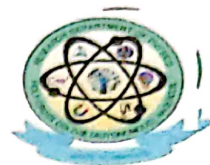




DEPARTMENT OF PHYSICS
HOLY CROSS COLLEGE (Autonomous), NAGERCOIL.
 (Affiliated to Manonmaniam Sundaranar University, Tirunelveli.
 Nationally Re-Accredited with A+ grade by NAAC (CGPA 3.35))
 Kanyakumari District, Tamil Nadu, India.



**Minutes of the Board of Studies meeting of the Department
 of Physics held on 30.11.2021 at 10.15am via Google Meet**

Ref. No. PHY/ BOS / 2021-2022/XVI

Members:

Dr. C. Nirmala Louis	- Chairperson & Head of the Department
Dr. B. Sundara Kannan	- University Nominee
Dr. I. Hubert Joe	- Subject Expert
Dr. G. Dheva Shantha Kumari	- Subject Expert
Er. Arul Jerald Prakash	- Industrialist
Ms. S. Anne Kavitha	- Alumni
Dr. V. Shally	- Member
Dr. A. Lesly Fathima	- Member
Dr. R. Krishna Priya	- Member
Dr. M. Abila Jeba Queen	- Member
Dr. S. Sonia	- Member
Ms. S. Virgin Jeba	- Member
Ms. P. Aji Udhaya	- Member
Dr. Sr. S. Sebastiammal	- Member
Ms. S.J. Jenepha Mary	- Member
Miss. M. Merisha	- Student Representative
Miss. J. Mirdhulla Pearly	- Student Representative

Agenda

1. Prayer
2. Welcome by the Chairperson
3. Reading of the minutes of the previous meeting
4. Revamping / Revision of Curriculum of UG
5. UG Syllabus for Semester V and VI
6. Classification of New Courses
7. Classification of courses as Employability / Entrepreneurship / Skill Development
8. Classification of courses as Local / National / Regional / Global
9. Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics
10. Recommendation of books and journals for UG and PG
11. Feedback and action taken
12. Next Meeting of BoS
13. Any other.

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

Chairperson's Address

The Chair Person 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/BoS21.11/03: Reading of the minutes of the previous meeting held on 29.01.2021

Dr. M. Abila Jeba Queen read the minutes of the previous meeting which was approved by the members after incorporating the modifications/ suggestions given by the Academic council.

Item 02/BoS 21.11/04: Revamping / Revision of Curriculum of UG

Based on the feedback received from the students, the overall structure of the curriculum framed in 2021 was accepted by the board with the following modifications.

- I. Practical examinations will be held only at the end of the even semester (VI semester).
- II. Credits for Major practical were reduced into 2 based on the norms "The credits should not exceed the hours allotted"

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

Course	Course code	Paper	Hours/week	Credit
Part III	PC2051	Major Core V - Classical and Statistical Mechanics	6	5
	PC2052	Major Core VI - Analog Electronics	6	5
	PC2053	Major Core VII - Solid State Physics	5	5
	PC20PR	Project	5	4
	PC20P3	Major Practical III - Physics Lab III	2	-
	PC20P4	Major Practical IV - Physics Lab IV	2	-
	PC20P5	Major Practical V - Physics Lab V	2	-
Part IV	AEC201	AEC(Ability Enhancement Compulsory course): Environmental Studies	2	2
Part V	FCV205	Foundation Course III - Human Rights Education(HRE)	-	1
Part III	PC2061	Major Core VIII - Relativity and Quantum Mechanics	6	5
	PC2062	Major Core IX - Digital and Communication Electronics	6	5
	PC2063	Major Core X - Nuclear Physics	5	5
		Major - Elective - III	5	4
	PC2064	(a) Mathematical Physics		
	PC2065	(b) Nanophysics		
	PC2066	(c) Astrophysics		
	PC20P3	Major Practical III - Physics Lab III	2	2
PC20P4	Major Practical IV - Physics Lab IV	2	2	
PC20P5	Major Practical V - Physics Lab V	2	2	
Part IV	SEP203	Skill Enhancement Course (*SEC) - Basic Electrical Circuits and Instruments	2	2
	FCV204	Foundation Course IV - Gender Equity studies	-	1
		TOTAL	60	20

Self-Learning Courses- Extra Credit Courses

Semester	Course Code	Title of the Course	Credits
III /V	PC20S1	Physics for Competitive Examination - I	2
IV/VI	PC20S2	Physics for Competitive Examination - II	2

Item 03/BoS 21.11/05: UG Syllabus for Semester V and VI

The BoS members approved the Papers in Semester V and VI for UG programme.

i. The following courses during the V and VI semesters are revised/ modified based on the feedback from the students & Alumni.

The course 'Elements of Modern Physics' is removed and the course 'Classical and Statistical Mechanics' is added in V semester. The modified core course 'Analog systems and Applications' is changed as "Analog Electronics" and shifted from IV semester to V semester with 6hrs/week. The newly added topics are: Multivibrators and Special Semiconductor Devices. In the V semester, 'Crystal diffraction techniques' are included in the 'Solid State Physics' course.

The following experiments were added in the practical in the V and VI semester.

- Non-Electronics
1. Diameter of a thin wire by diffraction method (using Laser)
 2. Wavelength determination of different sources.
 3. Characteristics of solar cell
 4. Study of power versus load characteristics of solar photovoltaic panel.

- Electronics
1. Op-amp inverting and non-inverting amplifier
 2. Op-amp Adder and Subtractor
 3. Op-amp

Differentiator and Integrator

Computer

1. Write a program to find the smallest and biggest element in an array.
2. Write a simple C++ program to find the path travelled by a body.

The project(Group) is introduced in V semester instead of one elective paper.

As per the suggestion of Board members, the experiments "Blinking LED and Domestic Sensors" are included in the SEC practical in VI semester.

The title of the course 'Digital systems and applications' is changed into 'Digital and Communication Electronics' in the VI semester with the addition of two chapters "Digital and Satellite Communications" and "Fibre Optic Communication". The title of the course 'Mathematical Methods of Physics' is changed into 'Mathematical Physics' in the VI semester with the inclusion of two chapters "Laplace transformation" and "Partial differential Equations". The few topics such as *Fourier analysis, Random Variables and Probability* were removed.

In the VI semester, the course 'Nanomaterials and its applications' is changed into 'Nanophysics' with the inclusion of "*Magneto Electronics*".

The topic *cosmic ray* is added in the "Nuclear Physics" course of VI semester.

The course 'Basic Astrophysics' is changed into 'Astrophysics' in VI semester and the chapter 'classification of stars' is included.

Item 04/ BoS 21.11/06: Classification of New courses'

New papers introduced for B.Sc Physics students in the new structural revision of curriculumare:

Semester	Course Code	Course Title
V	PC2051	Classical and Statistical Mechanics (Core)
	PC2052	Analogue Electronics (Core)
	PC2053	Solid State Physics (Core)
VI	PC2061	Relativity and Quantum Mechanics (Core)
	PC2062	Digital and Communication Electronics (Core)
	PC2063	Nuclear Physics (Core)
	PC2064	Mathematical Physics (Elective)
	PC2065	Nanophysics (Elective)
	PC2066	Astrophysics (Elective)
	PC20P3	Major Practical III-Physics Lab-III
	PC20P4	Major Practical IV-Physics Lab-IV
	PC20P5	Major Practical V-Physics Lab-V
SEP203	Skill Enhancement Course (SEC)-Basic Electrical Circuits and instruments	

Item 05/BoS21.11/07: Classification of courses as Employability / Entrepreneurship / Skill Development

Semester	Course Code	Course Title	Skill Development	Employability	Entrepreneurship
V	PC2051	Major Core V – Classical and Statistical Mechanics	✓		✓
V	PC2052	Major Core VI – Analog Electronics	✓		
V	PC2053	Major Core VII – Solid State Physics	✓		
V	PC20P	Project	✓	✓	
V	AEC20	AEC (Ability Enhancement Compulsory Course): Environmental	✓		

		Studies			
V	FCV20	Foundation Course III – Human Rights Education (HRE)	✓		
VI	PC2061	Major Core VIII – Relativity and Quantum Mechanics	✓		✓
VI	PC2062	Major Core IX – Digital and Communication Electronics	✓		✓
VI	PC2063	Major Core X - Nuclear Physics	✓		
VI	PC2064	Major – Elective - III (a) Mathematical Physics	✓		
VI	PC2065	Major – Elective - III (b) Nanophysics	✓		
VI	PC2066	Major – Elective - III (c) Astrophysics	✓		✓
VI	PC20P3	Major Practical III- Physics Lab III	✓		✓
VI	PC20P4	Major Practical III- Physics Lab III	✓		✓
VI	PC20P5	Major Practical III- Physics Lab III	✓		✓
VI	SEP203	Skill Enhancement Course (*SEC) – Basic Electrical Circuits and Instruments	✓	✓	

Item 06/BoS 21.11/08: Classification of courses as Local / National / Regional / Global

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

Course code	Course Title	Regional	National	Global
PC2051	Major Core V – Classical and Statistical Mechanics			✓
PC2052	Major Core VI – Analog Electronics			✓
PC2053	Major Core VII – Solid State Physics			✓
PC20PR	Project		✓	

AEC201	AEC (Ability Enhancement Compulsory Course): Environmental Studies	✓		
FCV205	Foundation Course III – Human Rights Education (HRE)		✓	
PC2061	Major Core VIII – Relativity and Quantum Mechanics		✓	
PC2062	Major Core IX – Digital and Communication Electronics			✓
PC2063	Major Core X - Nuclear Physics			✓
PC2064	Major – Elective - III (a) Mathematical Physics			✓
PC2065	Major – Elective - III (b) Nanophysics			✓
PC2066	Major – Elective - III (c) Astrophysics			✓
PC20P3	Major Practical III- Physics Lab III		✓	
PC20P4	Major Practical III- Physics Lab III		✓	
PC20P5	Major Practical III- Physics Lab III		✓	
SEP203	Skill Enhancement Course (*SEC) – Basic Electrical Circuits and Instruments	✓		
FCV204	Foundation Course IV – Gender Equity Studies	✓		

Item 07/BoS 21.11/9: Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics

Course Code	Title of the Course	Gender Equity	Environment and Sustainability	Human Values	Professional Ethics
PC2063	Major Core X - Nuclear Physics		✓		

PC2065	Major – Elective - III Nanophysics		✓		
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Item 08/BoS 21.11/10: Recommendation of books, journals for UG,PG and research programs

The members suggested the following books

1. Herbert Goldstein. (1980). *Classical Mechanics*, 2nd edition, Addison-wesley publications.
2. Aruldhas, G. (2008). *Classical Mechanics*, PHI learning publications.
3. Malvino Leach, (1992). *Digital Principles and Application*, Tata McGraw Hill, 4th Edition.
4. Gerd Keiser, (2003). *Optical communications Essentials*, Tata McGraw Hill, 5th Edition.

The members suggested to subscribe the following journals for the department:

- i. One or more science direct Journals
- ii. Photonics Journal
- iii. Bio Photonics Journal
- iv. Optics Journal
- v. Indian Journal of Physics

Item 09/BoS 21.11/11: Feedback and action Taken

Department	Stake holders	Feedback received	Action Taken
B.Sc.	Students	Modify the syllabus in thermal physics and provide thermodynamic laws.	Syllabus was revised.
	Parents	Skill oriented courses can include.	Skill related value added courses were offered.
	Teachers	Include optics related practical's in Physics Lab-II.	The Changes were executed.
	Alumni	Add spectrometer prism and grating experiments in Physics Lab-II.	Two practical's were added.
M.Sc.	Students	Quantum mechanics course can split into two separate courses.	Splitted into two courses namely Quantum mechanics I and Quantum mechanics II.
	Parents	Skill oriented courses related to computer can include.	Skill related summer internship courses were offered.

	Teachers	Modify Laser experiments in Advanced Physics Lab I.	The same was modified.
	Alumni	Include two more experiments related to laser.	Included in the syllabus

Item 10/BoS 21.11/12: Next meeting of the BoS

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

Item 11/BoS 21.11/13: Any other**Conduct of UG practical exam during the even semester**

From the feedback of the stakeholders, it is suggested by the Board of studies members to have practical's during the even semester (VI semester).

Suggestions on conducting seminars/ workshops in collaboration with Universities/ Industries/ NGO/ other organizations

Workshops and seminars can be conducted in collaboration with MOUs and Foreign Universities were suggested based on the research areas of the research centre.

Suggestions for innovative teaching and evaluation techniques

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

- i. Motivate the self-learning capacity by searching videos in you tube and PPT.
- ii. Enrich the subject knowledge via peer teaching and taking seminars.
- iii. Train the students to utilize the online sources.

Discussion on coordination of teaching, research, extension and other activities of the departmentNew Measures

- i. Commemorate the memorial day of physics scientists.
- ii. Organize programmes related to scientific events.
- iii. Organize exhibition for school students

Approval of syllabus for Value-added Courses

The BoS members accepted the Value-added Course and approved the syllabus to be offered by the department.

S.No.	Course Code	Title of the Course	Hours
1	VAP201	Photoshop	30

2	VAP202	Domestic appliances service	30
3	VAP203	Computer hardware training	30
4	VAP204	Computer maintenance	30
5	VAP205	House wiring	30
6	VAP206	Image processing	30
7	VAP207	Mobile phone servicing	30
8	VAP208	Utilization of solar energy	30
9	VAP209	Web designing	30
10	VAP2010	Windmill technology	30

The following suggestions were given by the student representatives

- In Analog Electronics course the topics such as Multivibrators and Special Semiconductor Devices can be include.
- Add few more experiments in the Non-Electronics practical related to solar cells.
- Core project can also be introduced in the V semester.

M. Menisha

Mirthula

Name of the Members	Designation	Signature
Dr. C. Nirmala Louis Chairperson	Assistant Professor and Head of the Department	<i>C. Nirmala Louis</i>
Dr. B. Sundara Kannan University Nominee	Professor and Head	Absent
Dr. I. Hubert Joe Subject Expert	Associate Professor	Attendance Enclosed
Dr. G. Dheva Shantha Kumari Subject Expert	Associate Professor	Attendance Enclosed
Er. Arul Jerald Prakash Industrialist	Former Director, Kerala Science and Technology Museum and Priyadarshini planetarium, Trivandrum	<i>Arul Jerald Prakash</i>
Ms. S. Anne Kavitha Alumni	Research Scholar	<i>S. Anne Kavitha</i>
Dr. V. Shally	Assistant Professor	<i>V. Shally</i>
Dr. A. Lesly Fathima	Assistant Professor	<i>A. Lesly Fathima</i>
Dr. R. Krishna Priya	Assistant Professor	<i>R. Krishna Priya</i>
Dr. M. Abila Jeba Queen	Assistant Professor	<i>M. Abila Jeba Queen</i>
Dr. S. Sonia	Assistant Professor	<i>S. Sonia</i>
Ms. S. Virgin Jeba	Assistant Professor	<i>S. Virgin Jeba</i>
Ms. P. Aji Udhaya	Assistant Professor	<i>P. Aji Udhaya</i>
Dr. Sr. S. Sebastiammal	Assistant Professor	<i>S. Sebastiammal</i>
Ms. S.J. Jenepha Mary	Assistant Professor	<i>S.J. Jenepha Mary</i>