

DEPARTMENT OF PHYSICS

HOLY CROSS COLLEGE (Autonomous), NAGERCOIL.



(Affiliated to Manonmaniam Sundaranar University, Tirunelveli.) Kanyakumari District, Tamil Nadu, India.

Minutes of the Board of Studies meeting of the department of Physics held on 20.1.2020 at 10.00 AM

Ref. No.PHY / BOS / 2019 - 2020 / XIV

Members of the Board of Studies

Chairperson:

Dr. S. Mary Delphine,

Associate Professor and Head,

Department of Physics,

Holy Cross College (Autonomous),

Nagercoil

University Nominee: Dr. B. SundaraKannan,

Professor and Head,

Department of Physics,

ManonmaniumSundaranar University,

Tirunelveli

Subject Experts: 1. Dr.I. Hubert Joe,

Associate Professor,

Department of Physics,

Mar Ivanios College,

Thiruvananthapuram

2. Dr. G. Dheva Shantha Kumari,

Associate Professor,

Department of Physics,

Fatima College,

Madurai

Industrialist

Er. Arul Jerald Prakash,

Director,

Kerala Science and Technology Musuem and Priyadharshini Planetarium,

Thiruvananthapuram.

Alumni

Dr. S. Ajitha

Assistant Professor,

Department of Physics,

NanjilCatholic College of Arts and Science,

Kaliyakkavilai

Student Representatives:

J. Jenima

S. Jasvy

Department members

Dr. Sr. Gerardin Jayam

Dr. S. Mary Freeda

Dr. Thresiamma Chacko

Dr. Fernando Loretta

Dr. C. Nirmala Louis

Dr. V. Shally

Dr. M. Priya Dharshini

Dr. A. Lesly Fathima

Dr. R. Krishna Priya

Ms. M. Abila Jeba Queen

Dr. S. Sonia

Ms. P. Aji Udhaya

Agenda

- Prayer
- 2. Welcome by the Chairperson
- 3. Reading of the minutes of the previous meeting and approval
- 4. Panel of examiners for UG, PG and M. Phil. Physics
- 5. Restructuring/Revision of curriculum for UG with PEOs, POs, PSOs and COs.
- Revision of syllabus for UG Semester I and II
- 7. Restructuring/Revision of curriculum for PG with PEOs, POs, PSOs and COs.
- Revision of syllabus for PG Semester I and II
- 9. Classification of New Courses
- 10. Classification of courses as Employability / Entrepreneurship / Skill Development
- 11. Classification of courses as Local / National / Regional / Global
- 12. Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics
- 13. Question Paper pattern for internal and external examinations
- 14. Recommendation of books and journals for UG and PG
- 15. Conduct of UG and PG practical exam during the odd and even semester
- Conduct of seminars / workshops in collaborations with Government Agents / Universities / NGOs.
- 17. Suggestion for innovative teaching and evaluation techniques for UG and PG
- Discussion on coordination of teaching, research, extension and other activities of the department
- 19. Feedback and action taken
- 20. Next meeting of BoS
- 21. Any other.

The meeting commenced with a prayer song after which the HOD introduced the Board members with warm words of welcome.

The following items in the Agenda were discussed by the members of the Board.

Item 01/BoS 20.01/03: Approval of the minutes of the previous meeting held on 1.2.2019

Dr. V.Shally read the minutes and was approved by the members.

Item 02/BoS 20.01/04: Panel of examiners for UG, PG and M. Phil. Physics

Names and contact details of the examiners were presented for approval and the members of the board also suggested some names of the Associate Professors as examiners for both UG and PG and it was approved by all the members. Recognized guides were suggested as M.Phil. examiners.

Item 03/BoS 20.01/05: Restructuring/Revision of curriculum for UG with PEOs, POs, PSOs and COs.

The BoS members approved the PEOs, POs, PSOs and COs with small corrections after discussion for the Papers in Semester I and Semester II for UG programme.

Programme Educational Objectives (PEOs)

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

Programme Outcomes (POs)

| PO | Upon completion of B.Sc. Degree Programme, the graduates will be able to: | | | |
|------|---|--|--|--|
| PO-1 | Apply the acquired scientific knowledge to face day today needs. | | | |
| PO-2 | Create innovative ideas through laboratory experiments. | | | |
| PO-3 | Carryout fieldworks and projects independently and in collaboration with other institution. | | | |
| PO-4 | Reflect upon green initiatives and take responsible steps to build a sustainable environment. | | | |
| PO-5 | Face challenging competitive examinations that offer rewarding careers in science and education. | | | |
| PO-6 | Impart communicative skills and ethical values. | | | |
| PO-7 | Equip students with hands on training through various courses to enhance Entrepreneurship skills. | | | |

B.Sc. Physics Programme Specific Outcomes (PSOs)

| PSO | Upon completion of B.Sc. Degree Programme, the graduates of Physics Will be able to: | РО |
|-------|--|------|
| PSO-1 | Understand the core theories and principles of physics which include mechanics, thermodynamics, electronics, material science etc. | PO-1 |
| PSO-2 | Develop extensive comprehension of fundamental and diverse applications of Physics. | PO-2 |
| PSO-3 | Apply knowledge of principles, concepts in Physics and analyze their local, National and global impact. | PO-3 |
| PSO-4 | Apply the critical reasoning and computing skills to analyze and solve Problems in physics. | PO-5 |
| PSO-5 | Analyze the observed experimental data and relate the results with Theoretical expectations. | PO-3 |
| PSO-6 | Communicate appropriately and effectively, in a scientific context using Present technology. | |
| PSO-7 | Develop entrepreneurial skills, empowered according to the professional Requirement and become self-dependent. | PO-7 |
| PSO-8 | Understand the professional, ethical, legal, security, social issues and responsibilities. | PO-6 |

The curriculum was framed after analyzed the feedback from the stakeholders.

The overall structure of the curriculum framed in 2017 was accepted by the board with the following modifications.

i. The core and Elective courses were changed.

ii. Instead of 4 Elective papers as theory papers, one of the elective papers was changed intoproject.

The course name 'Skill based course' was changed to 'Skill Enhancement

course'
iv. Mention the contact hours for Skill Enhancement course
Courses offered for the students of **B.Sc. Physics** are given in the following structure

| Semester | Course | Subject | Paper | Hours /week | Credit |
|--|---------------------------|-------------------------------|--|----------------|--------|
| THE STATE OF THE S | Part I | TL2011/ FL2011 | Language: Tamil/French | 6 | 3 |
| I | Part II | GE2011 / GE2012 | General English (A Stream / B Stream) | 6 | 3 |
| | | PC2011 | Major Core I - Mechanics | 4 | 4 |
| | | PC20P1 | Major Practical I - Physics Lab I | 2 | • |
| | Part III | Part III AP2011 Allied I- All | Allied I- Allied Physics I for | 4 | 4 |
| | | | Allied Practical – General Physics Lab | 2 | - |
| | an appear assisted to the | AEC201 | Ability Enhancement Compulsory Course | 2 | 2 |

| | Total of Artist | | (AECC): English Communication | Particular de la constitución de | |
|-----|---|-------------------------------------|---|--|-------------------------|
| | Part IV | PNM301 | Non Major Elective Course (NMEC) Physics In Everyday Life I | 1 |) |
| | | VEC203 | Foundation Course I Values for Life Skill Development Programme(SDP) | | |
| | Part V | 877704 | Certificate course Student Training Programme (STP) | name provide | |
| | | T1.3031/ | Clubs and Committees/N55 Language: Tamil/French | 6 | 1 |
| 11 | Part I | 11 2031/ FL 2021 GE 2021/ | General English (A Stream / B Stream) | 6 | 1 |
| | Part II | () 2021 / 2021 / 2021 | Major Core II Properties of Matter and | 1 | 1 |
| | | PC20P1 | Sound Major Practical I - Physics Lab I | | 1 |
| | Part III | PC20P2 | Major Practical II - Physics Lab II | 9 | 7 |
| | 7 | AP2021/ AP2041 | Allied II – Allied Physics II for Mathematics | 2 | 1 |
| | | AP20P1 | Allied Practical - General Physics Lab | 2 | 9 |
| | | AEC202 | Ability Enhancement Compulsory Course | 2 | 2 |
| | Part IV | PNM202 | (AECC): Environmental Studies Non Major Elective Course (NMEC) Physics | 4 | 2 |
| | | VEC202 | for Every Day Life II Foundation Course I – Values for Life | В | 1 |
| | Part V | SDP202 | Skill Development Programme (SDP) -Certificate course | | 1 |
| | | STP204 | Student Training Programme (STP) = Clubs and Committees/NSS | , | 2 |
| | Part I | TL/2031/ FL/2031 | Language; Tamil/French | 6 | 3 |
| 111 | Part II | GE2031/ GE2032 | General English (A Stream / B Stream) | 6 | 3 |
| | HER PROFILE OF THE PARTY OF | PC2031 | Major Core III – Heat and Thermodynamics | 4 | 4 |
| | Part III | PC2032 PC2033 PC2034 | Major – Elective - I (a) Non Conventional Energy Sources/ (b) Fundamentals of Physics - I/ (c) Microprocessor Fundamentals | 4 | 4 |
| | | PC20P3 | Major Practical III - Physics Lab III | 2 | Rethingues despuse |
| | | AP2011/ AP2031 | Allied I – Allied Physics I for Chemistry | 4 | 4 |
| | | AP20PI | Allied Practical - General Physics Lab | 2 | energeneral security to |
| | CONTRACTOR OF COMPANY | SBC203/ | Skill Based Course (SBC) - Yoga / | 2 | 2 |
| | | SBC204 | ComputerLiteracy | | *** |
| | Part IV | VEC204 | Foundation Course II – Personality Development | • | |
| | | STP204 | Student Training Programme (STP) – Clubs and Committees/NSS | * | # |

| | Part V | SLP203 | Service Learning Programme (SLP): Extension Activity | | 1 |
|-----------------------------------|----------|----------------------------|---|-----|--------------|
| Marinous services and marinos and | | | (RUN) | | |
| IV | Part I | TL2041/ FL2041 | Language: Tamil/French | 6 | 3 |
| | Part II | GE2041 / GE2042 | General English (A Stream / B Stream) | 6 | 3 |
| | | PC2041 | Major Core IV – Optics and Spectroscopy | 4 | 4 |
| | Part III | PC2042 PC2043 PC2044 | Major – Elective - III (a)Computer Programming in C++/ (b) Medical Physics/ (c) Optoelectronics | 5 | 4 |
| | | PC20P3 | Major Practical III - Physics Lab III | - | 2 |
| | | PC20P4 | Major Practical IV - Physics Lab IV | 2 | 2 |
| | | AP2021/ AP2041 | Allied II – Allied Physics II for Chemistry | 4 | 4 |
| | | AP20P1 | Allied Practical – General Physics Lab | 2 | 2 |
| | | SBC203/ | Skill Based Course (SBC) – Yoga / | 2 | 2 |
| | Part IV | SBC204 | ComputerLiteracy | | |
| | | VEC204 | Foundation Course II – Personality Development | - | 1 |
| | Part V | STP204 | Student Training Programme (STP) - Clubs and Committees/NSS | - | 1 |
| $\dot{\mathbf{v}}$ | 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 Major Proticel V. Physics Leb V. | 5 4 | 4 |
| | | PC20P5 PC20P6 | Major Practical V - Physics Lab V Major Practical VI - Physics Lab VI | 2 | - |
| | | PSK205 | Skill Based Course (*SBC) – Basic | 2 | 2 |
| | Part IV | HRE205 | Electrical circuits and Instruments Foundation Course III - Human Rights Education (HRE) | - | 1 |
| | | PC2061 | Major Core VIII – Relativity and Quantum Mechanics | 6 | 5 |
| VI | | PC2062 | Major Core IX – Digital and Communication Electronics | 6 | 5 |
| | | PC2063 | Major Core X - Nuclear Physics | 5 | 5 |
| | | | Major – Elective – II | 4 | 4 |
| | Part III | PC2064 | (a) Mathematical Physics | | |
| | | PC2065 | (b) Nanophysics | | |
| | | PC2066 | (c) Astrophysics | | 2 |
| | | PC20P5 | Major Practical V - Physics Lab V | 2 | 2 |
| | | PC20P6 | Major Practical VI - Physics Lab VI | 4 | 2 |
| | | PC20P7 | Major Practical VII - Physics Lab VII | 2 | 2 |
| | Part IV | PSK206 WSC206 | Skill Based Course (*SBC) – Project Foundation Course IV - Women's Studies (WS) | - | 1 |
| | | | TOTAL | 180 | 143 |

Item 04/BoS 20.01/06: Revision of syllabus for UG Semester I and II

The following courses during the I and II semesters are revised/ modified based on a land I semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semesters are revised/ modified based on a land II semester and II semesters are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised/ modified based on a land II semester are revised and II se TANSCHEsyllabus and also from the student's feedback

- SEM I Major core paper 'Mechanics and Properties of matter' in the previous course structure is split up into 'Mechanies' and 'Properties of matter and sound' as core I and core II respectively based on the feedback received from the students.
- ìì. Modified allied paper title as 'Allied Physics I for Mathematics' and 'Allied Physics II for Mathematics' for SEM I and II respectively.

Item 05/BoS 20.01/07: Restructuring/Revision of curriculum for PG with PEOs, POs, PSOs and COs.

The BoS members approved the PEOs, POs, PSOs and COs after discussion for the Papersin Semester I and Semester II for PG programme.

M.Sc. Programme Outcomes(POs)

| PO | Upon completion of M.Sc. Degree Programme, the graduates will be able to: |
|------|--|
| PO-1 | Recognize the scientific facts behind natural phenomena. |
| PO-2 | Relate the theory and practical knowledge to solve the problems of the society. |
| PO-3 | Prepare successful professionals in industry, government, academia, research, Entrepreneurial pursuits and consulting firms. |
| PO-4 | Face and succeed in high level competitive examinations like NET,GATE and TOFEL. |
| PO-5 | Carryout internship programme and research projects to develop scientific skills and Innovative ideas. |
| PO-6 | Utilize the obtained scientific knowledge to create eco-friendly environment. |
| PO-7 | Prepare expressive, ethical and responsible citizens with proven expertise. |

M.Sc. Physics Programme Specific Outcomes (PSOs)

| PSO | Upon completion of M.Sc. Degree Programme, the graduates of Physics will be able to : | PO |
|-------|---|------|
| PSO-1 | Have well-defined knowledge on theoretical concepts and experimental methods of advanced physics (Classical mechanics, Mathematical physics, Quantum Mechanics, Solid state Physics, Molecular Spectroscopy, Integrated electronics, Astrophysics, Nanophysics, Microprocessor etc.). | PO-1 |
| PSO-2 | Acquire skills in performing advanced physics experiments and projects using modern technology and numerical simulations. | PO-2 |
| PSO-3 | Develop and communicate analytical skills ranging from nuclear to cosmology to progress in the expanding frontiers of physics. | PO-3 |
| PSO-4 | Apply and interpret physics principles in various physical observations. | PO-2 |

| PSO-5 | Use the techniques, skills, and modern technology necessary to communicate effectively with professional and ethical responsibility. | PO-5 |
|-------|--|------|
| PSO-6 | Demonstrate proficiency in analyzing, applying and solving scientific problems. | PO-4 |
| PSO-7 | Understand the impact of Physics in a global, economic, environmental, and societal context. | PO-7 |

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

| Semester | Subject code | Title of the paper | Hours/we | Cre dits |
|----------|--------------|---|----------|-------------|
| | PP2011 | Core I – Classical Mechanics | 6 | 4 |
| | PP2012 | Core II - Mathematical Physics | 6 | 4 |
| | PP2013 | Core III – Quantum Mechanics-I | 6 | 4 |
| I | PP2014 | Elective I – (a) Advanced Nuclear Physics | 6 | 5 |
| | PP2015 | (b) Molecular Physics | | |
| | PP2016 | (c) Numerical methods | | |
| | PP20P1 | Practical I - Advanced Physics Lab – I (General Physics) | 6 | - |
| | PP2021 | Core IV – Electromagnetic Theory | 6 | 4 |
| | PP2022 | Core V - Quantum Mechanics-II | 6 | 4 |
| | PP2023 | Core VI - Condensed MatterPhysics-I | 6 | 4 |
| | PP2024 | Elective II – (a) Experimental design | 6 | 5 |
| | PP2025 | (b)Introductory Astronomy, | | |
| 11 | | Astrophysics & Cosmology | | |
| | PP2026 | (c) Laser Physics | | |
| | PP20P1 | Practical I - Advanced Physics Lab – I (General Physics) | - | 5 |
| | PP20P2 | Practical II - Advanced Physics Lab – II (Programming with C++) | 6 | 5 |
| | LST202 | Life Skill Training (LST) – 1 | • | 1 |
| | PP2031 | Core VII - Thermodynamics and Statistical Mechanics | 6 | 4 |
| | PP2032 | Core VIII – Electronics | 6 | 4 |
| | PP2033 | Core IX - Condensed MatterPhysics-II | 6 | 4 |
| Ш | PP2034 | Elective III - (a) Biophysics | 6 | 5 |
| | PP2035 | (b) Microprocessor and | | |
| | PP2036 | Microcontroller (c) Solar Energy Utilization | | |
| | PP20P3 | Practical III- Advanced Physics Lab – III (Electronics) | | - |

| The second secon | PP2041 | Core X - Nuclear and Elementary Particle Physics | 6 | 4 |
|--|-----------------|--|-----------------|-------------|
| | PP2042 | Core XI - Spectroscopy | 6 | 4 |
| with the with | Second and walk | compression and another than the control of the con | ar election e a | deli exilia |
| | PP2043 | Project | 8 | 4 |
| | PP2044 | Elective IV – (a)MaterialsPhysics and | 6 | 5 |
| | PP2045 | Processing | | |
| IV | PP2046 | Techniques | | |
| | 112040 | (b) Nanophysics | | |
| | | (c) X-ray Crystallography | | |
| | PP20P5 | Practical III- Advanced Physics Lab – III (Electronics) | - | 4 |
| | PP20P6 | Practical IV – | | |
| | | Advanced Physics Lab – IV (Microprocessor | 6 | 5 |
| | | andMicro Controller) | | |
| | LST204 | Life Skill Training (LST) – II | - | 1 |
| | STP201 | Summer Training Programme | - | 1 |
| | | TOTAL | 120 | 90 |

Item 06/BoS 20.01/08: Revision of syllabus for PG Semester I and II

The overall structure of the curriculum framed in 2017 was accepted by the board with the following modifications.

- i. The core and Elective courses were changed.
- ii. Individual project was suggested by the board members instead of group project for IIM.Sc. students
- iii. M.Sc. students can attend a seminar/ conferences

Item 07/BoS 20.01/09: Classification of New Courses

| Programme | Course Code | Course Title |
|-----------|-------------|--|
| UG | PC2011 | Major Corel - Mechanics |
| | AP2011 | Allied I- Allied Physics I for |
| | | Mathematics |
| | PNM201 | Non Major Elective-Physics in Everyday Life 1 |
| | PC2021 | Major Corell -Properties of Matter and |
| | | Sound |
| | AP2021 | Allied II-Allied Physics II for |
| | | Mathematics |
| | PNM202 | Non Major Elective-Physics in Everyday Life II |
| | PC20P1 | Major Practical I-Physics Lab I |

| | AP20P1 | Allied Practical- General Physics Lab |
|----|--------|---|
| PG | PP2011 | Core I – Classical Mechanics |
| | PP2012 | Core II – Mathematical Physics |
| | PP2013 | Core III – Quantum Mechanics-I |
| | PP2014 | Elective I Advanced Nuclear Physics |
| | PP2016 | Numerical methods |
| | PP2021 | Core IV – Electro Magnetic Theory |
| | PP2022 | Core V - Quantum Mechanics-II |
| | PP2023 | Core VI – Condensed |
| • | | Matter Physics-I |
| | PP2024 | Elective II |
| | | Experimental design |
| | PP2025 | Introductory Astronomy, Astrophysics & |
| | | Cosmology |
| | PP2026 | Laser Physics |
| | PP20P1 | Practical-I Advanced Physics Lab –I (General Physics) |
| | PP20P2 | Practical-II Advanced Physics Lab –II (Programming with |
| | | C++) |

Item 08/BoS 20.01/10: Classification of courses as Employability / Entrepreneurship / Skill Development

UG

| Course Code | Course Title | Skill development | Employability | Entrepreneurs hip |
|----------------|--|----------------------|---------------|----------------------|
| PC2011 | Major Core I - Mechanics | ✓ | | ✓ |
| PC20P1 | Major Practical I - Physics Lab I | ~ | ✓ | |
| AP2011 | Allied I- Allied Physics I for Mathematics | V | * | |
| AP20P1 | Allied Practical – General Physics Lab | √ | | |
| PNM201 | Non Major Elective Course (NMEC) – Physics in | ✓ | | V |
| PC2021 | Major Core II -Properties of Matter and Sound | V | | V |

| PC20P1 | Major Practical I - Physics | V | V | Experience of the second and administrative of the part of the second and the part of the second and the second a |
|--------------------|---|----------|----------|--|
| PC20P2 | Major Practical II - Physics Lab II | | | 1 The statement of the |
| AP2021 / AP2041 | Allied II – Allied Physics II for Mathematics | V | | ✓ |
| AP20P1 | Allied Practical – General Physics Lab | V | | |
| PNM202 | Non Major Elective Course (NMEC) – Physics for Every Day Life II | ✓ | | |

PG

| Course Code | Course Title | Skill | Entrepreneurship |
|-------------|------------------------------------|-------------|------------------|
| | | development | |
| PP2011 | Core I – Classical Mechanics | ✓ | ✓ |
| PP2012 | Core II - Mathematical | ✓ | / |
| | PhysicsMethods | | |
| PP2013 | Core III – Quantum Mechanics-I | ✓ | ✓ |
| PP2014 | Elective I | √ | |
| PP2015 | (a) Advanced Nuclear Physics | | |
| PP2016 | (b) Molecular Physics | | |
| | (c) Numerical methods | | |
| PP2021 | Core IV – Electromagnetic Theory | √ | |
| PP2022 | Core V - Quantum Mechanics-II | √ | ✓ |
| PP2023 | Core VI – Condensed | ✓ | ~ |
| | Matter Physics-I | | |
| PP2024 | Elective II | ✓ | |
| PP2025 | (a) Experimental design | | |
| | (b)Introductory Astronomy, | | |
| PP2026 | Astrophysics & | | |
| | Cosmology | . 0 | |
| | (c) Laser Physics | | |
| PP20P1 | Practical 1 - Advanced Physics Lab | V | V |
| | -1 | | |
| | (General Physics) | | |

| PP20P2 | Practical II - Advanced Physics | ✓ | ✓ |
|--------|---------------------------------|---|----------|
| | Lab – | | |
| | II (Programming with C++) | | |

Item 09/BoS 20.01/11: Classification of courses as Local / National / Regional / Global The members of the Board classified the UG and PG courses in the new structure based on as local / regional / national / global relevance.

UG

| Sl.No | Course Code | Se m | Course Title | Local | Global |
|-------|-------------------|---------|---|----------|----------|
| | Code | este | | | |
| | | r | | | |
| 1. | PC2011 | I | Major Core I - Mechanics | | V |
| 2. | PC20P1 | I | Major Practical I - Physics Lab I | ✓ | |
| 3. | AP2011 | I | Allied I- Allied Physics I for Mathematics | ✓ | |
| 4. | AP20P1 | I | Allied Practical – General Physics Lab | ✓ | |
| 5. | PNM201 | I | Non Major Elective Course (NMEC) – Physics in Everyday Life I | | ✓ |
| 6. | PC2021 | II | Major Core II –Properties of Matter and Sound | | ✓ |
| 7. | PC20P1 | II | Major Practical I - Physics Lab I | ✓ | |
| 8. | PC20P2 | II | Major Practical II - Physics Lab II | | ✓ |
| 9. | AP2021/ AP2041 | II | Allied II – Allied Physics II for Mathematics | | ✓ |
| 10. | AP20P1 | II | Allied Practical – General Physics Lab | | / |
| 11. | AEC202 | II | Ability Enhancement Compulsory Course (AECC): Environmental Studies | | |
| 12. | PNM202 | II | Non Major Elective Course (NMEC)- Physics for Every Day Life II | | V |

| Sl.No | Course | Seme | Course Title | National | Global |
|------------|----------------|------|------------------------------|----------|--------|
| 1 | Code PP2011 | ster | Core I – Classical Mechanics | ✓ | |
| 2 | PP2012 | I | Core II - Mathematical | 1 | |
| <u>-</u> . | | | PhysicsMethods | | |

| 3. | PP2013 | Ī | Coro III Overton M. I. | | |
|-----|--------|-----|---|--------------|-----------|
| J. | 112015 | 1 | Core III – Quantum Mechanics-I | 1 | |
| | | | | | |
| 4. | PP2014 | T | Elective I | | |
| | PP2015 | | | (· · · \$/p | mid 🗸 p o |
| | PP2016 | | (a) Advanced Nuclear Physics | | |
| | 112010 | | (b) Molecular Physics | | |
| - | PP2021 | | (c) Numerical methods | | |
| 5. | PP2021 | 11 | Core IV – Electromagnetic | | 1 |
| | | | Theory | | |
| 6. | PP2022 | II | Core V - Quantum Mechanics-II | | |
| | | | guantum Mechanics-11 | ✓ | |
| 7. | PP2023 | II | Core VI - Condensed Matter | / | |
| 0 | DDDGGG | | Physics-I | Y | |
| 8. | PP2024 | II | Elective II | | / |
| | PP2025 | | (a) Experimental | | |
| | PP2026 | | design (b)Introductory | | |
| | 112020 | | Astronomy, | | |
| | | | Astrophysics & | | |
| | | | Cosmology | | |
| | 777 | | (c) Laser Physics | | |
| 9. | PP20P1 | II | Practical I - Advanced Physics | ✓ | |
| | | | Lab - I | | |
| 10. | PP20P2 | 177 | (General Physics) | | |
| 10. | FF20F2 | II | Practical II - Advanced Physics Lab – II | ✓ | |
| L | | _ | (Programming with C++) | | |

Item 10/BoS 20.01/12: Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics

| Donon Cod. | D min | Tuman values / Fro | lessional Ethics |
|------------|---------------------|--------------------|------------------|
| Paper Code | Paper Title | Environment | Human Values |
| | | and | |
| | | Sustainability | |
| AEC202 | Ability | ✓ | |
| | Enhancement | | |
| | Compulsory | | |
| | Course | | |
| | (AECC): | | |
| | Environmental | | |
| | Studies | | |
| LST202 | Life Skill Training | | ✓ |
| | (LST) – I | | , |

Item 11/BoS 20.01/13: Question Paper pattern for internal and external examinations

Internal: External 30:70

Question paper pattern for External

Part A- 10x1=10 marks (Objective type)

Part B- 5x 4=20 marks (Internal Choice) – 0ne question should be of application type and another will be of analysis type. The internal choices should be of same type.

Part C- 5x8=40 (Internal Choice) - One question should be of application type (Problem solving)

Total - 70 marks

The question pattern is not applicable for the following papers:

- i. AECC -English Communication
- ii. AECC -Environmental Studies
- iii. NMEC(Non Major Elective Course)-Physics for Every Day Life II

Question paper pattern for CIA (including test, assignment, Quiz, any other mode of CIA)

Test

- 15 marks

Class test (3)

- 6 marks

Quiz (2)

- 4 marks

Open book test//

Book, article review/ Role- play/

Seminar/home assignment

Group Discussion/ Problem solving

- 5 marks

Total

- 30 marks

M.Sc. Physics (core, elective) for internal and external examinations

Internal: External 40:60

Question paper pattern for External

Part A- 10x1=10 marks (Objective type)

Part B- 5x 3=15 marks (Internal Choice) – 0ne question should be of application type and another will be of analysis type. The internal choices should be of same type.

Part C- 5x7=35 (Internal Choice) – 0ne question should be of application type and another will be of analysis type

Total - 60 marks

Question paper pattern for CIA (including test, assignment, Quiz, any other mode

of CIA)Test

- 20 marks

Seminar

- 4marks

Class test (2)

- 4marks

Quiz(2)

- 4marks

Open book test/Problem solving/

Book, article review/ Group Discussion-

4marksOnline home assignment

4marks

Total

- 40 marks

Item 12/BoS 20.01/14: Recommendation of books and journals for UG and PG

The BoS members recommended the following books based on the modified/ revised syllabus for B.Sc. Physics

- Mechanics Kleppner and Kolenkow M.Sc. Physics
 - i. Mathematical Physics H.K.Dhas
 - ii. Numerical methods Jain and Iyengar
 - iii. Quantum Mechanics Zetly
 - iv. EMT Ramanadhan
 - v. Group Theory Albert cotton

The board members suggested to subscribe Current Science journal for the department.

- Text book published by the faculty of department of Physics was recommended for NMEC.
- Lab Manuals published by the faculty of department of Physics were recommended for Major practical's.
- Least count values should not be mentioned in the lab manual for typical instruments used in the lab

Item 13/ BoS 20.01/15: Conduct of UG/PG practical exam during the even semester

From the feedback of the stakeholders, it is suggested by the Board of studies members to retain the existing pattern/ followed from 2007 onwards. i.e. will conduct practical examination in the even semester.

Item 14/BoS 20.01/16: Conduct of seminars / workshops in collaborations with Government Agents / Universities / NGOs.

Apply for seminar grant from UGC/DST/CSIR/TNSCST/TANSCHE

Item 15/BoS 20.01/17: Suggestion for innovative teaching and evaluation techniques for UG and PG

- i. Apply for internship in MHRD portal
- ii. Form student's club
- iii. Frame department calendar

Item 16/BoS 20.01/18: Discussion on coordination of teaching, research, extension and other activities of the department

The board members highly appreciated the department of Physics for organizing NGPE exam.

Item 17/BoS 20.01/19:Feedback and action taken

| Department | Stake holders | Feedback received, | Action Taken |
|------------|---------------|--|--|
| B.Sc. | Students | Modify the mechanics and properties of matter syllabus | Syllabus was revised. |
| | Parents | Value added courses can include. | Value added courses were offered. |
| | Teachers | Include more practical's in Physics Lab-I. | The changes were executed. |
| | Alumni | Add sonometer experiment in Physics Lab-II. | Two practical's were added. |
| M.Sc. | Students | Condensed matter physics syllabus was heavy. | Reduced |
| | Parents | Summer Internship can include. | Value added courses and internship were offered. |
| | Teachers | Modify C++ practicals. | The same was modified. |
| | Alumni | Include more experiments. | Included in the syllabus |

Item 18/BoS 20.01/20: Next Meeting of the BoS

The members of the board suggested to have the next meeting of BoS in 2nd week of August, 2020. The meeting ended with vote of thanks by the HoD, the Chairperson of the BoS at 2.15 pm.

The following suggestions were given by the student representatives

- Major core paper 'Mechanics and Properties of matter' can be separated into 'Mechanics' and 'Properties of matter and sound' as separate core courses.
- Allied paper can be modified into two different courses for maths and chemistry respectively.
- PG core project can be individual one.

Janima Jasvy

| SI.No | 0 | Name of the members | Designation | Signature |
|---------|------------------|--------------------------|--------------------------|------------------|
| 1 | | Dr. B. SundaraKannan | Professor and Head | B. Swhole |
| 2 | 2. | Dr.I. Hubert Joe | Associate Professor | skie T |
| 3 | | Dr.G.DhevaShanthaKumari | Associate Professor | Absent |
| 4 | • | Er. Arul Jerald Prakash, | Director, Kerala Science | 10. 11 |
| | | | and Technology Musuem | 1:)/ |
| | | | and Priyadharshini | |
| | | | Planetarium | |
| 5 | 5. | Dr. Sr. GerardinJayam | M.Phil Coordinator | Si Gerardin |
| 6 | 5. | Dr. S. Mary Delphine | Associate Professor | J. H. Relphine |
| 7 | 7. | Dr. S. Ajitha | Assistant Professor | |
| 8 | 3. | Dr. S. Mary Freeda | Associate Professor | Mary freeda |
| 9 | 9. | Dr. Fernando Loretta | Associate Professor | Fernando Rosette |
| 1 | 10. | Dr. ThresiammaChacko | Associate Professor | (g) (last) |
| | 11. | Dr. C. Nirmala Louis | Assistant Professor | La dimile dui |
| 1 | 12. | Dr. V. Shally | Assistant Professor | V. Sally |
| Acres 1 | 13. | Dhorghini | Assistant Professor | M.P. Shees |
| | | Dr. A. LeslyFathima | Assistant Professor | Stuly Lathing |
| | | Dr. R. Krishna Priya | Assistant Professor | 100 |
| | | A hila Jeha Queen | Assistant Professor | Olul. |
| P | $\frac{16.}{17}$ | G. Gamio | Assistant Professor | D. I. Ildhare |
| | $\frac{17.}{10}$ | Ms. P. AjiUdhaya | Assistant Professor | P. Azi Valadas |