwan etc.**) • Our Ph.D. students are well placed in various academic and research institutes.
7.	Relevance of Research to Knowledge Generation andSocial Relevance	8 (10)	7	• Our Ph.D. students are well placed in various academic and research institutes. • The ongoing research on the department is beneficial to society e.g., food, agriculture, and biological systems. • Citation index, h-index & i10 index of research papers published by the faculty & research scholars is good (can be from search engines in public domain like **google.com or Scopus or web of science, research gate, vidwan etc.**) • Research conducted by faculty members relates to latest trends in science and technology like **millets, functional foods, traditional foods, food quality and safety,** etc. which directly corelate to the emerging needs and importance with respect to social relevance.
8.	Student Exposure for Attending Quality Conferences/Symposia	8 (10)	8	• Students attend good quality conferences /workshops/training programmes etc. Kindly see the list attached at (**Annexure-A4. IV**)
9.	Inter-departmental collaborations	7(10)	7	• Student collaboration with different departments like Chemistry, Chemical Engg., Computer Sci., Electrical & Instrumentation, Electronics & Communication with-in institute exists. • Ph.D. collaboration is going on with Chemical engineering, Computer science and Chemistry,

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10.	Industry/externally funded sponsored research (Numbers and amount)	2 (10)	2	• Dept. has sponsored projects from ICMR, DBT, AICTE, CSIR, ASEAN India- etc. • This information is uploaded at: http://fet.sliet.ac.in/research-project/.
	Total Score (out of 100)	**69**	**64**	
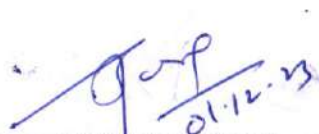
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c. Departmental Infrastructure

S.No	Activity	Score		Remarks
		Self-assessment	Expert assessment	
1.	i) Adequacy of Classrooms and ii) Multi-Media Facility	07 (10)	07	• No class room is available for PG classes (M.Tech as well as Ph.D) • Multimedia smart classroom teaching for UG is not sufficient (on availability basis) • Simple classrooms teaching ICD and UG programs. • Multimedia facilities in laboratories is not available. • Movable multimedia facilities available in the department can however be used for ICD and UG classroom teaching also.
2.	Availability of Laboratories	09 (10)	08	• Keeping in mind the strength of the Research scholars and M.Tech students, there are no sufficient laboratories in the department. • Laboratories space to all ICD, UG, PG and research programs need to be augmented. • Multimedia facilities in laboratories are not available for ICD and UG programs.
3.	Availability of Conference/Seminar Room, etc.	07 (10)	06	The conference room is not available exclusively to the department and shared with chemical engineering department. The Seminar Hall is also shared with the chemical engineering department. • Capacity of the seminar hall <100 people).
4.	Availability of Seating Space for Faculty and Research Students	06 (10)	05	• An adequate number and of sufficient space faculty rooms are not available. • Adequate seating space is not available for research students in the department and needs improvement. • Adequate seating space is available for technical staff within the labs. • Adequate seating space is available for supporting staff in the department
5.	Availability of Internet Services in Research Labs andClassrooms	09 (10)	08	• Wired LAN connections and Wi-Fi signals are available in all faculty, research scholar, technical staff and supporting staff rooms, laboratories, and classrooms. • Internet speed and continuity need to be improved. • Wi-Fi speed and continuity need to be improved

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6.	Departmental Library and E-Resources	08 (10)	07	• Department provide effective library services in general for all students but for UG, PG and research scholars. • The departmental library has a collection of 750 books. • The library holds M.Tech. project thesis of pass out students and Ph.D. thesis of pass out Ph.D. scholars of the department. • Departmental libraries also provide access to E-books on various topics from different publishers. • Central (Institute) library has a rich and vast collection of e-resources of teaching-learning easily accessible to faculty and students
7.	Computing Facilities and Software	08 (10)	08	• All the faculty members and research scholars are having table-top PCs, Lap-tops and i-pads with latest configurations, high performance with necessary software installed. • All faculty members have printers-cum scanners in their rooms. • Access to scientific databases and online resources. • Simulation and Modelling • Student Projects • Some professional software is required to be acquired
8.	Adequacy of Offices and Furnishing for Faculty	09 (10)	09	• Faculty rooms, technical staff rooms, supporting staff rooms, laboratories, classrooms are well furnished with adequate furniture (table and chairs), white boards, and other materials like, fans, ACs, computers, printers, UPS, LAN connections and Wi-Fi signals
9.	Faculty- Student Ratio	09 (10)	09	• 25:1
10.	Support Staff (Technical/Administrative) Adequacy	09 (10)	09	• Not Adequate number of technical staff for laboratories • Sufficient supporting/administrative staff in office is available.
	Total Score (out of 100)	**80**	**76**	

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SWOT analysis by the department

Strengths	Weaknesses	Opportunities	Threats
students Admitted in ICD and UG having poor communication and analytical skills. Most of the admitted students are from economically weaker section. Availability of highly qualified and experienced faculty and technical staff. Publications in reputed journals and with high citations. Internal (within the institute) and external (with outside) academic and scientific collaboration Curriculum modification flexibility Adequate admissions in the PG and Ph.D Programme. Participation in conferences and seminars Notable accomplishments of alumni in the field of higher education and placements, Good number of Research projects. Department contribution towards outreach activities like IGNOU Programme.	A few numbers of UG students could pass the GATE examination. Placement of UG students is very low. The faculty and technical staff strength is inadequate. Limited scope of adding new courses (choice-based learning) and offering elective courses. Lack of research consultancy culture. Lack of research funding. Growing need of adequate space (classrooms and laboratories). Lack of space for the departmental library. Unavailability of departmental (exclusive) conference/seminar hall as well as standard office space. Less number of activities under various MOUs	Introducing more flexible curriculum structure as well as offering elective courses as per NEP-2020 Collaboration with industry for internships, research, and consultancy Growing use of Information and communications technology (ICT) tools in teaching-learning process Research funding, patenting, publication To establish state of art laboratories and research labs Going for national/international partnership and student exchange programs Addition of laboratory scale as well as research level sophisticated instruments Making teaching-learning process more student centric. Making student counselling more effective	Increased competition due to establishment of more technical institution in Food Technology. Continuously Dip in the enrolment in UG Course through JEE mains. Rising trend in local youth to study abroad. Students are attracted towards other branches of Engineering as the salary structure is much more than being offered to food technocrats. Less retention of M. Tech students towards Ph.D. in the department. Dependence on contractual faculty for teaching.

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D. Outcomes

S.N.	Activity	Score		Action Taken Report
		Self-assessment	Expert assessment	
1.	i. Placements for ICD ii. Placement of B. Tech iii. Placement of PG Students iv. Placement of Ph. D Students	0 2 0.5 1.5	04	• Placement Data for UG Student (Annexure - A2-10). • Placement Data for PG students (Annexure A3 – 1) (Annexure - A4-11)
2.	Average No. of Ph.Ds. Awarded per Year No. of Ph.D. submitted apart from defense in an academic year	7+3=10	10	• 2 (Based upon data of last 3 years) • 1 (Based upon data of last 3 years)
3.	Publications per Faculty in Indexed Journals/Year (Average of last three years)	10 (10)	10	• Avg. no. of publications/faculty in last academic year ≥ 2 • List of publications is attached as (**Annexure-A 4.1**) • Information is also uploaded on the public domain at: This information has been uploaded in public domain at: http://fet.sliet.ac.in/published-research-papers/
4.	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	10 (10)	10	• Citation list of publications for last three years 2020, 21, 22 is attached as (**Annexure-A4.-12**) • Average Citations per Faculty/Year (Last-Three Years)(Web of Science/Scopus) ≥ 25
5.	Recognitions; Awards (National/International) to Faculty/Students	08 (10)	08	• Dr P.S. Panesar is among the 2% of scientists selected by the University of Standford. • Dr D. C. Saxena, Dr. Kamlesh Prasad, Dr. C.S.Riar, Dr. Sukhcharn Singh Dr P. Kumar are among the World Scientists as declared by Standford University. • Faculty members of the department along with some research scholars, are recognized as reviewers of reputable research journals. • Faculty members are Ph.D. thesis examiners to many reputed universities/institutes. • Faculty members are chairman/speakers to different national conferences. • Faculty members are expert speakers at different universities/institutes. • Research scholars have presented research papers in various national and international conferences. • Students represent institutes at different levels and participate at

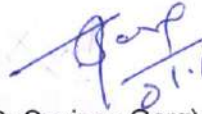(Dr Sanjeev Garg)   (Dr. S.S.Dhaliwal)   (Dr.H.K.Sharma)   (Dr.Rajesh Kumar)   (Dr. Vikas Nanda)   (Dr. B.S.Khatkar)
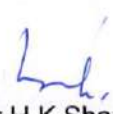
				conferences/schools/workshops. • This all information is uploaded at: http://fet.sliet.ac.in/
6.	Consultancy and Externally Funded Projects	9 (10)	9	• The department has externally funded research projects from AICTE, CSIR, etc. • This information is uploaded on the public platform at: http://fet.sliet.ac.in/research-project/. • The department also has the consultancy project from Marico's Limited - Research and Development and Analytics & Synthetics (P) Ltd, Panchkula (Haryana). • The information is uploaded at: http://fet.sliet.ac.in/consultancy-2/
7.	No. of Ph.D. graduates who took Academics as Career(Last 5 Years)	10 (10)	9	• Ph.D. graduates for the last five years took Academics as Career in govt/private universities/ colleges/ institutes. Information is provided at **Annexure A4-11**
8.	Students offered for higher studies	4 (10)	4	• Very few students opted for higher studies. **(Annexure A3 – 1)**
9.	No. of qualified students NET/GATE/CAT etc. (State/Central Civil Services)	5 (10)	5	• No student was able to clear that GATE/ CAT examination in the last academic year • Ph.D. students pursuing their doctorate without a scholarship successfully passed the NET exam and later obtained the Institute Fellowship
10.	Entrepreneurship	0 (10)	0	• Students do not consider entrepreneurship as a career; however, they should be encouraged to explore entrepreneurial paths.
	Total Score (out of 100)	**70**	**69**	

Comments & Suggestions for Improvement:
- Creating placement opportunities for both undergraduate and postgraduate students.
- Consider establishing industrial collaborations to enhance job prospects and internships for undergraduate students, as well as to engage in consultancy work and industry sponsored projects.
- Both UG and PG Students should be motivated to take up Entrepreneurship activities.
- Internal PG should be encouraged to apply for Ph.D. admission.
- GATE classes for UG students may be started to increase their pass percentage in GATE.
- Faculty members, consider submitting research projects to various central and state agencies.
- faculty members consider applying for awards and recognitions.
- Aim to publish research papers in high impact factor journals.
- Research scholars of the department will be encouraged to do quality research work and present the same effectively at various platforms.

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SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY
ACADEMIC AUDIT (2022 - 2023)
(SUMMARY SHEET)

1.	Name of the Department	Food Engineering and Technology	
2.	**Name of Reviewer** **Designation & Address**	**From Academia**	**From Industry**
		• Dr. Vikas Nanda, HOD, Convener, FET, SLIET Longowal • Dr. Rajesh Kumar, Dean (SW) • Dr. H.K.Sharma, Professor, SLIET Longowal • Dr. S.S.Dhaliwal, Professor (Maths), SLIET Longowal • Dr. Sanjay Garg, Professor (M&H)), SLIET Longowal • Dr B.S.Khatkar, Former Professor, Department of Food Technology, GJUS&T, Hisar	--
3.	Date of Meeting	01-12-2023	

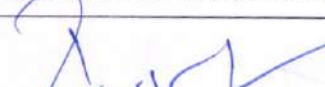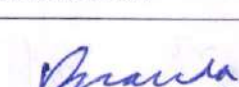| Score Summary							
Academic				Research (Max Score100)	Departmental Infrastructure (Max Score 100)	Outcome (Max Score 100)	Total Score (700)
ICD Program (Max Score 100)	UG Program (Max Score 100)	PG Programs (Max Score 100)	Doctoral Program (Max Score 100)				
88	86	88	84	64	76	69	555 (79.28%)

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.

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