

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2022 - 2023)

Last Academic Audit performed in 2020-2021 PROFORMA
OF ASSESSMENT

1. Name of the Department: PHYSICS
2. Reviewer (Name, Designation & Address):

- i. Dr. SS Verma, HOD Physics, SLIET Longowal
- ii. Dr. Kamlesh Kumari, Dean (P&D), SLIET Longowal
- iii. Dr. AS Dhaliwal, Professor, SLIET Longowal
- iv. Dr. Sanjay Marwaha, Professor (EIE), SLIET Longowal
- v. Dr. PK Dhiman, Professor (M&H), SLIET Longowal
- vi. Dr. Paramjit Singh, Professor, Department of Math, Stat. and Physics, PAU Ludhiana

Date of Review: 13.10.2023

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.

A. ACADEMICS

A.1	ICD Program	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility), Theory/practical (contents/ratio).	8 (10)	8	<ul style="list-style-type: none">• The curriculum is designed through Board of Studies (BOS) meetings, which involve external experts.• Last BOS meetings were held in 2018, 2019 and 2021. Minutes are available in public domain at: http://phy.sliet.ac.in/board-of-studies-bos/• Course curriculum always aims to address students' early-stage comprehension of Physics concepts towards technical education and standardization of students' knowledge and learning.• Curriculum is always open for modified as per the need and BOS meetings are scheduled twice

				<p>a year.</p> <ul style="list-style-type: none"> • Feedback of students through ERP portal (http://14.139.242.71:8081/SaralInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process • Percentage change/modification in ICD curriculum is given as Annexure-A1.1 • The practicals for both PH-111 and PH-121 are currently designed with a 100% correlation of theory and practicals. • Pos, PSOs and COs for PH-111 and PH-121 (theory and Practical) courses are already designed and will be finalized in the forthcoming BOS to be conducting in November, 2023. The formatting will be at par with NAAC guidelines. • Old course contents are already uploaded in the public domain at: http://phy.sliet.ac.in/syllabus/ • Similarly, the modified and updated course contents in the forthcoming BOS will also be uploaded on the departmental webpage: http://phy.sliet.ac.in/syllabus/
2.	Equivalence and Relevance of curriculum at national level	9 (10)	9	<ul style="list-style-type: none"> • Upon comparison with the "Model Curriculum for Diploma courses in Engineering & Technology 2019" provided by AICTE, it is evident that the physics curriculum offered is nearly identical and highly relevant at national level. • Relevancy and effectiveness however, can further be improved.
3.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects (minor/major)]	8 (10)	8	<ul style="list-style-type: none"> • Academic load per week is • L= 3, T= 1 and P=2 for both PH-111 and PH-121. • ICD students are introduced to additional 30 sets of hand-on science-engineering models other than the regular Physics practicals. • More efforts can be put to give them some minor/major projects leading towards better understanding of science-engineering linkage.
4.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10 (10)	10	<ul style="list-style-type: none"> • 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 whole examination process is in transparent manner, i.e., students have access to all examination documents and can discuss their concerns with teachers.
5.	Tour/Training/Industrial visits/Internship opportunities provided during the year	5 (07)	5	<ul style="list-style-type: none"> • Basically, the ICD students belong to other (engineering) departments (*OICD Programme) and study Physics courses PH-111 & PH-121 (Theory & Practical) in their 1st and 2nd semesters. • Tours/Training/industrial visits/internship opportunities are being arranged by their respective engineering departments. • Department of Physics do provide practical, hands-on training related to laboratory experiments through modern audio/video teaching and learning methods.

				<ul style="list-style-type: none"> • Additionally, the curriculum incorporates skill-based education, including hands-on training with various instruments viz., Vernier calipers, screw gauges, spherometers, microscope, physical balance, multimeter, colour code, ohm's law, meter bridge etc. • ICD students are introduced to additional 30 sets of hand-on science-engineering models other than the regular Physics practical. • More efforts should be put by the department to create more opportunities for them towards Tours/Training/industrial visits/internship
6.	Effectiveness of Assisted Learning, Tutorial System for ICD Students/ Seminars (Refer Course File)	2 (02)	2	<ul style="list-style-type: none"> • Assisted learning process has been undertaken, which needs to be strengthened further. • Practical manuals in Hindi and Punjabi along with English for PH-111 course are ready for use. (http://phy.sliet.ac.in/) • Feedback of students through ERP portal (http://14.139.242.71:8081/SaralInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process • Video displays of practical for class are in use and are also available on Public platform. LINKS are mentioned in Google Drive (Annexure-A1.II) • Class notes and practical notes are shared with each student through their e-mails. • Related material is available in google drive link: (Annexure-A1.III) • Need is of more tutorials are well as limited number of students in tutorial. • 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.
7.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10 (10)	10	<ul style="list-style-type: none"> • Faculty mentoring is accessible through various avenues at the institute level, e.g., TGSM (http://14.139.242.71:8081/SaralInfoSolutions.aspx?7079d2ff-ee4c-429b-a5a1-509c3069a6cb) and Counselors • SMS (Student Mentorship Scheme) • TGS (Tutor-Guardian Scheme), • Class counseling through class councilor for each class • A period at 4:30-5:30pm every Wednesday is fixed in the central time table for students to interact with a teacher, after classes/labs <p>These all are to provide students with valuable guidance and support.</p>
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 (10)	8	<ul style="list-style-type: none"> • Basically, the ICD students belong to other (engineering) departments (*OICD Programme) and study Physics courses PH-111 & PH-121 (Theory & Practical) in their 1st and 2nd semesters. • Department of Physics do provide practical, hands-on training related to laboratory experiments through modern audio/video teaching and learning methods. • Additionally, the curriculum incorporates skill-based education, including hands-on

				<p>training with various instruments viz., Vernier calipers, screw gauges, spherometers, microscope, physical balance, multimeter, colour code, ohm's law, meter bridge etc.</p> <ul style="list-style-type: none"> • ICD students are introduced to additional 30 sets of hand-on science-engineering models other than the regular Physics practicals. • The physics laboratory plays a crucial role in fostering specific skills, particularly in the measurement of physical quantities. This benefit extends to all students, regardless of their chosen engineering branch of study. • Efforts to be put by the department to create more opportunities for them towards specific trade for skill and technique development in collaboration with engineering departments. • Three language formula (as per NEP-2020) being implemented to impart practical knowledge. Practical manuals in Hindi and Punjabi along with English for PH-111 course are ready for use. LINK of Material on Google Drive is given (Annexure-A1.IV)
9.	Linkage of ICD programs to outcome based vocational education (Industry linkage)	9(10)	9	<ul style="list-style-type: none"> • During the practical's, students receive training in the use of fundamental measuring instruments, viz., Vernier calipers, screw gauges, spherometers, microscope, physical balance, multimeter, colour code, ohm's law, meter bridge etc. which are valuable for skills developments in various industrial contexts.
10.	Availability of workshop type laboratory for providing hands-on training to the students for skill development	9(10)	9	<ul style="list-style-type: none"> • Well-equipped diploma laboratories (two) are available having multimedia & projector facilities to provide hands-on training to the students for skill development.
		78 (89)	78	87.6%
	Total Score (out of 100)	88	88	88%

A.2	UG Program	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9 (10)	9	<ul style="list-style-type: none"> • In the Bachelor of Engineering (B.E.) program, the department offers Physics (Theory) with the course code BSPH-401 and a Physics laboratory BSPH-402. (http://phy.sliet.ac.in/courses/) • These courses are designed to tailor students' education in the field of technology, providing them with a foundational understanding of physics principles and practical laboratory experience to support their engineering studies. • Moreover, the department offered various elective subjects to tailor their education to their interests and career goals. • Common elective subjects in B.E. are as below: (http://phy.sliet.ac.in/courses/) STATISTICAL PHYSICS AND THERMODYNAMICS, BASIC MATERIALS SCIENCE PLASMA AND ITS APPLICATIONS RADIATION BIOPHYSICS LASER AND ITS APPLICATIONS • Department is unable to offer elective courses for the last few years due to shortage of faculty. • The curriculum is designed through Board of Studies (BOS) meetings, which involve external experts. • Feedback of students through ERP portal (http://14.139.242.71:8081/SaralInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process • Last BOS meetings were held in 2018, 2019 and 2021. Minutes are available in public domain at: http://phy.sliet.ac.in/board-of-studies-bos/ • Course curriculum always aims to address students' comprehension of Physics concepts towards technical education and standardization of students' knowledge and learning. • Curriculum is always open for modified as per the need and BOS meetings are scheduled twice a year. • Percentage change/modification in UG curriculum is given as (Annexure-A2.I) • The practical's for BSPH-402 are currently designed with a 100% correlation of theory (BSPH-401) and practical's. • POs, PSOs and COs for BSPH-401 and BSPH-402 (theory and Practical) courses are already designed (http://phy.sliet.ac.in/syllabus/) and will further be modified in the forthcoming BOS to be conducting in November, 2023. The formatting will be at par with NAAC guidelines.

				<ul style="list-style-type: none"> • Old course contents are already uploaded in the public domain at: http://phy.sliet.ac.in/syllabus/ • Similarly, the modified and updated course contents in the forthcoming BOS will also be uploaded on the departmental webpage: http://phy.sliet.ac.in/syllabus
2.	Status of study material developed by faculty for students	9(10)	9	<ul style="list-style-type: none"> • The department's faculty has been actively involved in the ongoing development and updating of study materials for both theory and practical components of the courses. • Furthermore, for the Practical course BSPH- 402, the faculty has created various presentations and lectures to help students grasp the physics principles underlying the practical experiments. • This commitment to providing high-quality educational resources enhances the learning experience for students. • Multimedia resources and demonstrations are in practice in the laboratory • Theory notes and practical manuals on BSPH-401 and BSPH-402 courses are in the public domain on google derive link: (Annexure-A2.II)
3.	Relevance of contents of courses taught to the students and scope of improvement (revision of syllabus, addition of new experiments)	9 (10)	9	<ul style="list-style-type: none"> • 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, the department Academic Affairs Committee (DAAC), Board of studies have revised the course contents time to time 2018, 2019 & 2021 • Percentage change/modification in UG curriculum is given as (Annexure-A2.I) • Feedback of students through ERP portal (http://14.139.242.71:8081/SaralInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process • Students Satisfaction Survey: (Annexure-A2.III) • Syllabus feedback and action taken report: (Annexure-A2.IV) • Student feedback is also available annually on ERP (http://14.139.242.71:8081/SaralInfoSolutions.aspx?00849c48-fc1c-4767-be95-3197f2e6ee86) • New experiments are being added regularly as per the needs of course contents and to address students' comprehension of Physics concepts towards technical education and standardization of students' knowledge and learning.
4.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	9(10)	9	<ul style="list-style-type: none"> • Formal Academic load per week is as: L= 3, T= 1 and P=2 for BSPH-401/402 courses. • Basically, the UG students belong to other (engineering) departments (*OUG Programme) • Some trades study Physics courses BSPH-401 (Theory) & BSPH-402 (Practical) in their 1st semester and others in their 2nd semester. • Students are also introduced to additional 30 sets of hand-on science-engineering models other than the regular Physics practical. • Efforts can be put to give them some minor/major projects in association with engineering departments leading towards their better understanding of science-engineering linkage.

5.	<p>Modern teaching methods in practice other than the conventional methods</p> <ul style="list-style-type: none"> • E-Assisted Learning • Availability of Library Resources • Multi-Media Assisted Teaching 	9(10)	9	<ul style="list-style-type: none"> • The Department of Physics is at the fore front of modern teaching methodologies, going beyond conventional approaches to provide students with a dynamic learning experience. E-Assisted Learning is a cornerstone of our educational approach, with a wealth of digital resources and online tools that enrich the learning journey. • Our students benefit from a well-equipped laboratory. • The Multi-Media Assisted Teaching is integral to our pedagogical approach, ensuring that complex physics concepts are not only understood but also visualized and applied effectively. • Video displays of practicals for class are in use and are also available on Public platform. LINKS (Annexure-A2.V) • Class notes and practical notes are shared with each student through their e-mails. • Related material is available in google drive link: • The teaching material and practical notes are available on google drive link: • Efforts are to make virtual labs for e-assisted learning of practical • Institute library has a large resource of e-books for the benefits of students • Through these innovative methods, the Department of Physics is committed to fostering a deeper understanding of the subject while preparing students for the challenges of today's rapidly evolving technological landscape.
6.	<p>Evaluation Process (Continuing Evaluation, and End-Term Evaluation) Theory and tutorial Practical (case studies)</p>	10(10)	10	<ul style="list-style-type: none"> • The Department of Physics employs a comprehensive evaluation process (as per institute guidelines) to assess students' progress in both theory and practical aspects of the curriculum. • For theory and tutorial components, Continuing Evaluation methods are employed to measure students' understanding and performance throughout the course. This includes minor, assignments, quizzes, major and tutorial sessions to ensure a continuous and thorough grasp of the subject matter. • The whole examination process is in transparent manner, i.e., students have access to all examination documents and can discuss their concerns with teachers. • In the case of practical, the evaluation process extends to practical case studies, where students are challenged to apply their knowledge in real-world scenarios. • This hands-on approach allows them to demonstrate their problem-solving skills and the practical application of physics principles. • Through this multifaceted evaluation process, the Department ensures that students not only acquire theoretical knowledge but also develop the ability to apply it practical, preparing them for success in both academic and real-world settings.

7.	Faculty–Student Interaction (Whether any slot is fixed for the students to interact with a teacher, after classes/labs)	10(10)	10	<ul style="list-style-type: none"> • Faculty mentoring is accessible through various avenues at the institute level, e.g., TGSMs (http://14.139.242.71:8081/SaralInfoSolutions.aspx?7079d2ff-ee4c-429b-a5a1-509c3069a6cb) and Counselors • SMS (Student Mentorship Scheme) • TGS (Tutor-Guardian Scheme), • Class counseling through class councilor for each class • A period at 4:30-5:30pm every Wednesday is fixed in the central time table for students to interact with a teacher, after classes/labs <p>These all are to provide students with valuable guidance and support.</p>
8.	Tour/Training/Industrial visits/Internship opportunities	6 (10)	6	<ul style="list-style-type: none"> • Basically, the UG students belong to other (engineering) departments (*OUG Programme) and study Physics courses BSPH-401 & BSPH-402 (Theory & Practical) in their 1st and 2nd semesters. • Tours/Training/industrial visits/internship opportunities are being arranged by their respective engineering departments. • Department of Physics do provide practical, hands-on training related to laboratory experiments through modern audio/video teaching and learning methods. • Additionally, the curriculum incorporates skill-based education, including hands-on training with various instruments viz., Lasers, Interferometer, Fibers, CRO, Photocells, dielectrics, ferroelectric materials etc. • UG students are introduced to additional 30 sets of hand-on science-engineering models other than the regular Physics practical. • Efforts to be put by the department to create more opportunities for them towards Tours/Training/industrial visits/internship in collaboration with engineering departments. • Three language formula (as per NEP-2020) being implemented to impart practical knowledge. Practical manuals in Hindi and Punjabi along with English for the course are to be prepared.
9.	Effectiveness of Assisted Learning in Tutorial classes/seminars for Students Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10 (10)	10	<ul style="list-style-type: none"> • Assisted learning process is well in place and needs to be strengthened further. • Video displays of practical for class are in use and are also available on Public platform. LINK (Annexure-A2.V) • Class notes and practical notes are shared with each student through their e-mails. • Related material is also available in google drive link: (Annexure-A2.II) • Need is of more tutorials are well as limited number of students in tutorial. • Regular assignments are given to students

				<ul style="list-style-type: none"> • Special quizzes and minors are offered to weaker students • Weaker students are always encouraged to seek help of respective teachers • A period at 4:30-5:30pm every Wednesday is fixed in the central time table for students to interact with a teacher, after classes/labs
10	Placement %age/higher studies options (last three years)	----	----	This activity is not related to Physics department as it is a *OUG Programme.
	Total Score (out of 100)	81	81	81%

A.3	PG Program (Separate for each program)	Score		Remarks
		Self-assessment	Expert assessment	
1.	Curriculum (Structure, Course Syllabi, Flexibility)	9(10)	9	<ul style="list-style-type: none"> • The course syllabi and content of M.Sc. (Physics) course closely adhere to the guidelines provided by the UGC (University Grants Commission). • Implementing a choice- based system has been challenge due to the limited availability of faculty members. • Nonetheless, we remain committed to delivering a high-quality education that aligns with UGC standards, and we continually seek opportunities for improvement within our capacity. • The curriculum is designed through Board of Studies (BOS) meetings, which involve external experts. • Last BOS meetings were held in 2018, 2019 and 2021. Minutes are available in public domain at: http://phy.sliet.ac.in/board-of-studies-bos/ • Course curriculum always aims to address students' comprehension of Physics, its latest developments and standardization of students' knowledge and learning. • Curriculum is always open for modified as per the need and BOS meetings are scheduled twice a year. • Percentage change/modification in UG curriculum is given as : (Annexure-A3.I) • Feedback of students through ERP portal (http://14.139.242.71:8081/SaraInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process • Students Satisfaction Survey: (Annexure-A2.III) • Syllabus feedback and action taken report-(Annexure-A2.IV) • Student feedback is also available annually on ERP (http://14.139.242.71:8081/SaraInfoSolutions.aspx?00849c48-fc1c-4767-be95-3197f2e6ee86) • Sixteen theory courses and eight laboratory courses give additional advantages to students to learn advance and basic concepts of Physics by doing. • Students are offered project work (learn while doing) in their last semester. • POs, PSOs and COs for all (theory and Practical) courses are already designed (http://phy.sliet.ac.in/syllabus/) and will further be modified in the forthcoming BOS to be conducting in November, 2023. The formatting will be at par with NAAC guidelines. • Old course contents are already uploaded in the public domain at: http://phy.sliet.ac.in/syllabus/ • Similarly, the modified and updated course contents in the forthcoming BOS will also be uploaded on the departmental webpage: http://phy.sliet.ac.in/syllabus

2.	Formal Academic Load on Students [Teaching, Laboratory/Practical, Projects(minor/major)]	10(10)	10	<ul style="list-style-type: none"> Weekly load on students is L=4x4=16, T=4x1=4 and P=8 and in last semester (4th) some of the students on merit basis as well as choice basis are offered project work. This all is as per the guidelines of the institute. No minor/major
3.	Evaluation Process (Continuing Evaluation, and End-Term Evaluation)	10(10)	10	<ul style="list-style-type: none"> In M.Sc. Physics program, we employ a rigorous evaluation process that comprises both Continuing Evaluation and End-Term Evaluation methods to assess our students' academic progress effectively. Continuing Evaluation involves ongoing assessments, assignments, quizzes, and periodic examinations throughout the duration of the program. Continuous feedback mechanism ensures that students are consistently engaged with the subject matter and have a solid understanding of the coursework as they progress. The End-Term Evaluation serves as the culmination of their efforts, with comprehensive examinations that test their mastery of the subject matter. This final assessment is designed to scale the depth of their knowledge and their ability to apply it effectively. Our evaluation process is structured to provide students with a well-rounded and in-depth understanding of physics, ensuring that they are not only well-prepared academically but also equipped with the problem-solving skills necessary for success in the field of physics. The whole examination process is in transparent manner, i.e., students have access to all examination documents and can discuss their concerns with teachers.
4.	Relevance of contents of courses taught to the students and scope of improvement	9(10)	9	<ul style="list-style-type: none"> 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, the department Academic Affairs Committee(DAAC), Board of studies have revised the course contents time to time 2018, 2019 & 2021 Feedback of students through ERP portal (http://14.139.242.71:8081/SaralInfoSolutions.aspx?619e22d5-8c4e-440d-8f53-1c004188ef3c) is taken into account to improve teaching and learning process Students Feedback Report: (Annexure-A2.III) Syllabus feedback and action taken report: (Annexure-A2.IV) Student feedback is also available annually on ERP (http://14.139.242.71:8081/SaralInfoSolutions.aspx?00849c48-fc1c-4767-be95-3197f2e6ee86) Incremental change/modification in UG curriculum is given as (Annexure-A3.I) New experiments are being added regularly as per the needs of course contents and to address students' comprehension of Physics concepts towards technical education and standardization of students' knowledge and learning.

				<ul style="list-style-type: none"> • Regularly review and update course content to align with the latest developments in physics research and technology. • Curriculum is always open for modified 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.	<p>Modern teaching methods in practice other than the conventional method</p> <ul style="list-style-type: none"> • E-Assisted Learning • Availability of Library Resources and Major Search Engines (like Scopus, Web of Science) • Multi-Media Assisted Teaching 	9(10)	9	<ul style="list-style-type: none"> • PG classes (Theory) are being held in smart class rooms, where teachers are making use of all the latest advances in e-assisted learning like PPTs, google class, virtual labs, NPTEL-Swayam lectures etc. • Department has developed e-notes of all practical and have uploaded them on the webpage in public domain as well as on the multi-media in the laboratory • Institute library has subscribed to all major search engines like Scopus, web of sciences etc and are available for faculty and students for use. • Institute library has also subscribed to online e-books which students and faculty can access easily. • 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	8 (10)	8	<ul style="list-style-type: none"> • Department provides the platform for students to engage in academic and extracurricular activities, fostering a sense of community and academic growth. • <i>Iota Physics society</i> had been established in 2018 and is working till date, link is http://phy.sliet.ac.in/iota-the-physics-society/
7.	Tour/Training/Industrial visits/Internship opportunities	10 (10)	10	<ul style="list-style-type: none"> • Students are always encouraged to participate in tour/training/industrial visits/internships which department arrange on regular basis. • Recently visits/tours as educational/technical trips to various institutes like IIT Ropar, IIT Delhi, GNDU Amritsar, IISER Mohali etc. have been arranged. • Students have taken regular internship at reputed institutes. • The information is available on http://phy.sliet.ac.in/departmental-activities/

8.	Collaboration with other departments (within institute)	8 (10)	8	<ul style="list-style-type: none"> Department do have two-way collaboration with various departments within the institute like Chemistry, Food Engg, Mechanical Engg., Maths, Electrical & Instrumentation, Electronics and Communication, Computer Sci. & Engg. Anf Chemical Technology.
9.	Faculty Mentoring/Faculty Advisor System for Students/Class of Students	10 (10)	10	<ul style="list-style-type: none"> 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 4th semester for project work HoD is always available as guide to PG students.
10.	Monitoring and continuous evaluation of the project work assigned to the students (mechanism)	10 (10)	10	<ul style="list-style-type: none"> Project work is assigned to students in the beginning of 3rd semester on the merit basis upto 2nd semester with a ratio of 1 teacher:1 student However, remaining students interested in project work are also accommodated. Students are encouraged to meet their supervisors regularly. Project work monitoring starts in the beginning of 4th semester. After 1 month, students are asked to give presentations on the selection of topic and methodology. After 2-3 months students are asked to give presentation on their progress. Before submission of project report, students are once again have to give presentation. The final viva-voce of project work is conducted at the end of semester by an external expert. Internal or supervisor evaluation of project work is out of 50% and rest 50% is by external examiner. Students are encouraged to get their project work findings published in journals. <p>All relevant documents related to point 10 are attached as (Annexure-A3.II) (Google Drive)</p>
Total Score (out of 100)		93	93	93%

A.4	Doctoral (Ph.D.) Program	Score		Remarks
		Self-assessment	Expert assessment	
1.	Intake of Ph.D. Students	6 (10)	6	<ul style="list-style-type: none"> Few students were admitted during 2022-23.
2.	Admission Process	10 (10)	10	<ul style="list-style-type: none"> Students are admitted through SET/NET/GATE. Interview of qualified students is held at the departmental level and after that the students are admitted on the basis of overall merit.
3.	Pre-Ph.D. Courses and Evaluation Process	10 (10)	10	<ul style="list-style-type: none"> Pre-Ph.D. courses comprise of three subjects i) Research Methodology, ii) Research related subject and iii) Research Ethics Two seminars related to research topic are held in 1st year Continuous evaluation process through RAC and DRC is there This all is as per UGC norms and institute rules
4.	Breadth and Depth of Knowledge of Students	8(10)	8	<ul style="list-style-type: none"> To test the breadth and depth of student's knowledge entrance test/interview are held before the admission. Continuous evaluation process through RAC and DRC is there after admission Minimum criteria of research publication is in effect This all is as per UGC norms and institute rules
5.	Seminar/ Presentations and Technical Communication	8(10)	8	<ul style="list-style-type: none"> Two seminars are compulsory during the pre-Ph.D. Ph.D. synopsis submission & evaluation through DRC and external expert before final confirmation of registration with in one & half years after joining Ph.D. Minimum criteria of research publication is in effect 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	7(10)	7	<ul style="list-style-type: none"> Adequate laboratory and research facilities are available in the department. Kindly see the list attached at (Annexure-A4.I) and (Annexure-A4.II)
7.	Average No. of Research Students/Faculty	0 (<2)	0	One student per eligible faculty
8.	Average No. of Research Papers of Ph.D Students (Indexed Journals)	10 (10)	10	<ul style="list-style-type: none"> About 4-5 avg. no. research papers of Ph.D. students List of Publication for last three years (2021,22, 23) is attached as (Annexure-A4.III) uploaded in the google drive
9.	Average Duration to Complete Ph.D. (years)	8 (10)	8	<ul style="list-style-type: none"> 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	8 (10)	8	<ul style="list-style-type: none"> Kindly see the list attached at (Annexure-A4.IV) And this information for 2022-23 is uploaded and available on public domain: http://phy.sliet.ac.in/departamental-activities/
Total Score (out of 100)		73	73	73%

B. RESEARCH

S.N.	Activity	Score		Remarks
		Self-assessment	Expert assessment	
1.	Research Ambience in the Department	8(10)	8	<ul style="list-style-type: none"> Well-equipped research labs are available in the department. Kindly see the list attached at (Annexure-A4.I & A4.II) And this information is uploaded and available on public domain on: http://phy.sliet.ac.in/laboratories/
2.	Research Awareness among Doctoral Students	8 (10)	8	<ul style="list-style-type: none"> Students present their work at national and international level conferences and review literature in their area of research from time to time. Recent Participation of Research Scholars in Conferences/Workshops Kindly see the list attached at (Annexure-A4.IV) And this information for 2022-23 is uploaded and available on public domain: http://phy.sliet.ac.in/departamental-activities/
3.	Thrust areas of research in the department	7 (10)	7	<p>RESEARCH THRUST AREA OF DEPARTMENT</p> <p>Experimental Physics</p> <ul style="list-style-type: none"> Material Science/Condensed Matter Physics Nanoscience & Nanotechnology Radiation and Nuclear Physics/High energy Physics <p>Theoretical Physics</p> <ul style="list-style-type: none"> Material Science Condensed Matter Physics Plasmonic This information has been uploaded in public domain at: http://phy.sliet.ac.in/faculty-staff/ and http://phy.sliet.ac.in/research/
4.	Quality of Research	8 (10)	8	<ul style="list-style-type: none"> Research papers are published in good IF (>2) and refereed journals. Kindly see the list attached at (Annexure-A4.III) This information has been uploaded in public domain at: http://phy.sliet.ac.in/faculty-staff/ and http://phy.sliet.ac.in/recent-publications
5.	Collaborations with other departments (within the institute) and at National, and international levels.	8 (10)	8	<ul style="list-style-type: none"> Collaboration with different departments with-in institute exists. At National Level collaborations with IUAC, Thapar inst. of Eng. and Tech., IIT Delhi, IIT Jodhpur exist. At international level collaboration with ZEUS experiment exists.
6.	Impact and Quality of Publications	8 (10)	8	<ul style="list-style-type: none"> Research papers are published in good impact factor (>2) 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)

				<p>or Scopus or web of science, research gate, vidwan etc.)</p> <ul style="list-style-type: none"> • Our Ph.D. students are well placed in various academic and research institutes.
7.	Relevance of Research to Knowledge Generation and Social Relevance	7 (10)	7	<ul style="list-style-type: none"> • 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 nanoparticles, radiation effects, nuclear waste recovery, plasmonics, plasmonic solar cells, thermoelectric properties of materials, high energy physics, dielectric properties of soil, biomaterials etc. which directly correlate to the emerging needs and importance with respect to social relevance • Kindly see the list attached at (Annexure-A3.III)
8.	Student Exposure for Attending Quality Conferences/Symposia	8 (10)	8	<ul style="list-style-type: none"> • From time-to-time students attend good quality conferences /workshops/training programmes etc. Kindly see the list attached at (Annexure-A4.IV) • This information for 2022-23 is uploaded and available on public domain: http://phy.sliet.ac.in/departmental-activities/
9.	Inter-departmental collaborations	2(10)	2	<ul style="list-style-type: none"> • Student collaboration with different departments like Mechanical, Chemistry, Food Technology, Chemical Engg., Computer Sci. & Tech, Electrical & Instrumentation, Electronics & Communication with-in institute exists. • One Ph.D. collaboration is going on within Physics and Electronics & communication Dept.
10.	Industry/externally funded sponsored research (Numbers and amount)	0(10)	0	<ul style="list-style-type: none"> • Earlier dept. has sponsored projects from AICTE, CSIR, MHRD etc. funding agencies • This information is uploaded on the public platform at: http://phy.sliet.ac.in/project/ • At present there are no industry/externally funded or sponsored research projects. • FIST project has been submitted in 2023 (under processing): https://onlinedst.gov.in/PI/Submitted_Projects.aspx
	Total Score (out of 100)	64	64	64%

General Comments on:

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

Comments:

- FIST project has been submitted (under processing: https://onlinedst.gov.in/PI/Submitted_Projects.aspx)
- Start of 5-year integrated B.Sc. (Hons) + M.Sc. Programme (Expected to start from AY 2024-25)

Our action plan includes:

Curriculum Enhancement:

- Revise and update the curriculum to align with NEP 2020's emphasis on multidisciplinary education, flexibility, and holistic learning.
- Introduce choice-based credit systems (CBCS) to provide students with a broader range of elective courses.
- Board of studies meeting are scheduled to be held in every semester (twice a year)
- Percentage change in syllabus during last 3 BOS is shown in tabular as well as graphical presentation

Outreach programmes:

- Department will continue to organize programs like national science week, national science day, state level science project competitions for school students
- Department will continue to organize education trips to ICD students and PG students in every semester.
- Department was actively involved in 2023 in providing free coaching classes along with Maths and Chemistry departments to the 10th pass students of nearby villages who could compete for SET-I test entrance to ICD program of institute (this was an institute initiative for local social welfare) and about 96 students out of 116 got admission in ICD program and this activity will be strengthened further.
- Department will organize national conferences and FDP programmes for the benefit of internal and external faculty, researchers and students

Technology Integration:

- Along with conventional methods of teaching-learning, efforts will to promote and strengthen the integration of technology in teaching and learning by using multimedia, smart class rooms and e-assisted learning resources in all programs ICD, UG, PG and Research
- Practical videos for ICD, UG and PG contents will be developed in three languages (Hindi, Punjabi and English) and shared on public domain
- Use of e-library resources like e-books, NPTEL-Swayam, MOOC platforms of learning will be further encouraged and

- Use of public knowledge domains of learning like google, scopus, web of science, research gate etc. will be promoted among students
- Science based hand on experimental models will be updated to provide to students to learn the correlation between science and technology integration

Faculty Development:

- Department and institute are always and will always help and motivate faculty members for their professional growth and development.
- Faculty members will be motivated to submit research projects, write books, book chapters, attend & organize conferences/STC/workshops/FDPs
- One faculty member is pursuing Ph.D. in the department itself. Such activities will be further strengthened.

Research and Innovation:

- Faculty members are actively involved in research and innovation and will continue to do so in future also.
- FIST-2023 project has been submitted.
- Faculty members will be motivated to submit more research projects.

Quality Assurance:

- Faculty, technical staff and administrative staff in the department, all are committed towards quality assurance in their respective work services and they will be encouraged and motivated to continue so.
- SOPs at all level like office, class and laboratories are in force for quality assurance and effect will be monitored.
- Students will always be assessed in all possible ways to improve the quality of teaching-learning.
- All quality assurance measures will be implemented in order to ensure the highest standards of education.
- Regular feedback system through ERP portal is used as a tool to review and update teaching methodologies, materials, and assessment systems.
- The feedback system will be improved further.

Student-Centric Approach:

- All stake holders of the department: faculty, technical & administrative staff are committed to provide student-centric approach in their services and will remain to do the same.
- Students are always encouraged and will be to share their problems with departmental faculty/technical staff/administrative staff members.
- Every class is assigned a class counselor to deal and listen to the issues raised by students. The counselling system will be made more effective.
- Under TGS and SMS activities every student is assigned a tutor-guardian as well as a senior student mentor. This TGSMS activity will be made more effective.
- Students will always be encouraged and cooperated to participate in extra curriculum activities.

Infrastructure Development:

- Though having adequate office, class, laboratory space, efforts will be to create more space and smart class rooms, Departmental exclusive conference/seminar halls and office.
- With a possible start of integrated B.Sc. +M.Sc. more classrooms and laboratory space will be required.
- All the class rooms and laboratories will be equipped with e-learning facilities.

Industry Collaboration:

- Sincere efforts will be made to strengthen ties with nearby industries to facilitate consultancy, research projects, internships, research partnerships, and placements.

Environmental Sustainability:

- Department and institute are all committed to stand for environmental sustainability.
- Efforts will be made to introduce sustainability and environmental education into the curriculum, promoting responsible citizenship and awareness of ecological issues.

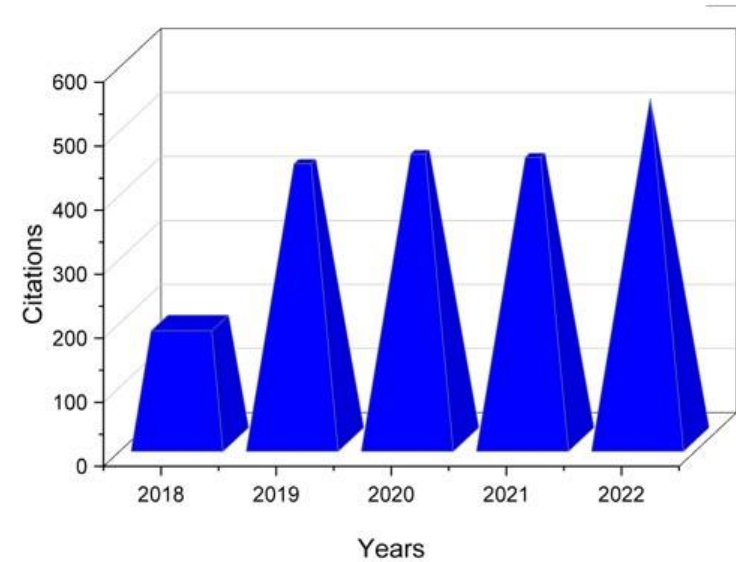
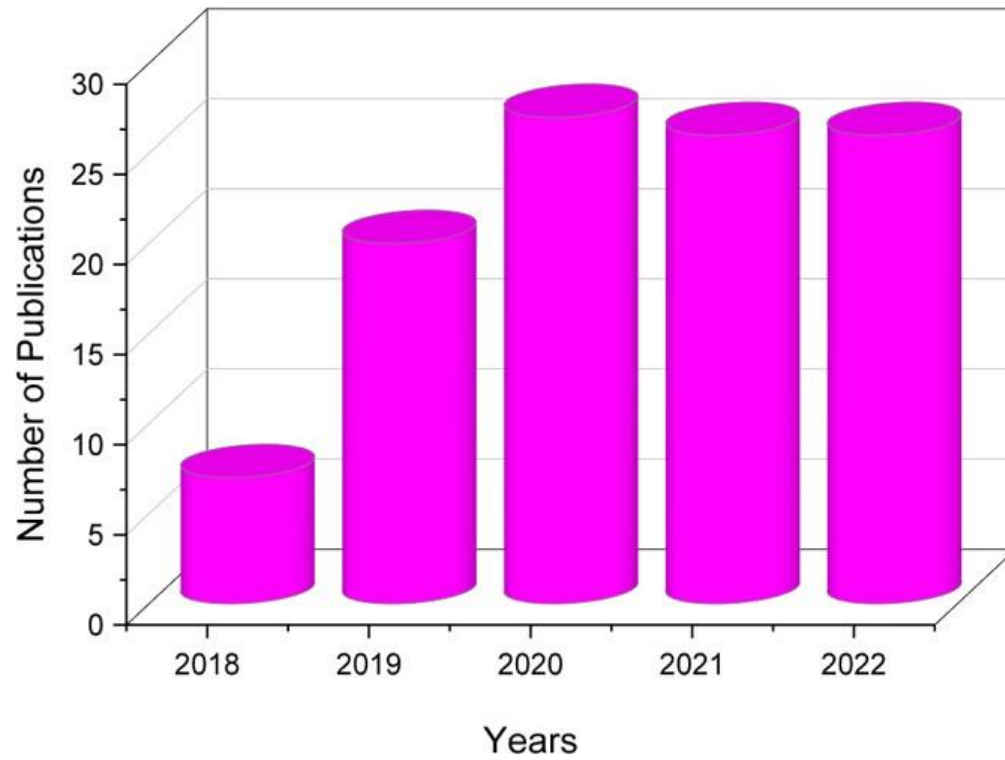
2. Significant achievements of the department (faculty/Students)

Research Output (for the last five years 2018-2023)

➤ Total No of Publications	:	81
➤ Cumulative Impact Factor	:	217.98
➤ No of articles with I.F.	:	71
➤ Average Impact Factor	:	3.07
➤ Highest impact factor	:	6.3
➤ Highest number of citations	:	66
➤ No of book chapters	:	04
➤ No of Ph.D.	:	26
➤ No of M.Sc. Dissertation	:	150

Research Output (for the last five years 2018-2023)

Research Publications



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Activity	Participants
Faculty This information is already uploaded in public domain with link as: http://phy.sliet.ac.in/faculty-staff/	
MOOCs certificates, National internship certificates, international internship certificates	Faculty members (Ms. Kanika Aggarwal and Dr. Prabhdeep Kaur) have done following courses through NPTEL/Swayam during 2022: <ol style="list-style-type: none"> a. 8 NITTTR Modules, compulsory for technical teachers, 2022 b. 12 weeks NPTEL/Swayam course "Introduction to Laser" during Jan-April, 2022 c. 12 weeks NPTEL/Swayam course "The Joy of Computing using Python" during July-Oct, 2022
Organizing conferences	The Department of Physics is organizing the 5th and 6th National Conference on "Advanced Materials and Radiation Physics" (AMRP) during the five years
Organizing FDP	Department of Physics Faculty, organized the National Level one-week faculty development Program (FDP) on "Characterization of Nano- Materials and Applications" from 22-26 May 2023.
Research Scholar activities This information is already uploaded in public domain with link as: http://phy.sliet.ac.in/departmental-activities/ (Also see - Annexure-A4.III)	
Mr. Ankit Kumar	Attended the TYC 6th Energy Materials workshop: Modelling Energy Interfaces held in London, United Kingdom, from December 14-16, 2022 Attended 14th Annual International Workshop on Advanced Materials held in Ras Al Khaimah, United Arab Emirates, from February 19-21, 2023.
Ms. Akanksha Bhardwaj	Attended and presented her paper in the METANANO Summer School on Nanophotonics and Advanced Materials at QUINGDAO, CHINA, organized by University of Russia from 16-18 August, 2023
Ms. Akanksha Bhardwaj Mr. Kailash	Got SLIET Quality Publication Award (SQPA) in 2023
PG students This information is already uploaded in public domain with link as: http://phy.sliet.ac.in/departmental-activities/ (Also see - Annexure-A4.III)	
Mr. Yogeesh N (2021-2023 batch)	Selected to pursue his Ph.D. program at the Department of Physics, IIT Jodhpur.
Ms. Shalini Bhattacharjee (2022-2024 batch)	<ul style="list-style-type: none"> ▪ Got selected for the flagship program "Vigyan Vidushi (Physics) 2023" at TIFR, Bombay. ▪ Participated in a two-day pre-IPSC workshop on Planetary Sciences and Exploration. This workshop, held on March 20-21, 2023.

Mr. Nikhil Kumar (2022-2024 batch)	<ul style="list-style-type: none"> ▪ Was selected for the Summer Fellowship Program 2023, a flagship program of IAS, INSA, and The National Academy of Sciences. He worked with Prof. Ashok Kumar Verma at BARC Bombay during June-July 2023. ▪ Got selected to participate in 10th IAPT NSSP 2023 to be held at the Department of Physics, Panjab University, Chandigarh from 27th October to 29th October, 2023
Mr. Paritosh Shukla (2022-2024 batch) Mr. Ajay Kumar Rundla (2022-2024 batch) Ms. Shalini Bhattacharjee (2022-2024 batch)	<ul style="list-style-type: none"> ▪ Got selected to participate in 10th IAPT NSSP 2023 to be held at the Department of Physics, Panjab University, Chandigarh from 27th October to 29th October, 2023.
Mr. Nikhil Kumar (2022-2024 batch) Mr. Shantanu Samanta (2022-2024 batch)	<ul style="list-style-type: none"> ▪ Got selected to participate in a two day workshop on Planetary Sciences and Exploration during 20-21 March 2023 at Physical Research Laboratory, Ahmedabad being organized by The Indian Planetary Sciences Association (IPSA)
Mr. Yogeesh N (2021-2023 batch) Ms. Harini S Rao (2021-2023 batch)	<ul style="list-style-type: none"> ▪ Qualified GATE-2023
<p>Placement record of the department (Last three years: 2019,2020, & 2021) (This information is already uploaded in public domain on ERP portal with link as: http://14.139.242.71:8081/SaraInfoSolutions.aspx?a4cb9fd5-e3ad-4c84-b9d8-3183440c7220)</p>	
Ms. LIKHINA LANSON (2019-20 BATCH) Mr. MANOJ KUMAR B (2019-20 BATCH) Mr. DHARMRAJ R (2019-20 BATCH) Mr. PRALEKH DUBEY (2020-21 BATCH) Mr. KG VISHAL SRIVATHS (2021-22 BATCH) Ms. HARINI S RAO (2021-22 BATCH) Mr. YOGESH N (2021-22 BATCH) Mr. KOOTHODIL ABHIJITH AUGUSTINE (2021-22 BATCH)	<ul style="list-style-type: none"> ▪ AP AT MOTHER ARTS AND SCIENCE COLLEGE, UNIVERSITY OF CALICUT, ▪ JRF AT BITS PILANI (GOA CAMPUS) ▪ SRF, BITS PILANI, GOA ▪ JRF AT IISER BHOPAL ▪ JRF AT CENTER FOR RELIABILITY SCIENCES & TECHNOLOGIES, NYCU, TAIWAN ▪ AI ANALYST INNODATA ▪ JRF, IIT JODHPUR ▪ JRF, NATIONAL YANG MING CHIAO TUNG UNIVERSITY, TAIWA

3. 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.

Comments:

Faculty/staff training is vital for curriculum enhancement and the addition of relevant new courses. To achieve this:

- Regular programs focusing on pedagogical teaching-learning, innovations, tech integration, and staying updated with industry trends.

- Workshops will be conducted for curriculum design, aligning with emerging trends.
- Faculty will be encouraged to establish international collaborations, participate in conferences, and submit research projects to integrate global best practices.
- Staff will be trained in advance level expertise in their respective knowledge domains.
- To promote faculty expertise through advanced degrees and research.
- BOS and workshops will be organized to train faculty members to further strengthen the teaching-learning process as well as to design curriculum and introduce new courses having relevance at national/international levels
- Efforts will be to encourage collaboration among educators for innovative teaching methods.
- Feedback system and its effective implementation will be upgraded for continuous improvement to further strengthen the teaching-learning process as well as to design curriculum and introduce new courses having relevance at national/international levels

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

Comments:

From time to time, Academic monitoring committee & HOD (Physics) advise/instruct/monitor faculty/technical staff to enhance the teaching-learning process.

6. Technical Societies/ Colloquium for Students

(i) Departmental Society: Iota Physics Society

Comments:

Iota Physics Society for MSc students was established in 2018 and it is still in existence.

(ii) Student Chapter(s) of Professional Societies

Comments: NIL

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

Comments:

Scope of improvement in the presenting teaching-learning process will focus on:

- Incorporating modern teaching methodologies, e-learning resources, use of multimedia teaching tools, smart class rooms, strong feedback system and its implementation
- Increasing student engagement through interactive learning experiences e.g. hands-on experiments etc.
- Fostering a supportive and inclusive learning environment
- Continuous feedback and assessment mechanisms can also be strengthened to better tailor instruction to individual student needs

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

Comments:

SN	Faculty	Expertise
1.	Dr K S Kahlon	Atomic Physics
2.	Dr A S Dhaliwal	Nuclear Physics and Materials Science
3.	Dr M M Sinha	Theoretical condensed matter Physics
4.	Dr S S Ghumman	Nuclear Physics and Materials Science
5.	Dr S S Verma	Theoretical Plasmonic Physics
6.	Dr P Kaur	High Energy Physics and Materials Science
7.	Ms K Aggarwal	Materials Science
8.	Dr. Jagdeep Singh	Materials Science
9.	Dr. Shubhpreet Kaur	Materials Science
10	Ms. Akanksha Bhardwaj	Plasmonics

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

Comments:

- Present laboratories/research labs are put to optimum use.
- Every year from time-to-time new equipment are being added.
- Some major equipment procured during last years are as follows:
Hall Effect apparatus, centrifugation machine, X-band microwave Test bench (Klystron Tube), X-band microwave Gunn diode, Densitymeter, Computer workstation.

10. Any other point

- To reduce the gap between offline and online teaching for ICD and UG students a number of videos have been prepared by Prof. K S Kahlon & team for PH-111 and PH-121 experiments and BSPH-402 which have been found very useful by the students. E-lab manuals for computational Physics (M.Sc.) have also been prepared. The same are available on public domain at:
- <https://online.fliphtml5.com/gscha/rlyc>; <https://online.fliphtml5.com/gscha/otnk/#p=1>, <https://online.fliphtml5.com/gscha/nyso/>
- Special coaching in theory and practical's is provided to week students of ICD Program
- Department was actively involved in 2023 in providing free coaching classes along with Maths and Chemistry departments to the 10th pass students of nearby villages who could compete for SET-I test entrance to ICD program of institute. This was an institute initiative for local social welfare) and about 96 students out of 116 got admission in ICD program.

C. Departmental Infrastructure

S.No	Activity	Score		Remarks
		Self-assessment	Expert assessment	
1.	i) Adequacy of Class Rooms and ii) Multi-Media Facility	6+3=9(10)	9	<ul style="list-style-type: none"> • Multimedia smart class room teaching for PG and UG (on availability basis) • Simple class rooms teaching for ICD and UG programs • Multimedia facilities in laboratories are available for ICD and UG programs • Movable multimedia facilities available in the department can however be used for ICD and UG class room teaching also.
2.	Availability of Laboratories	8 (10)	8	<ul style="list-style-type: none"> • Sufficient laboratories space is available to all ICD, UG, PG and research programs • Well-equipped laboratories are available for all ICD, UG, PG and research programs • Computational physics laboratory with 30 PCs is available for PG program • Multimedia facilities in laboratories are available for ICD and UG programs
3.	Availability of Conference/Seminar Room, etc	8 (10)	8	<ul style="list-style-type: none"> • Conference room is not available exclusively at department and shared at institute level • Seminar Hall is also shared with T&P Department • Capacity of the conference/seminar hall >250 person
4.	Availability of Seating Space for Faculty and Research Students	9(10)	9	<ul style="list-style-type: none"> • Adequate number of faculty rooms are available but not as per designation • Adequate sizes of faculty rooms • Adequate seating space is available for research students in the department but needs improvement • Adequate seating space is available for technical staff with in labs • Adequate seating space is available for supporting staff in the department
5.	Availability of Internet Services in Research Labs and Class Rooms	8 (10)	8	<ul style="list-style-type: none"> • Wired LAN connections and Wi-Fi signals are available in all faculty, research scholar, technical staff and supporting staff rooms, laboratories and class rooms • Internet speed and continuity need to be improved • Wi-Fi speed and continuity need to be improved

6.	Departmental Library and E-Resources	7 (10)	7	<ul style="list-style-type: none"> • Department provide effective library services in general for all students but for UG, PG and research scholars in particular • The departmental library has a collection of 750 books covering a wide range of topics in physics, including fundamental principles, specialized subfields, research methodologies, and related subjects. • The library holds 150 M.Sc. project thesis of pass out M.Sc. students and about 27 Ph.D. thesis of pass out Ph.D. scholars of the department • Departmental library also provides 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	8 (10)	8	<ul style="list-style-type: none"> • 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 • For students and research scholars printing facilities are at central place. • Department has a computer work station dedicated to computational studies by research scholars using Quantum espresso, win2K etc. • The department has dedicated “Computational Physics Lab” facility for PG students, where students and researchers can apply computational methods, simulations, and numerical techniques to solve complex problems in the field of physics. • Access to scientific databases and online resources. • Simulation and Modelling • Student Projects • Skills Development, coding languages commonly used (e.g., Python, MATLAB, Mathematica, C++) are available • Some professional softwares are required to be acquired
8.	Adequacy of Offices and Furnishing for Faculty	9 (10)	9	<ul style="list-style-type: none"> • Faculty rooms, technical staff rooms, supporting staff rooms, laboratories, class rooms are well furnished with adequate furniture (table and chairs), white boards, and other materials like window mess, fans, ACs, computers, printers, UPS, LAN connections and Wi-Fi signals
9.	Faculty- Student Ratio	9 (10)	9	<ul style="list-style-type: none"> • As per institute records following AICTE and UGC guidelines
10.	Support Staff (Technical/Administrative) Adequacy	9 (10)	9	Adequate number of technical staff in laboratories as well as supporting/administrative staff in office are available.
	Total Score (out of 100)	84	84	84%

SWOT analysis by the department

Strengths	Weaknesses	Opportunities	Threats (Suggestions for improvement)
<ul style="list-style-type: none"> ▪ Supporting work and administrative atmosphere ▪ Availability of highly qualified and experienced faculty and technical staff ▪ Availability of well equipped and modern smart class rooms and laboratories ▪ Publications in reputed journals and with high citations ▪ Internal (within the institute) and external (with outside) academic and scientific collaboration ▪ Curriculum modification flexibility ▪ Participation in conferences and seminars ▪ Notable accomplishments of alumni in the field of higher education and placements ▪ Departments contribution towards outreach activities like organizing conferences & FDPs, holding science project competitions/ science weeks/science days, free coaching to nearby students 	<ul style="list-style-type: none"> ▪ To be retiring soon faculty and staff members ▪ 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 (class rooms and laboratories) in case of increasing student strength or start of new courses ▪ Unavailability of departmental exclusive conference/seminar hall as well as standard office space ▪ Location of institute in terms of attracting students and competent faculty ▪ Standardization of knowledge at each level ▪ Establishment of more technical institution in the adjoining areas ▪ Lack of professional computational softwares ▪ Less number of MOUs 	<ul style="list-style-type: none"> ▪ 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 ▪ Creating more MOUs ▪ Going for Standardization of knowledge for each course ▪ Going for 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 effective 	<ul style="list-style-type: none"> ▪ Regular faculty and staff should be recruited on priority basis to avoid the dependence on guest faculty and staff ▪ Faculty members should be encouraged to submit research projects, create MOUs, develop industry-institute linkage. ▪ Flexible credit base education system as per NEP-2020 ▪ Start of new and integrated courses ▪ Efforts should be made to enhance the enrolment in PG and Ph.D. courses. ▪ Measure should be enforced for week students to be monitored, encouraged, motivated and helped. ▪ Strength of students in tutorial and laboratory classes should be optimum ▪ Retention of PG students towards Ph.D. should be looked into ▪ Retention of good faculty

D. Outcomes

S.N.	Activity	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	*OIC D *OUG 2 (2) 2 (2)	4	*OICD- other department program *OUG- other department program • Placement Data for PG Student (Annexure-D.I) • 100% of Ph.D. Students are placed
2.	Average No. of Ph.Ds Awarded per Year No. of Ph.D. submitted apart from defense in an academic year	5+2=7 (10)	7	• 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 for last three years 2020, 21, 22 is attached as (Annexure-A4.III) • Information is also uploaded on the public domain at: This information has been uploaded in public domain at: http://phy.sliet.ac.in/faculty-staff/ and http://phy.sliet.ac.in/recent-publications
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-D.II) • Average Citations per Faculty/Year (Last-Three Years)(Web of Science/Scopus) ≥ 25
5.	Recognitions; Awards (National/International) to Faculty/Students	6 (10)	6	• Faculty member of the department and some research scholars are recognized as reviewers of reputed research journals • Faculty members are Ph.D. thesis examiners to many reputed universities/institutes • Faculty members are chairman/speakers/editors to different national conferences • Faculty members are expert speakers to different universities/institutes • Research scholars have represented in various national and international conferences • PG student Mr. Nikhil Kumar (M.Sc.-22) have been selected for Summer fellowship of all three Indian Academies at BARC Mumbai • Students are representing institute at different levels and participating at _____

				<p>conferences/schools/workshops</p> <ul style="list-style-type: none"> • Need to apply for awards • This all information is uploaded on the public platform at: http://phy.sliet.ac.in/
6.	Consultancy and Externally Funded Projects	4 (10)	4	<ul style="list-style-type: none"> • Department had externally funded research projects earlier from AICTE, CSIR, MHRD etc. but not at present • This information is uploaded on the public platform at: http://phy.sliet.ac.in/project/ • FIST project has been submitted (under processing: https://onlinedst.gov.in/PI/Submitted_Projects.aspx) • Testing and characterization at central facility of institute < INR 5 lakhs is done every year
7.	No. of Ph.D. graduates who took Academics as Career (Last 5 Years)	9 (10)	9	<ul style="list-style-type: none"> • All (8 out of 8) Ph.D. graduates for last five years took Academics as Career in govt/private universities/ colleges/ institutes • This information is uploaded on the public platform at: http://phy.sliet.ac.in/notable-alumni/
8.	Students offered for higher studies	9 (10)	9	<ul style="list-style-type: none"> • About 25% students per pass out batch offered for higher studies. • This information is uploaded on the public platform at: http://phy.sliet.ac.in/notable-alumni/
9.	No. of qualified students NET/GATE/CAT etc. (State/Central Civil Services)	8 (10)	8	<ul style="list-style-type: none"> • About 20% students per pass out batch have qualified NET/GATE.
10.	Entrepreneurship	0 (10)	0	<ul style="list-style-type: none"> • Science students generally do not go for Entrepreneurship • Needs to be encouraged
	Total Score (out of 100)	67	67	67%

Comments & Suggestions for Improvement:

- Faculty members submit research projects.
- Faculty members should apply for awards and recognitions.
- Industrial collaboration should be established for job prospects and internship of PG students as well as for consultancy work
- Research papers in high impact factor journals should be produced
- Mock test series for PG students may be started to increase their pass percentage in NET/GATE/CAT etc.
- Research scholars of the department will be encouraged to do quality research work and present the same effectively at various platforms in future too.
- Placement opportunities should be created to PG and Ph.D. pass outs from the department
- Students should be motivated to take up Entrepreneurship activities
- Internal PG should be encouraged to apply for Ph.D. admission in the department
- Near by colleges should be contacted to motivate their students to take admission in PG course.

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

ACADEMIC AUDIT (2022 - 2023)

SUMMARY SHEET

1.	Name of the Department	Physics	
2.	Name of Reviewer Designation & Address	From Academia	From Industry
		<ul style="list-style-type: none"> • Dr. SS Verma, HOD Physics, SLIET Longowal • Dr. Kamlesh Kumari, Dean (P&D), SLIET Longowal • Dr. AS Dhaliwal, Professor, SLIET Longowal • Dr. Sanjay Marwaha, Professor (EIE), SLIET Longowal • Dr. PK Dhiman, Professor (M&H), SLIET Longowal • Dr. Paramjit Singh, Professor, Department of Math, Stat. and Physics, PAU Ludhiana 	--
3.	Date of Meeting	13-10-2023	

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) (Only one PG program)	Doctoral Program (Max Score 100)				
88	81	93	73	64	84	67	550 (79%)

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 & Signature of HOD

Google Drive (Public platform) link for the following attached material (<https://drive.google.com/drive/my-drive>)

Login Details:

Login Id: departmentofphysicslietlongow@gmail.com

Password: physics2023

Item No. A: Academics

Sl.No.	Annexure	Information (Item)
1.	Annexure-A1.I	Percentage change/modification in ICD curriculum
2.	Annexure-A1.II	Video displays of practical
3.	Annexure-A1.III	Class notes and practical notes
4.	Annexure-A1.IV	Practical manuals in Hindi and Punjabi
5.	Annexure-A2.I	Percentage change/modification in UG curriculum
6.	Annexure-A2.II	Theory notes and practical manuals on BSPH-401 and BSPH-402 courses
7.	Annexure-A2.III	Students Satisfaction Survey
8.	Annexure-A2.IV	Syllabus feedback and action taken report
9.	Annexure-A2.V	Video displays of practical for class
10.	Annexure-A3.I	Percentage change/modification in UG curriculum
11.	Annexure-A2.III	Students Satisfaction Survey
12.	Annexure-A2.IV	Syllabus feedback and action taken report
13.	Annexure-A3.II	Monitoring and continuous evaluation of the project work
14.		
15.	Annexure-A4.I	Laboratory and research facilities
16.	Annexure-A4.II	List of major equipment in the departmental laboratories
17.	Annexure-A4.III	List of Publication for last three years (2021,22, 23)
18.	Annexure-A4.IV	Participation of Research Scholars in Conferences/Workshops

Item No. B: Research

Sl.No.	Annexure	Information (Item)
1.	Annexure-A4.I & A4.II	Research Ambience in the Department

Item No. C: Departmental Infrastructure

Item No. D: Outcomes

Sl.No.	Annexure	Information (Item)
1.	Annexure-D.I	Placement Data for PG Student
2.	Annexure D-II	Citation list of publications for last three years 2020, 21, 22