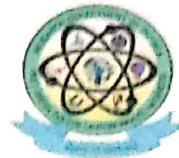




DEPARTMENT OF PHYSICS
HOLY CROSS COLLEGE (Autonomous), NAGERCOIL.
(Affiliated to Manonmaniam Sundaranar University, Tirunelveli.
Nationally Re-Accredited with A+ grade by NAAC (CGPA 3.35))
Kanyakumari District, Tamil Nadu, India.



Minutes of the Board of Studies meeting of the Department of Physics
held on 24.05.2023 at 10.00 am

Ref. No. PHY/ BOS / 2022-2023/XVII

Members:

Dr. C. Nirmala Louis	- Chairperson & Head of the Department
Dr. I. Reeta Mary	-University Nominee
Dr. D. Arul Dhas	- Subject Expert
Dr. K. U. Madhu	- Subject Expert
Er. Arul Jerald Prakash	- Industrialist
Dr. A. Darlin Mary	- Alumni
Dr. V. Shally	- Member
Dr. M. Priya Dharshini	- Member
Dr. A. Lesly Fathima	- Member
Dr. R. Krishna Priya	- Member
Dr. M. Abila Jeba Queen	- Member
Dr. S. Sonia	- Member
Dr. P. Aji Udhaya	- Member
Dr. Sr. S. Sebastiammal	- Member
Dr. S.J. Jenepha Mary	- Member
Dr. J. Jude Brillin	- Member
Miss. J.Jeffy	- Student Representative
Miss. J.Mary Asha	- Student Representative

Agenda

1. Prayer
2. Welcome by the Chairperson
3. Reading of the minutes of the previous meeting
4. Introduction of UG School
5. Revamping / Revision of curriculum for UG with PEOs, POs, PSOs and COs.
6. Revision of syllabus for UG Semester I and II
7. Ratification of curriculum structure 2020-23
8. Syllabus for Value Added Courses
9. Introduction of PG School
10. Revamping / Revision of curriculum for PG with PEOs, POs, PSOs and COs.
11. Revision of syllabus for PG Semester I and II
12. Classification of New Courses / Multidisciplinary / Industry 4.0
13. Classification of courses as Employability / Entrepreneurship / Skill Development
14. Classification of courses as Local / National / Regional / Global
15. Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics
16. Recommendation of books and journals for UG and PG
17. Suggestion for innovative teaching and evaluation techniques for UG and PG
18. Conduct of seminars / workshops in collaborations with Government Agents / Universities / NGOs.
19. New measures to be undertaken by the department
20. Feedback and action taken
21. Next meeting of BoS
22. Any other.

The Board of Studies meeting commenced with the prayer. The members of the board, the Chairperson, University Nominee, Subject experts, Industrialist, Alumnae, and faculty of the Department were present for the meeting.

Chairperson's Address

The Chairperson and Head of the Department, Dr. C. Nirmala Louis, welcomed the members and highlighted the agenda of this meeting. The following items in the Agenda were discussed by the members of the Board.

Item 01/BoS23.05/03: Reading of the minutes of the previous meeting held on 30.11.2021

Dr.S. Sonia read the minutes of the previous meeting after incorporating the modifications/ suggestions given by the Academic council which was approved by the board members.

Item 02/BoS23.05/04: Introduction of UG School

The board approved combining the department of Physics and Chemistry to establish the school of Physical Sciences after getting approval from Academic council and M.S. University.

Item 03/BOS 23.05/05: Revamping / Revision of curriculum for UG with PEOs, POs, PSOs and COs.

The BoS members approved the Programme Educational Objectives (PEOs), Programme Outcomes (POs), Programme Specific Outcome (PSOs) and the Course Outcomes (COs) of all the UG programme.

Programme Educational Objectives (PEOs)

PEOs	Upon completion of B.A/B.Sc. degree programme, the graduates will be able to	Mission addressed
PEO 1	apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.	M1& M2
PEO 2	inculcate practical knowledge for developing professional empowerment and entrepreneurship and societal services.	M2, M3, M4 & M5
PEO 3	pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.	M3, M4, M5 & M6

Programme Outcomes (POs)

POs	Upon completion of B.Sc. Degree Programme, the graduates will be able to:	Mapping with PEOs
PO1	obtain comprehensive knowledge and skills to pursue higher studies in the relevant field of science.	PEO1
PO2	create innovative ideas to enhance entrepreneurial skills for economic independence.	PEO2
PO3	reflect upon green initiatives and take responsible steps to build a sustainable environment.	PEO2
PO4	enhance leadership qualities, team spirit and communication skills to face challenging competitive examinations for a better developmental career.	PEO1 & PEO3
PO5	communicate effectively and collaborate successfully with peers to become competent professionals.	PEO2 & PEO3

PO6	absorb ethical, moral and social values in personal and social life leading to highly cultured and civilized personality	PEO2 & PEO3
PO7	participate in learning activities throughout life, through self-paced and self-directed learning to improve knowledge and skills.	PEO1 & PEO3

Programme Specific Outcome (PSOs)

PSOs	Upon completion of B.Sc. Physics Degree Programme, the graduates of Physics will be able to:	Mapping with POs
PSO - 1	understand the core theories and principles of physics which include mechanics, thermodynamics, electronics, material science etc.	PO1
PSO - 2	develop extensive comprehension of fundamental and diverse applications of Physics.	PO2 & PO3
PSO - 3	apply knowledge of principles, concepts in Physics and analyze their local, national and global impact. Apply the critical reasoning and computing skills to analyze and solve problems in physics.	PO4 & PO5
PSO - 4	analyze the observed experimental data and relate the results with theoretical expectations. Communicate appropriately and effectively, in a scientific context using present technology.	PO6
PSO - 5	develop entrepreneurial skills, empowered according to the professional requirement and become self-dependent. Understand the professional, ethical, legal, security, social issues and responsibilities.	PO5 & PO7

TANSCHS syllabus with prime focus on LOCF with CBCS is implemented. LOCF is an initiative to create positive improvement in the Higher Education which aims to equip students with knowledge, skills, values, attitudes, leadership readiness/ qualities and life-long learning.

The overall structure of the curriculum framed for B.Sc. Physics in 2023 was accepted by the board.

Course Structure for UG

Distribution of Hours and Credits

Curricular Courses:

Course	S I	S II	S III	S IV	S V	S VI	Total	
							H	C
Part-I Language	6 (3)	6 (3)	6 (3)	6 (3)			24	12
Part-II English	6 (3)	6 (3)	6 (3)	6 (3)			24	12
Part-III								
Core Course	5 (5)+	5 (5)+	5 (5)+	5 (5)+	6 (5)+	6(5) +	72	61

Core Lab Course	3 (3)	3 (3)	3 (3)	3 (3)	5 (4)+ 4 (3)	5(3) + 5(3) 4(2)		
Core Project					5 (4)			
Elective /Discipline Specific Elective Courses	4 (3)+ 2 (2)	4 (3)+ 2 (2)	4 (3)+ 2 (2)	4 (3)+ 2 (2)	4 (3)+ 4 (3)	4 (3)+ 4 (3)	40	32
Part-IV								
Non-major Elective	2 (2)	2 (2)	-	-	-	-	4	4
Skill Enhancement Course	-	2(2)	1(1) 2(2)	1(1) 2(2)	-		8	8
Foundation Course	2(2)	-	-	-	-	-	2	2
Value Education	-	-	-	-	2(2)	-	2	2
Summer Internship /Industrial Training					(2)			2
Environmental Studies	-	-	1	1 (2)	-	-	2	2
Extension Activity	-	-	-	-	-	(1)	-	1
Professional Competency Skill						2(2)	2	2
Total	30 (23)	30 (23)	30 (22)	30 (24)	30 (26)	30 (22)	18 0	140

Total number of Hours = 180

Co-curricular Courses

Course	S I	S II	S III	S IV	S V	S VI	tal
LST (Life Skill Training)	-	(1)	-	(1)			2
SDT (Certificate Course)	(1)						1
Field Project		(1)					1
Specific Value-added Course	(1)		(1)				2
Generic Value-added Course				(1)		(1)	2
MOOC		(1)		(1)		(1)	3
Student Training (ST): Clubs & Committees / NSS				(1)			1
Community Engagement Activity - RUN				(1)			1
Human Rights Education					(1)		1
Gender Equity Studies						(1)	1
Total							15

Total number of Compulsory Credits = Academic credits + Non-academic credits: 140 + 15
 Courses offered for the students of B.Sc. Physics are given in the following structure.

Academic Courses:

Semester I

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU231TL1	Language: Tamil French	3	6
	FU231FL1			
Part II	EU231EL1	English	3	6
Part III	PU231CC1	Core Course I: Properties of Matter and Acoustics	5	5
	PU231CP1	Core Lab Course I: General Physics Lab I	3	3
	PU231EC1	Elective Course I: Allied Physics for Mathematics – I	3	4
	PU231EP1	Elective Lab Course I: Allied Physics Practical for Mathematics – I	2	2
Part IV	PU231NM1	Non-Major Elective NME-I: Physics for Everyday Life	2	2
	PU231FC1	Foundation Course: Introductory Physics	2	2
Total			23	30

Semester II

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU232TL1	Language: Tamil French	3	6
	FU232FL1			
Part II	EU232EL1	English	3	6
Part III	PU232CC1	Core Course II: Heat, Thermodynamics and Statistical Physics	5	5
	PU232CP1	Core Lab Course II: General Physics Lab II	3	3
	PU232EC1	Elective Course II: Allied Physics for Mathematics – II	3	4
	PU232EP1	Elective Lab Course I: Allied Physics Practical for Mathematics – II	2	2

Part IV	PU232NMI	Non-major Elective NME-II: Physics of Music	2	2
	PU232SE1	Skill Enhancement Course SEC I: Digital Photography	2	2
Total			23	30

Semester III

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU233TL1 FU233FL1	Language: Tamil French	3	6
	Part II	EU233EL1	English	3
Part III	PU233CC1	Core Course III: General Mechanics and Classical Mechanics	5	5
	PU233CP1	Core Lab Course III: General Physics Lab III	3	3
	PU233EC1	Elective Course III: Allied Physics for Chemistry - I	3	4
	PU233EP1	Elective Lab Course III: Allied Physics Practical for Chemistry – I	2	2
Part IV	PU233SE1	Skill Enhancement Course SEC II (Entrepreneurial Skills): Home Electrical Installation	1	1
	PU233SE2	Skill Enhancement Course SEC III: Electrical and Electronic Circuits	2	2
	UG234EV1	Environmental Studies	-	1
Total			22	30

Semester IV

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU234TL1 FU234FL1	Language: Tamil French	3	6
	Part II	EU234EL1	English	3
Part III	PU234CC1	Core Course IV: Optics and Spectroscopy	5	5
	PU234CP1	Core Lab Course IV: General Physics Lab IV	3	3
	PU234EC1	Elective Course IV: Allied Physics for Chemistry – II	3	4

	PU234EP1	Elective Lab Course IV: Allied Physics Practical for Chemistry - II	2	2
Part IV	PU234SE1	Skill Enhancement Course SEC IV: Programming with C++	1	1
	PU234SE2	Skill Enhancement Course SEC V: C++ Programming Lab	2	2
	UG234EV1	Environmental Studies	2	1
Total			24	30

Semester V

Course	Course Code	Title of the Course	Credits	Hours/Week
Part III	PU235CC1	Core Course V: Atomic Physics and Lasers	5	6
	PU235CC2	Core Course VI: Relativity and Quantum Mechanics	4	5
	PU235CP1	Core Lab Course V: General Physics Lab V	3	4
	PU235PW1	Core Project	4	5
	PU235DE1	Discipline Specific Elective I: a) Energy Physics	3	4
	PU235DE2	Discipline Specific Elective I: b) Mathematical Physics		
	PU235DE3	Discipline Specific Elective I: c) Medical Instrumentation		
	PU235DE4	Discipline Specific Elective II: a) Material Science	3	4
	PU235DE5	Discipline Specific Elective II: b) Numerical Methods and C Programming		
	PU235DE6	Discipline Specific Elective II: Lasers and Fiber Optics		
Part IV	PU235VE1	Value Education	2	2
	PU235SI1 / PU235IT1	Summer Internship/Industrial Training	2	
Total			26	30

Semester VI

Course	Course Code	Title of the Course	Credits	Hours/Week
Part III	PU236CC1	Core Course VII: Nuclear and Particle Physics	5	6

	PU236CC2	Core Course VIII: Solid State Physics	3	5
	PU236CC3	Core Course IX: Digital Electronics and Microprocessor 8085	3	5
	PU236CP1	Core Lab Course VI: General Physics Lab VI	2	4
	PU236DE1	Discipline Specific Elective III: a) Nano Science	3	4
	PU236DE2	Discipline Specific Elective III: b) Digital Photography		
	PU236DE3	Discipline Specific Elective III: c) Advanced Mathematical Physics		
	PU236DE4	Discipline Specific Elective IV: a) Communication Systems	3	4
	PU236DE5	Discipline Specific Elective IV: b) Geo Physics		
	PU236DE6	Discipline Specific Elective IV: c) Bio Physics		
Part IV	PU236EA1	Extension Activity	1	-
	PU236PS1	Professional Competency Skill	2	2
Total			22	30
TOTAL			140	180

Co-curricular Courses

Part	Semester	Code	Title of the Course	Credit
Part V	I & II	UG232LC1	Life Skill Training I: Catechism	1
		UG232LM1	Life Skill Training I: Moral	
	I	UG231C01 – UG231C--	Skill Development Training (SDT) - Certificate Course	1
	II, IV & VI	-	MOOC	1+1+1
	III & IV	UG234LC1	Life Skill Training II: Catechism	1
		UG234LM1	Life Skill Training II: Moral	
	II	PU232FP1	Field Project	1
	I & III	PU231V01- PU231V--/ PU233V01 – PU233V--	Specific Value-added Course	1+1
	IV & VI	UG234V01- UG234V--/ UG236V01- UG236V--	Generic Value-added Course	1 +1
	I – IV	UG234ST1	Student Training Activity – Clubs & Committees / NSS	1
	IV	UG234CE1	Community Engagement Activity – RUN	1
	V	UG235HR1	Human Rights Education	1
	VI	UG236GS1	Gender Equity Studies	1
		Total	15	

Item 04/BOS 23.05/06: Revision of syllabus for UG Semester I and II

The BoS members approved the Courses in Semester I and II for B.Sc. Physics with following suggestions and modifications.

- Course outcomes can be modified based on practical implementation and real-life applications.
- The Core, Elective and Allied courses should be of 80% theory and 20% problems while Non-Major Electives can have 100% theory.
- Practical Exam will be conducted in every semester.
- Part V exams can be conducted internally.

Item 05/BOS 23.05/07: Ratification of Curriculum Structure (2020-23)

The Ratification in 2020-23 structure for UG and PG programmes are as follows.

- Internship is introduced in semester IV / V of B.Sc. Physics for 25 days
- The BOS members accepted the Specific Value-added Courses (SVC) offered in Semesters II, IV and VI offered by the department with the following modifications and suggestions.
- Web design syllabus can be updated incorporating new trends.
- A final report can be submitted instead of examinations.
- Group project in III semester of M.Sc. Physics is changed to Individual projects.
- The period of Internship for M.Sc. Physics is minimum 25 days in semester II.

Item 06/BOS 23.05/08: Syllabus for Value Added Courses

The BOS members accepted the Specific Value-added Courses (SVC) offered in Semesters II, IV and VI offered by the department with the following modifications and suggestions.

- Web design syllabus can be updated incorporating new trends.
- No exams needed for value added courses instead a final report can be submitted.

The BOS members accepted the Specific Value-added Course (SVC) to be offered in Semester II of UG programme by the department.

S.No.	Subject Code	Title of the Course	Hours
1	PU231V01	Photoshop	30

Item 07/BOS 23.05/09: Introduction of PG School

The board approved combining the PG departments of Physics and Chemistry to establish the PG school of Physical Sciences after getting approval from Academic council and M.S. University.

Item 08/BOS 23.05/10: Revamping / Revision of curriculum for PG with PEOs, POs, PSOs and COs.

The BoS members approved the Programme Educational Objectives (PEOs), Programme Outcomes (POs), Programme Specific Outcome (PSOs) and the Course Outcomes (COs) of all the UG programme.

PG PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Upon completion of M. Sc. Physics Programme, the graduates will be able to:	Mapping with
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		Mission
PEO1	apply scientific and computational technology to solve social and ecological issues and pursue research.	M1, M2
PEO2	continue to learn and advance their career in industry both in private and public sectors.	M4 & M5
PEO3	develop leadership, teamwork, and professional abilities to become a more cultured and civilized person and to tackle the challenges in serving the country.	M2, M5 & M6

PG PROGRAMME OUTCOMES (POs)

POs	Upon completion of M.Sc. Physics Degree Programme, the graduates will be able to:	Mapping with PEOs
PO1	apply their knowledge, analyze complex problems, think independently, formulate and perform quality research.	PEO1 & PEO2
PO2	carry out internship programmes and research projects to develop scientific and innovative ideas through effective communication.	PEO1, PEO2 & PEO3
PO3	develop a multidisciplinary perspective and contribute to the knowledge capital of the globe.	PEO2
PO4	develop innovative initiatives to sustain ecofriendly environment	PEO1, PEO2
PO5	through active career, team work and using managerial skills guide people to the right destination in a smooth and efficient way.	PEO2
PO6	employ appropriate analysis tools and ICT in a range of learning scenarios, demonstrating the capacity to find, assess, and apply relevant information sources.	PEO1, PEO2 & PEO3
PO7	learn independently for lifelong executing professional, social and ethical responsibilities leading to sustainable development.	PEO3

PROGRAMME SPECIFIC OUTCOMES (PSOS)

PSO	Upon completion of M.Sc. Physics Degree Programme, the graduates of Physics will be able to:	Mapping with POs
PSO - 1	have well-defined knowledge on theoretical concepts and experimental methods of advanced physics.	PO1 & PO2
PSO - 2	acquire skills in performing advanced physics experiments and projects using modern technology and numerical simulations.	PO3, PO4 & PO5

PSO - 3	develop and communicate analytical skills ranging from nuclear to cosmology to progress in the expanding frontiers of physics.	PO6
PSO - 4	apply and interpret physics principles in various physical observations. Demonstrate proficiency in analyzing, applying and solving Scientific problems.	PO1, PO7
PSO - 5	use the techniques, skills, and modern technology necessary to communicate effectively with professional and ethical responsibility. Understand the impact of Physics in a global, economic, environmental, and societal context.	PO7

TANSCHÉ syllabus with prime focus on LOCF with CBCS is implemented. LOCF is an initiative to create positive improvement in Higher Education which aims to equip students with knowledge, skills, values, attitudes, leadership readiness/ qualities and life-long learning.

Curricular Courses:

Course	Sem.I	Sem.II	Sem.III	Sem.IV	Total	
					Hours	Credits
Core- Theory	7 (5) +	6 (5)+	6 (5) +	6 (5) +	85	63
	6 (5) +	6 (5)+	6 (5) +	6 (5) +		
	6 (4)		6 (5)			
Core Practical	6 (3)	6 (4)	6 (4)	6 (3)		
Elective Course	5 (3)	4 (3)	3(3)		16	12
		4 (3)				
Core Project				8 (7)	8	7
Skill Enhancement Course		4 (2)	3 (2)	4 (2)	11	6
Internship/ Industrial Activity			(2)		-	2
Extension Activity				(1)	-	1
Total	30 (20)	30 (22)	30 (26)	30 (23)	120	91

Co-curricular Courses

Course	SEMESTER				Total
	I	II	III	IV	Credits
Life Skill Training –I	-	(1)	-	-	1
Life Skill Training –II	-	-	-	(1)	1
Field Project	(1)		-		1
Specific Value-Added Courses	(1)		(1)		2
Generic Value-Added Courses		(1)		(1)	2
MOOC		(1)		(1)	2
Community Engagement Activity (UBA)		(1)			1

Total Number of Hours = 120

Total Number of Credits = 91 + 10

The overall structure of the curriculum framed in 2023 was accepted by the board with the following modifications.

- ✓ The elective courses General Relativity and Cosmology, Plasma Physics from Semester I were moved to Semester II, while Crystal Growth and Thin Films, Material Science were added to Semester I.

Courses offered for the students of M.Sc. Physics are given in the following structure.

Academic Courses:

SEMESTER I

Course Code	Title of the Course	Credits	Hours
PP231CC1	Core Course I: Mathematical Physics	5	7
PP231CC2	Core Course II: Classical Mechanics and Relativity	5	6
PP231CC3	Core Course III: Linear and Digital ICs and Applications	4	6
PP231CP1	Core Lab Course I – Advanced Physics Lab I	3	6
PP231EC1	Elective Course I: a) Energy Physics	3	5
PP231EC2	Elective Course I:		

	b) Crystal Growth and Thin Films		
PP231EC3	Elective Course I: c) Material Science		
Total		20	30

SEMESTER II

Course Code	Title of the Course	Credits	Hours
PP232CC1	Core Course IV: Statistical Mechanics	5	6
PP232CC2	Core Course V: Quantum Mechanics – I	5	6
PP232CP1	Core Lab Course II – Advanced Physics Lab II	4	6
PP232EC1	Elective Course II: a) Advanced Optics	3	4
PP232EC2	Elective Course II: b) Non-Linear Dynamics		
PP232EC3	Elective Course II: c) Quantum Field Theory		
PP232EC4	Elective Course III: a) Medical Physics	3	4
PP232EC5	Elective Course III: b) Advanced Spectroscopy		
PP232EC6	Elective Course III: c) Characterization of Materials		
PP232SE1	Skill Enhancement Course I - NME I Solar Energy Utilization	2	4
Total		22	30

SEMESTER III

Course Code	Title of the Course	Credits	Hours
PP233CC1	Core Course VI: Quantum Mechanics – II	5	6
PP233CC2	Core Course VII: Electro Magnet Theory	5	6
PP233CC3	Core Course VIII: Nuclear and Particle Physics	5	6
PP233CP3	Core Lab Course III : Numerical Methods and Computer Programming C++	4	6
PP233EC1	Elective Course IV: a) Physics of Nano Science and Technology	3	3
PP233EC2	Elective Course IV: b) Communication Electronics		
PP233EC3	Elective Course IV: c) Advanced Mathematical Physics		

PP233SE1	Skill Enhancement Course II - NME II Sewage and Waste Water Treatment and Reuse	2	3
PP233IS1	Internship/ Industrial Activity	2	-
Total		26	30

SEMESTER IV

Course Code	Title of the Course	Credits	Hours
PP234CC1	Core Course IX: Spectroscopy	5	6
PP234CC2	Core Course X: Numerical Methods and Computer Programming	5	6
PP234CP4	Core Lab Course IV: Microprocessor and Microcontroller	3	6
PP234PW1	Core Project	7	8
PP234SE1	Skill Enhancement Course III – Solid Waste Management	2	4
PP234EA1	Extension Activity	1	-
Total		23	30

Item 09/BOS 23.05/11: Revision of syllabus for PG Semester I and II

The BoS members approved the Courses in Semester I and II for M.Sc. Physics with following suggestions and modifications.

- Communication Electronics course can be made skill oriented by including more applications.
- Practical Examination will be held in every semester.
- M.Sc. Physics students will be doing Individual projects in semester III.
- The period of Internship for M.Sc. Physics will be 25 days.
- Internships can be organised in collaboration with ISRO, Mahendragiri, the Indian Institute of Geomagnetism in Tirunelveli, the Kudankulam Nuclear Power Plant, Indian Rare Earth Limited in Manavalakurichi, and other organisations.

Item 10/BOS 23.05/12: Classification of New Courses / Multidisciplinary / Industry 4.0

UG Courses

Sl.No	Sem ester	Course Code	Course Title	New courses	Multidisciplinary courses	Industry 4.0
1.	I	PU231CC1	Core Course I: Properties of Matter and Sound	✓		
2.	I	PU231CP1	Core Lab Course: General Physics Lab I	✓		
3.	I	PU231EC1	Generic Elective I: Allied Physics for Mathematics - I	✓		
4.	I	PU231EP1	Allied Physics Practical for Mathematics - I			
5.	I	PU231NM1	Skill Enhancement Course SEC-I Non-Major Elective (NME):Physics for Everyday Life	✓	✓	
6.	I	PU231FC1	Skill Enhancement - (Foundation Course) – Introductory Physics	✓		
7.	II	PU232CC1	Core Course II: Heat, Thermodynamics and Statistical Physics	✓		
8.	II	PU232CP1	Core Course Lab II: General Physics Lab II	✓		
9.	II	PU232EC1	Generic Elective II: Allied Physics for Mathematics - II	✓		
10.	II	PU232EP1	Allied Physics Practical for Mathematics - II			
11.	II	PU232NM1	Skill Enhancement Course SEC-II Non Major Elective (NME):Physics of Music	✓	✓	✓
12.	II	PU232SE1	Skill Enhancement Course SEC-III:Digital Photography	✓	✓	✓

PG Courses

Sl. No	Semester	Course Code	Title of the Course	New courses	Multidisciplinary courses	Industry 4.0
1.	I	PP231CC1	Core Course I: Mathematical Physics	✓		
2.	I	PP231CC2	Core Course II: Classical Mechanics and Relativity	✓		
3.	I	PP231CC3	Core Course III: Linear and Digital ICs and Applications	✓		✓
4.	I	PP231EC1	Elective I: a) Energy Physics	✓	✓	
		PP231EC2	b) Crystal Growth and Thin Films	✓		
		PP231EC3	c) Material Science	✓		
5.	I	PP231CP1	Core Practical I – Advanced Physics Lab I	✓		
6.	II	PP232CC1	Core Course IV: Statistical Mechanics	✓		
7.	II	PP232CC2	Core Course V: Quantum Mechanics - I	✓		
8.	II	PP232EC1	Elective II: a) Advanced Optics	✓		✓
		PP232EC2	b) Non-Linear Dynamics	✓		✓
		PP232EC3	c) Quantum Field Theory	✓		
9.	II	PP232EC4	Elective III: a) Medical Physics	✓	✓	
		PP232EC5	b) Advanced Spectroscopy	✓		✓

		PP232EC6	c) Characterization of Materials	✓		✓
10.	II	PP232CP2	Core Practical II – Advanced Physics Lab II	✓		
11.	II	PP232SE1	Skill Enhancement Course I – NME I – Solar Energy Utilization	✓		

Item 11/BOS 23.05/13: Classification of Courses as Skill Development/ Employability/ Entrepreneurship

The members of the Board classified the UG courses in the new structure based on Skill Development/ Employability/ Entrepreneurship

UG Courses

Sl .No	Sem ester	Course Code	Course Title	Skill Development	Employability	Entrepreneurship
1.	I	PU231CC1	Core Course I: Properties of Matter and Sound	✓		✓
2.	I	PU231CP1	Core Lab Course: General Physics Lab I	✓		✓
3.	I	PU231EC1	Generic Elective I: Allied Physics for Mathematics - I	✓	✓	
4.	I	PU231EP1	Allied Physics Practical for Mathematics - I	✓		✓
5.	I	PU231NM1	Skill Enhancement Course SEC-I Non Major Elective (NME): Physics for Everyday Life			✓
6.	I	PU231FC1	Skill Enhancement - (Foundation Course) – Introductory Physics	✓	✓	
7.	II	PU232CC1	Core Course II: Heat, Thermodynamics and Statistical Physics	✓		✓
8.	II	PU232CP1	Core Course Lab II: General Physics Lab II	✓		✓
9.	II	PU232EC1	Generic Elective II: Allied Physics for Mathematics - II	✓		✓

10.	II	PU232EP1	Allied Physics Practical for Mathematics - II	✓		✓
11.	II	PU232NM1	Skill Enhancement Course SEC-II Non Major Elective (NME):Physics of Music	✓		✓
12.	II	PU232SE1	Skill Enhancement Course SEC-III:Digital Photography	✓		✓

PG Courses

Sl. No	Sem ester	Course Code	Course Title	Skill Development	Employ ability	Entrepreneurship
1.	I	PP231CC1	Core Course I: Mathematical Physics	✓		✓
2.	I	PP231CC2	Core Course II: Classical Mechanics and Relativity	✓		✓
3.	I	PP231CC3	Core Course III:Linear and Digital ICs and Applications	✓		
4.	I	PP231EC1	Elective I: a) Energy Physics	✓		
		PP231EC2	b) Crystal Growth and Thin Films	✓		✓
		PP231EC3	c) Material Science	✓		
5.	I	PP231CP1	Core Practical I – Advanced Physics Lab I	✓		
6.	II	PP232CC1	Core Course IV: Statistical Mechanics	✓	✓	
7.	II	PP232CC2	Core Course V: Quantum Mechanics - I	✓		✓
8.	II	PP232EC1	Elective II: a) Advanced Optics	✓		
		PP232EC2	b) Non-Linear Dynamics	✓		
		PP232EC3	c) Quantum Field Theory	✓		
9.	II	PP232EC4	Elective III: a) Medical Physics	✓	✓	

		PP232EC5	b) Advanced Spectroscopy	✓		✓
		PP232EC6	c) Characterization of Materials	✓		
10.	II	PP232CP2	Core Practical II – Advanced Physics Lab II	✓		✓
11.	II	PP232SE1	Skill Enhancement Course I – NME I – Solar Energy Utilization	✓		

Item 12/BOS 23.05/14: Classification of the courses as local/ national/regional/ global relevance

The members of the Board classified the UG courses in the new structure based on local/ national/ global relevance.

UG Courses

Sl.No	Sem ester	Course Code	Course Title	Local	National	Global
1.	I	PU231CC1	Core Course I: Properties of Matter and Sound			✓
2.	I	PU231CP1	Core Lab Course: General Physics Lab I		✓	
3.	I	PU231EC1	Generic Elective I: Allied Physics for Mathematics - I	✓		
4.	I	PU231EP1	Allied Physics Practical for Mathematics - I		✓	
5.	I	PU231NM1	Skill Enhancement Course SEC-I Non-Major Elective (NME): Physics for Everyday Life	✓		
6.	I	PU231FC1	Skill Enhancement -(Foundation Course) – Introductory Physics	✓		
7.	II	PU232CC1	Core Course II: Heat, Thermodynamics and Statistical Physics		✓	
8.	II	PU232CP1	Core Course Lab II: General Physics Lab II		✓	
9.	II	PU232EC1	Generic Elective II: Allied Physics for Mathematics - II		✓	
10.	II	PU232EP1	Allied Physics Practical for Mathematics - II		✓	
11.	II	PU232NM1	Skill Enhancement Course SEC-II Non	✓		

			Major Elective (NME): Physics of Music			
12.	II	PU232SE1	Skill Enhancement Course SEC-III: Digital Photography	✓		

PG Courses

Sl. No	Semester	Course Code	Title of the Course	Local	Regional	National	Global
1.	I	PP231CC1	Core Course I: Mathematical Physics				✓
2.	I	PP231CC2	Core Course II: Classical Mechanics and Relativity		✓		
3.	I	PP231CC3	Core Course III: Linear and Digital ICs and Applications				✓
4.	I	PP231EC1	Elective I: a) Energy Physics				✓
		PP231EC2	b) Crystal Growth and Thin Films				✓
		PP231EC3	c) Material Science				✓
5.	I	PP231CP1	Core Practical I – Advanced Physics Lab I				✓
6.	II	PP232CC1	Core Course IV: Statistical Mechanics				✓
7.	II	PP232CC2	Core Course V: Quantum Mechanics - I				✓
8.	II	PP232EC1	Elective II: a) Advanced Optics				✓
		PP232EC2	b) Non-Linear Dynamics		✓		
		PP232EC3	c) Quantum Field Theory				✓

9.	II	PP232EC4	Elective III: a) Medical Physics				✓
		PP232EC5	b) Advanced Spectroscopy				✓
		PP232EC6	c) Characterization of Materials			✓	
10.	II	PP232CP2	Core Practical II – Advanced Physics Lab II				✓
11.	II	PP232SE1	Skill Enhancement Course I – NME I – Solar Energy Utilization	✓			

Item 13/BOS 23.05/15: Classification of Courses as Cross-cutting issues

UG Courses

Sl.No	Sem ester	Course Code	Course Title	Environment and Sustainability
1.	I	PU231CC1	Core Course I: Properties of Matter and Sound	
2.	I	PU231CP1	Core Lab Course: General Physics Lab I	
3.	I	PU231EC1	Generic Elective I: Allied Physics for Mathematics - I	
4.	I	PU231EP1	Allied Physics Practical for Mathematics - I	
5.	I	PU231NM1	Skill Enhancement Course SEC-I Non Major Elective (NME): Physics for Everyday Life	✓
6.	I	PU231FC1	Skill Enhancement - (Foundation Course) – Introductory Physics	
7.	II	PU232CC1	Core Course II: Heat, Thermodynamics and Statistical Physics	
8.	II	PU232CP1	Core Course Lab II: General Physics Lab II	
9.	II	PU232EC1	Generic Elective II: Allied Physics for Mathematics - II	

10.	II	PU232EP1	Allied Physics Practical for Mathematics - II	
11.	II	PU232NM1	Skill Enhancement Course SEC-II Non Major Elective (NME): Physics of Music	
12.	II	PU232SE1	Skill Enhancement Course SEC-III: Digital Photography	

PG Courses

SI. No	Semester	Course Code	Title of the Course	Environment and Sustainability
1.	I	PP231CC1	Core Course I: Mathematical Physics	
2.	I	PP231CC2	Core Course II: Classical Mechanics and Relativity	
3.	I	PP231CC3	Core Course III: Linear and Digital ICs and Applications	
4.	I	PP231EC1	Elective I: a) Energy Physics	✓
		PP231EC2	b) Crystal Growth and Thin Films	
		PP231EC3	c) Material Science	
5.	I	PP231CP1	Core Practical I – Advanced Physics Lab I	
6.	II	PP232CC1	Core Course IV: Statistical Mechanics	
7.	II	PP232CC2	Core Course V: Quantum Mechanics - I	

8.	II	PP232EC1	Elective II: a) Advanced Optics	
		PP232EC2	b) Non-Linear Dynamics	
		PP232EC3	c) Quantum Field Theory	
9.	II	PP232EC4	Elective III: b) Medical Physics	
		PP232EC5	b) Advanced Spectroscopy	
		PP232EC6	c) Characterization of Materials	
10.	II	PP232CP2	Core Practical II – Advanced Physics Lab II	
11.	II	PP232SE1	Skill Enhancement Course I – NME I – Solar Energy Utilization	✓

Item 14/BOS 23.05/16: Recommendation of books and journals for UG and PG

Members suggested subscribing to online libraries, where many books and journals are available.

The board also suggested the following books

- Malvino A.P (2009). *Electronic Principles with simulation CD*. New York:McGraw Hill.
- Boylestad Robert (2007). *Electronic Devices and Circuit Theory*. London:Pearson.
- S. Salivahanan, N. Suersh Kumar & A. Vallavaraj (2009). *Electronic Devices and Circuits*, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Item 15/BOS 23.05/17: Suggestion for innovative teaching and evaluation techniques for UG and PG

The BoS members suggested the following methodologies to enhance teaching, learning and evaluation.

- Innovative teaching through mobile applications and software to enhance teaching, learning and evaluation.
- Train the students to utilize online sources.

Item 16/BOS 23.05/18: Conduct of seminars / workshops in collaborations with Government Agents / Universities / NGOs.

- Workshops and seminars can be conducted in collaboration with MOUs and Foreign Universities.
- The papers submitted for Conference can be published in Scopus-indexed journals.

Item 17/BOS 23.05/19: New measures to be undertaken by the department

- Physics students clubs can be formed to enrich their curricular and co-curricular talents.
- Regular debates can be organized on current affairs and recent advances in Science and Technology through the clubs.
- Students can be motivated to join registered clubs like Ham Radio Club, Indian Physics Association, etc.

Item 18/BOS 23.05/20: Feedback and action Taken

Department	Stakeholders	Feedback Received	Action Taken
Physics	Students	Reduce the syllabus in Non conventional energy sources, solid state physics, analog electronics, classical mechanics and astrophysics .	Syllabus was revised.
		Provide industry related project.	Industry related projects were given.
		Add more problems in Mathematical physics.	Syllabus was revised.
	Parents	Skill oriented courses can be included.	Skill related value added courses were offered. Skill related summer internship courses were offered.
Teachers	Instead of year wise practicals, semesterwise practicals are preferred.	The changes were executed.	
	Include some basic concepts in Quantum mechanics.	Included the basic concepts.	
Alumni	Physics problem oriented C++ programme can be more helpful.	The changes were executed.	
	Microprocessor syllabus is very difficult to study without knowing basics.	Included microprocessor basics in the syllabus	

Item 20/BOS 23.05/21: Next meeting of the BoS

- The board members suggested to have next BoS meeting in December 2023.

Feedback from Student Representatives

- Practical Exam will be conducted in every semester.
- Communication Electronics course can be made skill oriented by including more applications.
- Internships can be organised in collaboration with ISRO, Mahendragiri, the Indian Institute of Geomagnetism in Tirunelveli, the Kudankulam Nuclear Power Plant, Indian Rare Earth Limited in Manavalakurichi, and other organisations.



Mary Asha

S.No.	Name of the Members	Designation	Signature
1	Dr. C. Nirmala Louis Chairperson	Assistant Professor and Head of the Department	<i>P. C. Nirmala Louis</i>
2	Dr. I. Recta Mary University Nominee	Associate Professor	<i>IR</i>
3	Dr. D. Arul Dhas Subject Expert	Associate Professor	<i>A. D.</i>
4	Dr. K. U. Madhu Subject Expert	Assistant Professor	<i>K. U. Madhu</i>
5	Er. Arul Jerald Prakash Industrialist	Former Director Kerala Science and Technology Museum and Priyadarshini Planetarium, Trivandrum	<i>Arul Jerald Prakash</i>
6	Dr. A. Darlin Mary Alumni	Associate Professor	<i>A. Darlin Mary</i>
7	Dr. V. Shally Member	Assistant Professor	<i>V. Shally</i>
8	Dr. M. Priya Dharshini Member	Assistant Professor	<i>M. Priya Dharshini</i>
9	Dr. A. Lesly Fathima Member	Assistant Professor	<i>A. Lesly Fathima</i>
10	Dr. R. Krishna Priya Member	Assistant Professor	<i>R. Krishna Priya</i>
11	Dr. M. Abila Jeba Queen Member	Assistant Professor	<i>M. Abila Jeba Queen</i>
12	Dr. S. Sonia Member	Assistant Professor	<i>S. Sonia</i>
13	Dr. P. Aji Udhaya Member	Assistant Professor	<i>P. Aji Udhaya</i>
14	Dr. Sr. S. Sebastiammal Member	Assistant Professor	<i>S. Sebastiammal</i>
15	Dr. S.J. Jenepha Mary Member	Assistant Professor	<i>S. J. Jenepha Mary</i>
16	Dr. J. Jude Brillin Member	Assistant Professor	<i>J. Jude Brillin</i>