



Sant Baba Bhag Singh UNIVERSITY

Village: Khiala: PO: Padhiana, Distt: Jalandhar 144030
Website: www.sbbsuniversity.ac.in Phone: 0181-2711163 Fax: 0181-2711555

Department of Physical Sciences

Date: 7/4/2023

Ref. No: SBBSU/UIS/PS/2023/ 168 (b)

Proceedings of Meeting of Board of Studies (BoS) of Department of Physical Sciences

As per circular wide no SBBSU/UIS/PS/2023/ dated 7-03-2023, the meetings of the Board of Studies (BOS) for M.Sc (Hons.) Physics 2 year programme (as per New Education Policy 2020) in Department of Physical Sciences was held on 9th March 2023 at 10:00am onwards through online mode (Google Meet) for implementation of New Education policy 2020 in master programme.

Following members were present in the meeting and approved the BOS agenda:						Position	Signature
S.No.	Name	Subject	Designation	Institute			
1	Dr. Aneet Kumar	Education	Dean Academics	SBBSU		Chairperson	
2	Dr. Shweta Singh	Microbiology	Dean UIS	UIS		Member	
3	Dr. Nareshpal Singh Saini	Physics	Professor	Department of Physics, Guru Nanak Dev University, Amritsar, India Email: nssaini@yahoo.com , nssaini.phy@gndu.ac.in Mobile: +91-9417384692, Office: +91-183-2258802		External subject Expert (Physics)	Present online
4	Dr. Nisha Sharma	Chemistry	Head, Physical Sciences, Associate Professor Chemistry	UIS		Member	
5	Dr. Mithu Maiti Jana	Chemistry	Coordinator, Physical Sciences, Associate Professor Chemistry	UIS		Member	
6	Dr. Honey Sharma	Physics	Assistant Professor	UIS		Internal Member	
7	Dr. Satnam Singh	Physics	Assistant Professor	UIS		Internal Member	
7	Dr. Rampal	Physics	Assistant Professor	UIS		Internal Member	
9	Ms. Arwinder Kaur	Physics	Assistant Professor	UIS		Internal Member	
10	Dr. Vijay Dhir(Dean UIET) / His representative					Member	
11	Dr. Aneet Kumar (Dean UIE) /His representative					Member	
12	Dr. Seema Garg (Dean UIL, UICAIIS)/ Her representative					Member	



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13	Dr Ramandeep Kaur Chahal (Dean UICM)/ Her representative	Member	
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Following agenda items were discussed and approved as follow:

1. Discussed and approved various schemes, credits & Syllabus of physics for M.Sc. (Hons.) Physics 2 year (PG048) as per New Education Policy 2020 for the admissions of session 2023-2024 onwards.
2. Approved the Incorporation of vision, mission, Programme Educational Objects (PEOs), Programme Outcome (POs), Programme Specific Outcome (PSOs), & Course Outcomes (COs) in Scheme & syllabus of M.Sc.(Hons.) Physics 2 year (PG048).
3. Discussed & Approved various curriculum aspects on the basis of Feedback of stakeholders (Students/Alumni/Teachers/Employers) i.e. Incorporation of more elective/core courses on the basis of specialization oriented, technological advancements, practicability & employable skills.
4. Amendments in the course curriculum on the basis of suggestions by the experts regarding scheme and syllabus.



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Details of Proceedings of BoS Meeting & Changes approved as per the agenda are as follows:-

- Approved Scheme and syllabus of new courses of physics introduced in M.Sc.(Hons) Physics 2- year (PG048) (as per New Education Policy 2020)
- Approved new programme code, course codes for M.Sc (Hons.) Physics 2 Year (PG048).

New Courses introduced & approved in M.Sc Physics 2 year (PG048) programme					
S.No.	Programme Name /Code	Course Code	Course/ Subject Name	Remarks / Observations by Experts/Stakeholders/BoS members)	Action Taken
1.	M.Sc. Physics 2 year (PG048)	PHY551	Quantum Mechanics	As per NEP, In 2year Master programme, advanced major courses on Quantum Mechanics have been introduced, so that students acquire coherent knowledge of the subject. Introduction of some relevant content as per CSIR-NET point of view.	Incorporated in the curriculum. Implemented w.e.f Academic session 2023-2024
2.	M.Sc. Physics 2 year (PG048)	PHY553	Classical Mechanics	As per NEP, In 2 year Master programme, advanced major courses on classical mechanics have been introduced, so that students acquire coherent knowledge of the Lagrangian & Hamiltonian equations. Introduction of some relevant content as per CSIR-NET point of view.	
3.	M.Sc. Physics 2 year (PG048)	PHY555	Mathematical Physics	As per NEP, In 2year Master programme, advanced major courses on Mathematical Physics have been introduced, so that students acquire coherent knowledge of the various mathematical formulations. Introduction of some relevant content as per CSIR-NET point of view.	
4.	M.Sc. Physics 2 year (PG048)	PHY559	Computational Techniques	As per NEP, In 2year Master programme, major discipline specific elective courses on computational techniques have been introduced, so that students acquire coherent knowledge of the different advance techniques which will be fruitful for the calculation of their research data. Introduction of some relevant content as per CSIR-NET point of view.	



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5.	M.Sc. Physics 2 year (PG048)	PHY561	Reactor Physics	As per NEP, In 2year Master programme, major discipline specific elective courses on reactor physics have been introduced, so that students acquire coherent knowledge of the power reactors in india & world , their working, types, moderator used. Introduction of some relevant content as per CSIR-NET point of view.
6.	M.Sc. Physics 2 year (PG048)	PHY563	Science of Renewable Energy Sources	As per NEP, In 2year Master programme, major discipline specific elective courses on science of renewable energy sources have been introduced, so that students acquire coherent knowledge of the energy demand of world and india, understand the concept of solar, wind energy & their applications.
7.	M.Sc. Physics 2 year (PG048)	PHY557	Electronics	As per NEP, In 2year Master programme, Electronics as a minor course of 4 credit has been introduced, so that students acquire coherent knowledge of analog & digital electronics . Introduction of some relevant content as per CSIR-NET point of view.
8.	M.Sc. Physics 2 year (PG048)	EVS003	Natural Hazards & Disaster Management	As per NEP, In 2year Master programme, Natural Hazards & Disaster Management as a Value Added courses of 3 credit has been introduced, so that students make aware about natural hazards, risk assessment and disaster management.
9.	M.Sc. Physics 2 year (PG048)	PHY565	Electronics Lab	As per NEP, In 2 year Master programme, advanced major lab courses on electronics lab has been introduced, so that students acquire coherent knowledge of the subject. Experiments based on Electronic devices have been added in Electronic lab due to relevance with theory content as well as availability in virtual lab.
10.	M.Sc. Physics 2 year	PHY567	Computer Lab	As per NEP, In 2 year Master programme, advanced major lab courses of C++ in computer lab has been introduced so that



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	(PG048)			students can enhance their employability and research skill.	
11.	M.Sc. Physics 2 year (PG048)	PHY552	Electrodynamics	As per NEP, In 2 year Master programme, advanced major courses on electrodynamics have been introduced, so that students can explain various laws, concept related to electrostatics and magnetostatics. Introduction of some relevant content as per CSIR-NET point of view.	Incorporated in the curriculum. Implemented w.e.f Academic session 2023-2024
12.	M.Sc. Physics 2 year (PG048)	PHY554	Condensed Matter Physics	As per NEP, In 2 year Master programme, advanced major courses on condensed matter physics have been introduced, so that students acquire coherent knowledge of magnetic materials, existing defects in materials, lattice vibrations in crystal structure. Introduction of some relevant content as per CSIR-NET point of view.	
13.	M.Sc. Physics 2 year (PG048)	PHY556	Atomic & Molecular Spectroscopy	As per NEP, In 2 year Master programme, major discipline specific elective courses on atomic & spectroscopy has been introduced, so that students acquire coherent knowledge of the atomic and molecular spectra, application of IR, Raman, microwave electronic spectroscopy techniques. Introduction of some relevant content as per CSIR-NET point of view.	
14.	M.Sc. Physics 2 year (PG048)	PHY560	Statistical Mechanics	As per NEP, In 2 year Master programme, major discipline specific elective courses on statistical mechanics has been introduced, so that students establish the link between thermodynamics & statistics. Introduction of some relevant content as per CSIR-NET point of view.	
15.	M.Sc. Physics 2 year (PG048)	PHY562	Instrumentation and Experiment Design	As per NEP, In 2 year Master programme, major discipline specific elective courses on instrumentation and experiment design has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent	
					Incorporated in the curriculum. Implemented w.e.f Academic session 2023-



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				knowledge of the subject and acquire skill to prepare the advance instrumental designs.	2024
16.	M.Sc. Physics 2 year (PG048)	PHY564	Fabrication of electronic devices	As per NEP, In 2 year Master programme, major discipline specific elective courses on fabrication of electronic devices has been introduced, as per the aspect of specialization & employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to fabricate electronic devices.	
17.	M.Sc. Physics 2 year (PG048)	PHY558	Nuclear & Particle Physics	As per NEP, In 2 year Master programme, Nuclear & Particle Physics as a minor course of 4 credit has been introduced, so that students can acquire coherent knowledge of nuclear forces, nuclear model, origination of particles, their interactions theories. Introduction of some relevant content as per CSIR-NET point of view.	
18.	M.Sc. Physics 2 year (PG048)	CHM580	Structures, Spectra and Properties of Biomolecules	As per NEP, In 2 year Master programme multidisciplinary course on Structures, Spectra and Properties of Biomolecules has been proposed in 2nd semester to students to acquire the knowledge about structures, spectra and properties of biomolecules which further enhance their employability skill & industrial skill.	
19.	M.Sc. Physics 2 year (PG048)	PHY568	Condensed Matter Physics Lab	As per NEP, In 2 year Master programme, advanced major lab courses on condensed matter Physics lab has been introduced, so that students acquire coherent knowledge of the subject .Experiments based on solid state physics phenomenon have been added in condensed matter physics lab due to relevance with theory content as well as availability in virtual lab.	
20.	M.Sc. Physics 2 year	PHY570	Atomic & Molecular Spectroscopy Lab	As per NEP, In 2 year Master programme, advanced major lab courses on Atomic & Molecular Spectroscopy Lab has been introduced, so that students acquire	



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	(PG048)			coherent knowledge of the subject .Experiments based on different spectroscopic techniques of atoms & molecules have been added in atomic & molecular spectroscopy lab due to relevance with theory content as well as availability in virtual lab	
21.	M.Sc. Physics 2 year (PG048)	RM653	Basics of Research Methodology in Physical & Mathematical Sciences	As per NEP, In 2 year Master programme major courses have been introduced to develop research skills in students. Students can acquire coherent knowledge to formulate a research problem & prepare its design.	
22.	M.Sc. Physics 2 year (PG048)	PHY651	Nanotechnology	As per NEP, In 2 year Master programme, major discipline specific elective courses on nanotechnology has been introduced, as per the aspect of specialization, research, employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire different techniques to synthesize the nanoparticle and learn the advance characterization techniques.	
23.	M.Sc. Physics 2 year (PG048)	PHY653	Physics of Nanomaterials	As per NEP, In 2 year Master programme, major discipline specific elective courses on Physics of Nanomaterials has been introduced, as per the aspect of specialization, research, employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to know different classes of nanomaterials and study their applications in different fields.	
24.	M.Sc. Physics 2 year (PG048)	PHY655	Spintronics	As per NEP, In 2 year Master programme, major discipline specific elective courses on spintronics has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of spin based devices, quantum dots, etc.	
25.	M.Sc. Physics 2 year	PHY657	Theoretical aspects of Nuclear Structure Physics	As per NEP, In 2 year Master programme, major discipline specific elective courses on Theoretical aspects of Nuclear	



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	(PG048)			Structure Physics has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge about the nucleus, nuclear deformation and related orientation effects.	
26.	M.Sc. Physics 2 year (PG048)	PHY659	Plasma Physics	As per NEP, In 2 year Master programme, major discipline specific elective courses on Plasma Physics has been introduced, as per the aspect of specialization, employability & industrial skills. students can acquire coherent knowledge of propagation of electrostatic and electromagnetic waves in magnetized and non-magnetized plasmas	
27.	M.Sc. Physics 2 year (PG048)	PHY661	Radiation Physics	As per NEP, In 2 year Master programme, major discipline specific elective courses on Radiation Physics has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of radiation effects and its detection and can make use of the protection measures.	
28.	M.Sc. Physics 2 year (PG048)	PHY663	Introduction to NMR Spectroscopy	As per NEP, In 2 year Master programme, major discipline specific elective courses has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of different spectroscopic techniques of NMR, ESR, applications etc.	
29.	M.Sc. Physics 2 year (PG048)	PHY665	Fluid Dynamics	As per NEP, In 2 year Master programme, major discipline specific elective courses has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of fluid flow and their different techniques.	



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30.	M.Sc. Physics 2 year (PG048)	PHY667	Instrumental Methods of Analysis	As per NEP, In 2 year Master programme, Instrumental Methods of Analysis as a minor course of 2 credit has been introduced, as per the aspect of employability & industrial skills. Students can acquire coherent knowledge of different tools & techniques in the different areas of physics.
31.	M.Sc. Physics 2 year (PG048)	RM655	Publication & Research Ethics	As per NEP, In 2 year Master programme, Publication & Research Ethics as minor course of 2 credit has been introduced to enhance research skills of students. Students can acquire coherent knowledge of how to publish a research work, misconduct in research, plagiarism its preventative measures etc.
32.	M.Sc. Physics 2 year (PG048)	PHY669	Dissertation-I	As per NEP, In 2 year Master programme major courses on Dissertation-I has been introduced, to enhance research skills of students. Students can acquire coherent knowledge by doing extensive literature on a research area and frame research objectives.
33.	M.Sc. Physics 2 year (PG048)	PHY671	Seminar & Summer Training	As per NEP, In 2 year Master programme Seminar & Summer Training as a minor courses of 2 credit have been introduced to enhance employability & industrial skills of students.
34.	M.Sc. Physics 2 year (PG048)	RM654	Advances in Research Methodology in Physical and Mathematical Sciences	As per NEP, In 2 year Master programme major courses on Advances in Research Methodology in Physical and Mathematical Sciences have been introduced to enhance research skills of students. Students can acquire coherent knowledge of identification of research data & prepare its modeling and apply on its research problem.



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35.	M.Sc. Physics 2 year (PG048)	PHY652	Solar Cells and its Application	As per NEP, In 2 year Master programme major discipline specific elective courses on Solar Cells and its Application has been introduced as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of different types of solar cells and its applications in different fields.	
36.	M.Sc. Physics 2 year (PG048)	PHY654	Polymers & Liquid crystal	As per NEP, In 2 year Master programme, major discipline specific elective courses on Polymers & Liquid crystal has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to prepare different polymer based materials and liquid crystals materials and also able to study their applications in different industrial sectors.	
37.	M.Sc. Physics 2 year (PG048)	PHY656	Thin Film technology	As per NEP, In 2 year Master programme, major discipline specific elective courses on Thin Film technology has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to prepare thin films through different synthesis approaches and also able to learn how to use the synthesized film in different applications.	
38.	M.Sc. Physics 2 year (PG048)	PHY658	Non- linear fibre optics	As per NEP, In 2 year Master programme, major discipline specific elective courses on Non- linear fibre optics has been introduced, as per the aspect of specialization, employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to work with optical fibers.	
39.	M.Sc. Physics 2 year (PG048)	PHY660	Physics of low dimensional semiconductors	As per NEP, In 2 year Master programme, major discipline specific elective courses on Physics of low dimensional semiconductors has been introduced, as per the aspect of specialization,	



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				employability & industrial skills. Students can acquire coherent knowledge of the subject and acquire skill to work with quantum well and apply their applications in industry.	
40.	M.Sc. Physics 2 year (PG048)	PHY662	Geophysics	As per NEP, In 2year Master programme, major discipline specific elective courses on Geophysics has been introduced, as per the aspect of specialization & current need of society. Students can acquire coherent knowledge of the subject and acquire skill to work upon the major issue of climate resilience .	
41.	M.Sc. Physics 2 year (PG048)	PHY664	Non-Linear Dynamics	As per NEP, In 2year Master programme, major discipline specific elective courses on Non-Linear Dynamics has been introduced, as per the aspect of specialization. Students can acquire coherent knowledge of the subject and acquire skill to do linear stability analysis.	
42.	M.Sc. Physics 2 year (PG048)	PHY666	Introduction to Astrophysics	As per NEP, In 2year Master programme, major discipline specific elective courses on Introduction to Astrophysics has been introduced, as per the aspect of specialization, research, employability. Students can acquire coherent knowledge of the basics of astrophysics and develop the skill to answer unsolved mysteries of universe.	
43.	M.Sc. Physics 2 year (PG048)	PHY668	Dissertation -II	As per NEP, In 2 year Master programme major courses on Dissertation -II have been introduced to enhance research skills of students. Students can acquire coherent knowledge by analysing data & interpreting the results and preparing their dissertation.	
44.	M.Sc. Physics 2 year (PG048)	RM656	Scientific & Technical Writing	As per NEP, In 2 year Master programme minor courses of 2 credit on Scientific & Technical Writing has been introduced to enhance writing research skills of students.	



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3. Other Suggestions of External Experts (Not covered above):

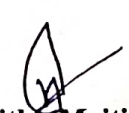
S. No.	Name of Expert	Designation/Address	Expert's suggestions	Action Taken
1	Dr. Nareshpal Singh Saini	Professor, Department of Physics, Guru Nanak Dev University, Amritsar, India Email: nssaini@yahoo.com , nssaini.phy@gndu.ac.in Mobile: +91-9417384692, Office: +91-183-2258802	In discipline specific pool of 2 nd year; add Non-linear Dynamics as specialization subject.	Non-linear Dynamics as specialization subject is added in the Discipline specific pool of 2 nd year.

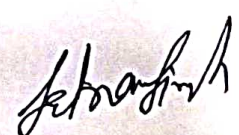
As suggested by the experts, all amendments have been incorporated in scheme and syllabus.

Meeting ended with the thanks by Dean Academics.

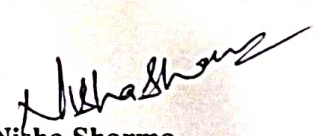

Dr. Honey Sharma
(Assistant Professor Physics)



Dr. Rampal
(Assistant Professor Physics)


Dr Mithu Maiti Jana
(Associate Professor Chemistry)
Coordinator, Physical Sciences


Dr. Satnam Singh
(Assistant Professor Physics)


Ms. Arwinder Kaur
(Assistant Professor Physics)


Dr. Nisha Sharma
(Associate Professor Chemistry)
Head, Physical Sciences


Dean of Institute
(UIS, SBBSU)

BOS Meeting for Discipline of Physics (9/3/2023)

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10:35 AM | rol-clip-qth

Honey Sharma is presenting

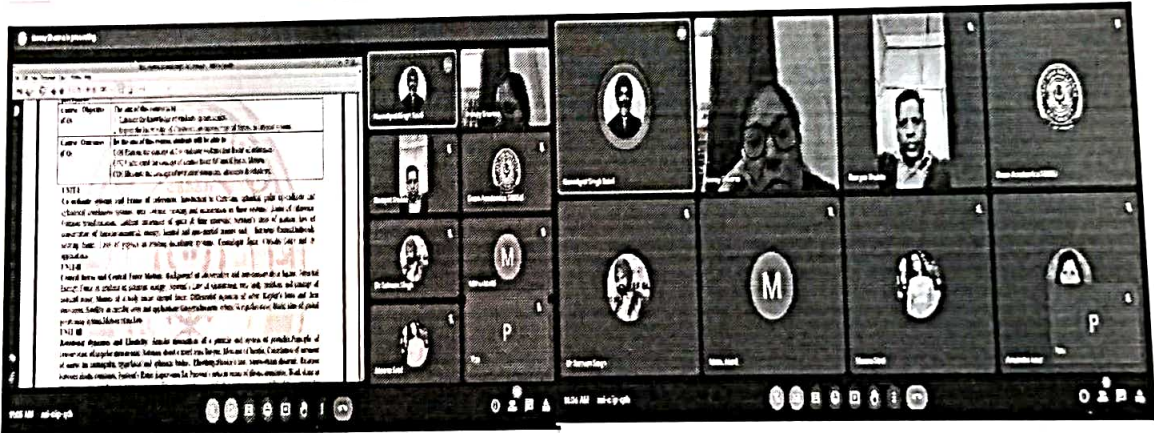
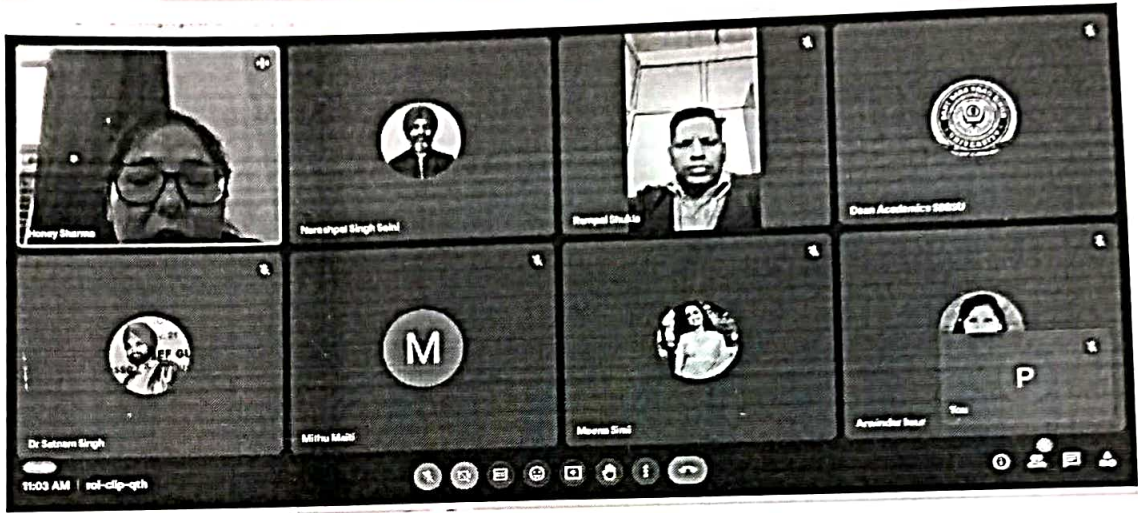
Sr	Level	Code	Course Name	Credits
12	Minor	PHY 556	Atomic & Molecular Spectroscopy	II
13	Minor	PHY 558	Nuclear & Particle Physics	II
14	Major(DSE)	PHY 560	Choose any one: a) Statistical Mechanics b) Instrumentation and Experimental Design c) Fabrication of electronic devices	II
		PHY 562		
		PHY 564		
15	MJC	PHY 566	Structures, Spectra and Properties of Biomolecules	II
16	Minor	PHY 568	Condensed Matter Physics Lab	II
17	Major	PHY 570	Spectroscopy Lab	II
18	Major(DSE)	PHY 651	Choose any one: a) Nanotechnology b) Physics of Nanomaterial	III
		PHY 653		

10:43 AM | rol-clip-qth

Honey Sharma is presenting

Sr	Level	Code	Course Name	Credits
25	Major	PHY 669	Research Ethics	III
			Dissertation I (Synopsis with Elaboration of Research Objectives)	III
26	Minor	PHY 671	Seminar & Industrial training	III
28	Major(DSE)	PHY 652	Choose any one: a) Solar cells and its application b) Polymers & Liquid crystal c) Thin films technology	IV
		PHY 654		
		PHY 656		
29	Major(DSE)	PHY 658	Choose any one: a) Physics of low dimensional semiconductors b) Non-linear fibre optics. c) Geophysics	IV
		PHY 660		
		PHY 662		
27	Major	PHY 664	Research Methodology-II (Discipline specific Advance Research Techniques)	IV
28	Minor	PHY 666		IV

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(University Established under Punjab Act No. 6 of 2013)
Vill. Khiala, P.O. Padhlana, Dist. Jalandhar, Punjab, INDIA

External Expert Review Performa For Board of Studies

Name of External Expert : Dr. Nareshpal Singh Saini
Discipline : Physics
Designation : Professor
Organization (Name & Address) : Department of Physics, GNDU, Amritsar

Contact No. : 9417384692

E-Mail ID : nssaini.phy@gndu.ac.in; nssaini@yahoo.com

Date of Visit/Meeting : 09-03-2023

Reviewer's Comments :-

- As per NEP-2020, syllabus formulation was correct
- * There should be no repetition of Name of Courses in any semester. Codes of courses should be different
 - * A course on nonlinear dynamics may also be introduced.
 - * Include all other suggestions provided at the time of meeting.

❖ Use extra sheet(s) if required.


Signature

(Prof. (Dr.) N. S. Saini)

Date. 13/03/2023


Coordinator/HOD's/Dean's


Dean Academics