



DWARAKA DOSS GOVERDHAN DOSS VAISHNAV COLLEGE
(AUTONOMOUS)

College with Potential for Excellence
Linguistic Minority Institution. Affiliated to University of Madras

DEPARTMENT OF PHYSICS

Programme Name – B.Sc. Physics

Programme Code - 09

Minutes of the Board of Studies Meeting

DATE: 6.5.2022

TIME: 9.30 a.m.

Venue : Department of Physics & Google Meet

S.No.	Agenda	Decisions based on Discussion
1.	Prayer	
2.	Welcome by Dr.D.Uthra, Head & Chairperson of the Board	
3a.	Report on Progression rate – HE and jobs by 2018-21 batch by Dr.V.Sangeetha	Excellent progression and the role of teachers is appreciated in imparting knowledge and skills
3b.	Discussion of existing syllabus with regard to CO attainment by Dr.V.Renganayaki	Very good and the efforts of teachers to map, understand the needs of current generation and market is appreciated
4.	Discussion on Recommendation by Curriculum Review Committee and Stake holders –Faculty, students, alumni, experts	Received and well taken
5.	Core Papers(Sem V and Sem VI), Practicals and Discipline Specific Electives for B.Sc.Physics students.	Can be revised in coming years
6.	Practicals for B.Sc.Physics and Allied Physics- to change from year end to semester end – Challenges and Advantages - Experts' Opinion	Can be conducted at the year-end as prescribed by

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7.	Ratification for newly introduced courses can be offered to the students from batches 2022-2023 onwards	Approved
8.	<p>1. Mechanics and Properties of Matter , 2. Thermal Physics and Acoustics , 3. Optics 4. Atomic Physics</p> <p>Courses are revised, revamped, new modules introduced and re-named as</p> <p>1. Waves, Mechanics and Properties of Matter 2. Thermal and Statistical Physics 3. Optics and Spectroscopy 4. Atomic Physics and Lasers</p> <p>To be introduced from 2022-2023</p>	Approved
9.	<p>Discussion on the course structure of</p> <p>1. Waves, Mechanics and Properties of Matter 2. Thermal and Statistical Physics 3. Optics and Spectroscopy 4. Atomic Physics and Lasers</p>	Approved
10.	<p>Noting the % of Revision in these Four revised courses</p> <p>1. Waves, Mechanics and Properties of Matter 2. Thermal and Statistical Physics 3. Optics and Spectroscopy 4. Atomic Physics and Lasers</p>	<p>40% 50% 35% 40 %</p>
11.	Ratification - to offer for these courses to B.Sc. Physics students belonging to 2022-2023 batch onwards	Approved
12.	Discussion on B.Sc. Physics Syllabus based on CBCS pattern, OBE pattern, LOCF of UGC, Revised Bloom's taxonomy, importance to specify Learning Outcomes, CO for every course and necessity of mapping.	Approved and is as per NAAC
13.	Courses from NPTEL, SWAYAM, IIRS, etc to help interested students gain knowledge beyond classrooms and get extra credits as in previous years	Approved



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14.	End Semester Exam - Question Paper pattern – A,B,C and internal choice – retained as per previous BOS	Approved, can be done as per instructions from College guidelines
15.	Internal assessment Pattern – Theory & Practicals – retained as per previous BOS	Approved, can be done as per instructions from College guidelines
16.	Generic skills to be assessed in students	Approved, can be done as per instructions from College guidelines
17.	Report on skill development in STEM through diverse modes by faculty	Approved and excellent initiative
18.	Value Added courses are retained as per previous BOS	Approved, can be done as per instructions from College guidelines
19.	Non Major Elective courses- In earlier BOS meetings, it has already been approved that Non major elective papers (NME) can be offered also for students without Physics background in school. The same can be continued and can be offered to the students who belong to other departments also.	This can be offered as a basket to all or to individual departments based, on the rules and regulations.
20.	<p>Any other RELATED matter - The efforts of teachers and performance of Department of Physics was highlighted and well appreciated by the Chairman of NAAC peer visit recently held on 6-7, April, during their discussion with Teachers of the college. He said “ I wish I also visited your Department. Congratulations for your work”.</p> <p>In their exit meeting too, our achievements was quoted along with Dept. of Viscom while mentioning about future ready students.</p> <p>During MOCK NAAC visit, Dr,Sethuraman, Professor, Department of Chemistry, Gandhigram University had quoted about our performance specially during his discussions with NAAC & IQAC committee.</p> <p>Autonomy Commission visit that was held recently on 11-12, March said ours is an exemplary Department for having many Projects from DBT, DST, Vigyan Prasar, TIFR, IMSC and other Govt. agencies which is very unique. Our Department is the ONLY department to have these projects, outreach works, online/ virtual, WIPO courses offered</p>	<p>Efforts of the management and College authorities to provide STEM lab and refurbished Physics lab are commendable. Teachers efforts to design the lab, get things work done during COVID, extra efforts by teachers to take practical classes despite hurdles deserve recognition.</p>

21. Vote of Thanks



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DEPARTMENT OF PHYSICS(Aided)

MEMBERS OF THE BOARD

1. Dr.D.Uthra Chairman
Associate Professor & Head
Department of Physics
Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai
2. Dr.G.Anbalagan University Nominee
Professor, Department of Nuclear Physics
University of Madras, Guindy Campus
Chennai
3. Dr.K.Venkatramanan Subject Expert
Professor and Head of Physics,
Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya,
SCSVMV Deemed University,
Enathur, Kanchipuram
4. Dr.P.Vasudevan Subject Expert
Associate Professor,
Department of Physics
Rajalakshmi Engineering College (Affiliated to Anna University)
Thandalam, Chennai
5. Mr.S.Pradeep Kumar Industrial Expert
Assistant Professor of Radiology Physics
Royapettah Govt. Hospital
Chennai
6. Dr.Timangshu Chetia (2012-15 Batch) Meritorious Alumnus
CSIR- North East Institute of Science and Technology (NEIST)
Jorhat, Assam
7. Prof.M.Devika Allied Subject Expert
Associate Professor
Post Graduate & Research Department of Mathematics
Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai
8. Dr.R.Kumaran Allied Subject Expert
Assistant Professor
Post Graduate & Research Department of Chemistry
Dwaraka Doss Goverdhan Doss Vaishnav College, Chennai



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**Internal members of the Board
Curriculum Review Committee members**

1. Dr. D. Syamala
2. Dr. V. Renganayaki
3. Dr. V. Sangeetha
4. Dr. D. Sridevi
5. Ms. D. Pourkodee
6. Dr. K. Selva Kothai Nachiyar



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DEPARTMENT OF PHYSICS (Aided)

Programme Name – B.Sc. Physics

Programme Code - 09

Minutes of Board of Studies Meeting

DATE: 25.04.2022

TIME: 9.30 a.m.

Venue : Department of Physics & Google meet

1. The Board of Studies meeting for B.Sc. Physics was held on 6.05.2022 at 9.30.a.m
2. The Members of the board- Subject experts, Industrial Expert and Alumni and Internal members were present.
3. Recommendations made by the Curriculum Review Committee (CRC), was discussed and considered.
4. Feedback obtained recently from stakeholders including students, alumni and industrial experts were taken into account.
5. Considering these views, the current syllabus regarding the existing Electives and Practicals for III B.Sc. Physics are not revised. Progression rate is very good and helps crack entrance exams implying syllabus is of good standard.
6.
 1. Mechanics and Properties of Matter
 2. Thermal Physics and Acoustics
 3. Optics
 4. Atomic Physics

These courses are revised, revamped, new modules introduced and re-named as

1. Waves, Mechanics and Properties of Matter
2. Thermal and Statistical Physics
3. Optics and Spectroscopy
4. Atomic Physics and Lasers



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A comparison of this is given in annexure 2 and the approved syllabus for above are given in annexure 3. Comparison of existing modules with revised modules for each course along with reasons is given clearly. There is revision of 35- 50 %.

7. Moreover this syllabus integrates current trends in S&T with modules neatly. Students have been learning these core Science concepts for ages. This revision brings out applications of Physics in

- Physics behind Covid transmission through saliva droplets
- Eyepieces in wide range cameras-view field diameter-intraocular lenses
- LIGO-gravitational wave interferometer-seismic isolation, operating in vacuum-LIGO INDIA
- polaroid camera-polaroid glasses
- Specific rotatory power- Applications in sugar industries
- Photo detectors, Sensor pixels, solar cell and solar panel

This gives scope for future generation to become self- learners/ life long learners and have pride about our country's S&T research.

8. Physics Core paper I, II , III and IV and corresponding practicals can be offered for students of 2022-23 batch. It is also ratified this can be offered from the year 2022-23 for the B.Sc.Physics students belonging to 2022-23 batch.

Practical Exams to be conducted at the year-end as in previous years based on Experts' opinion. If at all needed, this can be considered in future. But we need to think of the following:

- Number of days spent in exams/ exam preparation will be more than learning, as number of students who can utilize lab at a time during exams in these courses will be lesser.
- Also this will eventually decrease number of practical experiments students perform.
- This will lead to decrease in hours of learning and practicing,
- This will increase unnecessary usage of resource materials and demand of external examiners for every ESE. Lab space, materials are constraints.
- These challenges need to be addressed before changing practical exam as year-end exam to Semester - end exam in these courses.
- So currently it is suggested to continue the year end practical exam.



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- College needs to come out with a plan to increase credits if Practical exam is conducted every semester. They should not make the credits half of existing, because the students are tested twice with the experiments with similar rigour.
 - More so, most of these experiments are currently present in University of Madras Syllabus. University gives every student doing any of these experiments 4 credits, meaning each of these practicals has weightage of 4 credits. These practicals procedure cannot be reduced or halved, as it will be pointless. So if this Department opts to conduct Practical exam every semester, then the credits awarded needs to be the same.
9. Practical course work is revamped. It may be followed only if necessary to have practical exams at the end of every semester. Revised practicals syllabi are given in annexure 4 and free online pedagogical tools for Physics(virtual labs) are given in annexure 5
10. Entire Syllabus is as per the requirements to meet the Outcome Based Education (OBE) or Outcome Based Learning (OBL) criteria and LOCF for UG Programme B.Sc.Physics prescribed by UGC.
11. Learning objectives for every course is specified.
12. Mapping of Course Outcome (CO) to the Programme Outcome (PO) and Programme Specific Outcome (PSO) has been done for all papers.
13. Assessment pattern for every course is given along with the weightage under Revised Bloom's taxonomy is clearly specified .
14. The syllabus is based on the Common regulations Under CBCS prescribed by the University of Madras.
15. As in previous years, students who complete course(s) through ICT, recognized by SAKSHAT , SWAYAM , IIRS, ISRO, Government of India, as well from free online courses from the world's best Universities under Edx, Udemy and Coursera. may be given extra credit(s) based on the course(s) they complete and upon the recommendation of the Head of Department.



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16. Question paper pattern for the End Semester Exams will continue to be in A,B,C pattern. It is approved that the evaluation pattern can be followed as per Common Regulations under CBCS of University of Madras and as per our College rules.
17. The pattern of Internal Evaluation for B.Sc. Physics Degree Course to be Program Outcomes and Course outcomes specified under OBE and on CBCS Pattern. Questions to be framed based on revised Bloom's Taxonomy. It should have the component of Multiple choice questions and Objective questions.

**Pattern of Internal Evaluation for B.Sc. Physics Degree Course
based on CBCS Pattern , OBE and Revised Bloom's Taxonomy**

THEORY

2019 and 2020 Batches

Int.Marks: 40

Two CIA tests	25 marks
Attendance	5 marks
Generic Skills	10 marks

2021 Batch onwards

Int. Marks: 50

Two CIA tests	30 marks
Attendance	5 marks
Generic Skills	15 marks

Question paper pattern for CIA

Section A

Multiple choice questions (20X1 =20 marks)

Section B

Descriptive questions (3X10= 30 marks)

OR

Section A (Combination of Multiple choice and short answer)

Multiple choice questions (10X1=10 marks)

Short answer questions (5X2=10 marks)

Section - B

Descriptive questions (2x15 = 30 marks)



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PRACTICAL

2019 and 2020 Batches

Max.Int.Marks :50

Attendance	5 marks
Two Model Practical Tests	20 marks
Class room practicals	15 marks

2021 Batch onwards

Max.Int. Marks :50

Attendance	5 marks
Two Model Practical Tests	25 marks
Class room practicals	20 marks

18. Generic skills of the students can be assessed using different tools or methodologies. This can be chosen based on the nature of student(s), year of study, interests of the students/ class, skills needed for progression to Higher education/ job, needs of the of the Society. A few sample assessment tools are : Making a power point or a video presentation; role- play; peer group teaching; outreach activities; Citizen Science activities; explanation concepts through audio, video or drawing; creating awareness on S&T initiatives of our country in particular and world at large; creating ICT tools appropriate for peer learning; writing in Science magazines; presentation to an audience- in Tamil/ English; Translation of Science articles; Dubbing STEM videos; Review of books on Science / Scientists; being a part of hands-on STEM activities; creating digital materials for learning - Physics, Science history, materials related to School Textbooks.

19. Contents in the courses are well suited for regional, National and global needs as well bears in mind, the general background of students who opt B.Sc.Physics.

- Progression towards M.Sc. Physics/ Medical Physics/ Materials Science through Entrance exams where students compete nationally shows this syllabus is well updated. Students who join other courses through entrance prove their analytical skills and reasoning developed during their course



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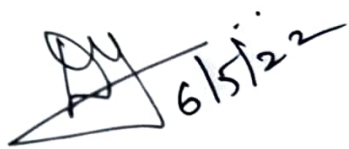

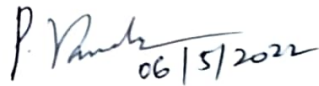

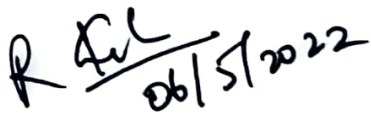
- Current revision includes concepts that are of National importance and that would give them International/ global outlook - LIGO-gravitational wave interferometer-seismic isolation, operating in vacuum-LIGO INDIA
 - Regional or local knowledge through application can be gained by students easily through this curriculum - Specific rotatory power- Applications in sugar industries Photo detectors, Sensor pixels, solar cell and solar panel
 - Value added Courses like WIPO and IIRS-ISRO gives them global perspective and are very much job oriented and application based.
 - Knowledge on topics that are included like- Eyepieces in wide range cameras-view field diameter-intraocular lenses helps them understand current trend, and are application based. Students can take up field work based on these and can gain employment
 - Topics like Physics behind Covid transmission through saliva droplets will enable students to connect basic theory they learnt in School with research.
20. Weblinks and online virtual lab links are given for Theory and Practical courses. This is an excellent initiative, self- explanatory and helps students to connect globally through different platforms .
21. In earlier BOS meetings, it has already been approved that Non major elective papers (NME) can be offered also for students without Physics background in school. The same can be continued and can be offered to the students who belong to other departments also. This can be offered as a basket or to individual departments based on the rules and regulations.
22. Students can take Project work, field work and internship based on their interests, capabilities, needs & availability/ accessibility of time and suitable resources. They can be awarded extra credit credits for their work, based on the recommendations of the Head and as per rules of the College.

23. Result analysis , Examiner list- theory & practical list, co attainment approved by BOS. members .



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Members of the Board who were present for the BOS meeting

Name	Signature
1. Dr.D.Uthra	 6/5/22
2. Dr.G.Anbalagan	 6/5/22
3. Dr.K.Venkatramanan	
4. Dr.P.Vasudevan	 06/5/2022
5. Mr.S.Pradeep Kumar	
6. Dr.Timangshu Chetia	
7. Prof.Devika	 6/5/22
8. Dr.Kumaran	 06/5/2022



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Name	Signature
9. Dr.D.Syamala	
10. Dr.V.Renganayaki	
11. Dr.V.Sangeetha	
12. Dr.D.Sridevi	
13. Ms.D.Pourkodee	
14. Dr. K. Selvakothai Nachiyar	