

RAMNARAIN RUIA AUTONOMOUS COLLEGE, MUMBAI-19

Minutes of the meeting of the Board of Studies in Physics

Date: 23/08/2019

Time: 11 am to 2pm

Venue: Department staff room (g14)

Members Present:

Sr. No.	Name	Institution
1.	Dr. Vijay Mayekar	<u>Ruia college</u>
2.	Dr. R.R. Deshmukh	<u>ICT, Mumbai</u>
3.	Dr. Mohan Narayan	<u>ICT, Mumbai</u>
4.	Dr. Vaibhav Prabhudesai	<u>TIFR, Mumbai</u>
5.	Dr. Rajendra Rathi	<u>Ruia college</u>
6.	Dr. Pratap Patil	<u>Ruia college</u>
7.	Dr. Nana Pradhan	<u>Ruia college</u>
8.	Mr. Bhupesh Mudhe	<u>Ruia college</u>
9.	Mrs. Reshma Kajrolkar	<u>Ruia college</u>
10.	Ms. Rajrajeshwari S. Nethi	<u>Ruia college</u>
11.	Ms. Sneha Nandi	<u>Ruia college</u>

Agenda Item No. 1: To revise, if needed, and pass the syllabus for FY/SY/TY BSc and MSc - (Even semesters) classes

DISCUSSED THAT:

FYBSc. Semester 2 : Paper 201

- Additional reference for mechanics & thermodynamics by Dipan Ghosh, Bavasraju
- Additional reference for mathematical methods by Mary Boas

FYBSc Semester 2 : Paper 202

- All Okay

SYBSc Semester 4 : Paper 401

- All Okay

SYBSc Semester 4 : Paper 402

- Additional reference for Quantum Mechanics by Richard Liboff

SYBSc Semester 4 : Paper 403



TYBSc Semester 6 : Paper 601

- Changes in Units : 1st Unit Lagrange's , 2nd Unit Central Force , 3rd Unit kinematics
- Additional reference for Non linear mechanics by P.V. Panat, Classical Mechanics

TYBSc Semester 6: Paper 602

- All Okay

TYBSc Semester 6: Paper 603

- Add angular momentum topic in Unit 4
- Additional reference D.H. Parkins for Elementary particles

TYBSc Semester 6: Paper 604

- All Okay

TYBSc Applied Component Semester 6 : Paper ACEI601

- **Need to change syllabus as material science is current subject of research, hence** Current subject of nanomaterials introduced to TYBSc students for new choice of research
- And Electronics is already present in the TYBSc curriculum as a separate paper. Many of the electronics topics covered in SYBSc and FYBSc syllabus too.
- Add hydrogel topic in unit 4
- Use Autoclave technique to synthesis nanoparticle using hydrothermal method.

MSc. I Semester 2

- All Okay

MSc. II Semester 4

- All Okay

RESOLVED THAT

FYBSc (Sem II) : Numerical problems helps in understanding the subject.

SYBSc (Sem IV) :

- a) Numerical problems helps in understanding the subject
- b) Suggestion accepted and included in syllabus 2019 – 20
- c) BOS accepted and modification in syllabus 2019 – 20 done.
- d) Inclusion accepted by BOS.

TYBSc (Sem VI) :

- a) Accepted suggestion and include it in syllabus 2019 – 20
- b) Numerical problems help in understanding the subject.



TYBSc Applied Component paper – (RUSACEI601)

- a) Old Unit 1 : Digital Electronics
- b) Old Unit 2 : 8085 microprocessor and basic assembly language programming – I
- c) Old Unit 3 : Basic assembly programming – II and 8255PPI
- d) Old Unit 4 : Basic concepts of object oriented programming in C++

Changed to :

- a) New Unit 1 – Basic concept of object oriented programming & C++
- b) New Unit 2 – Tokens & expressions in C++
- c) New Unit 3 – Analysis techniques – II
- d) New Unit 4 – Some special Nanomaterials

Title changed from “Electronic Instrumentation” to “Programming in C++ and Nanomaterial – II”

RESOLVED THAT- Accepted

Agenda Item No. 2: To decide on the changes in the modalities of assessment, is any, which includes the question paper pattern, for internal and external examination.

DISCUSSED THAT

- a) Examination pattern 60:40 (theory and practicals), marks distribution scheme, 60% internal option.
- b) Dr. Deshmukh discussed about project and assignment-based learning and teaching learning feedback. Question paper should balance.

RESOLVED THAT- Accepted

Resolution Agenda Item No. 3: To approve the Certificate Courses with syllabi, duration, costing and evaluation, if any.

Agenda Item No. 4: Any other matter with permission of the Chair

DISCUSSED THAT

- **Discussion of TYBSc Applied Component Sem 5 and SYBSc practicals of Sem 3.**
 - 1) Dr. V. Mayekar brief Dr. V. Prabhudesai about last BOS meeting
 - 2) Dr. P. Patil discussed that the TYBSc AC Unit 1 & 2 are too lengthy so teacher could not complete it in given allotted lectures.
 - 3) Dr. P Patil suggested to remove some part from the same as Analog voltmeter, instrumentation amplifier, Boost & bust power supplies.
 - 4) Dr.Deshmukh discussed about project and assignment based learning and teaching learning feedback. Question paper should balance.



- 5) Dr. Prabhudesai discussed about TYBSc AC EI practical's and theory and Conclude that students need self-study, project and assignment so that it will help class room teaching.
- 6) All discussed about separate Nanomaterial and Electronic Instrumentation electives for next academic year.
- 7) Dr. N. Pradhan discussed that the SYBSc Paper2 unit 3 from Sem 3 is too lengthy so teacher could not complete it in given allotted lectures.
- 8) Dr. N. Pradhan suggested to remove some part from the same as counters and 555 timers. All are agreed on it.
- 9) Dr. N. Pradhan discussed that SYBSc Sem 3 practicals : Per Sem practices are 21. University changed it to 12.
- 10) Question Paper discussion:
Questions should be Set wrt JAM, GATE papers

For assignment give problems based on theory that taught in class or give old type exam for 20M instead of assignment. Can do flip the classroom.

RESOLVED THAT

- 1) All BOS members agreed to partially remove some part of TYBSc AC EI Sem 5 Unit 1 & 2. But do not keep that part untouched. Give brief idea about the same to the students.

Changes according to Annex: A

- 2) All agreed that if students are coming thrice a week, then make it minimum 18 practicals + 04 skills
- 3) Question Paper discussion:

For assignment give problems based on theory that taught in class or give old type exam for 20M instead of assignment. Can do flip the classroom.

Thanks giving by HoD



Dr. Vijay Mayekar

Head,

Department of Physics



RAMNARAIN RUIA AUTONOMOUS COLLEGE

DEPARTMENT OF PHYSICS

06/04/2020

BOS MEETING (On ZOOM Online Platform)

Minutes of Meeting

Session I (11:00AM – 11:40AM)

Members Present:

Sr. No.	Name	Designation
1.	Dr. Vijay Mayekar	Head, Dept. of Physics, Ramnarain Ruia Autonomous College
2.	Dr. Rajendra Rathi	Assistant Professor
3.	Dr. Pratap Patil	Associate Professor
4.	Dr. Nana Pradhan	Associate Professor
5.	Mr. Bhupesh Mude	Assistant Professor
6.	Mr. Onkar Ramdasi	Assistant Professor
7.	Ms. Rajarajeshwari Nethi	Assistant Professor
8.	Ms. Sneha Nandi	Assistant Professor
9.	Mr. Devendra Chavan	Assistant Professor
10.	Dr. Suhas Asgekar	Associate Professor, Textile & Engineering Institute, Ichalkaranji, Shivaji University
11.	Dr. Vedawyas Mangasuli	General Manager, R&D, Modison Metals Ltd., Gujarat
12.	Dr. Mohan Narayan	Associate Professor ,Head, Dept. of Physics, ICT, Mumbai
13.	Prof. Rajendra Deshmukh	Registrar , Professor, Dept. of Physics, ICT, Mumbai
14.	Dr. Vaibhav Prabhudesai	Associate Professor, TIFR, Mumbai

15. Observer- Dr. Sucheta Ketkar , Vice Principal, Ramnarain Ruia College

****Introduction & Welcome by Dr. Vijay Mayekar, HOD.**

Agenda 1 – To approve revised syllabus for FY/SY/TY for Odd semester classes – Theory and Practical.

1.1 TYBSc: Theory papers

- 1) **RUSPHY501**- Earlier syllabus accepted with no change in content.
- 2) **RUSPHY502**(Solid State Physics):- some repetitive topics including crystallography are removed as they were covered in lower classes.
- 3) **RUSPHY503** - Earlier syllabus accepted with no change in content.
- 4) **RUSPHY504**(Electrodynamics):- Addition of advanced Image problems Green theorems, Green function in syllabus with additional reference book: **Classical Electrodynamics by Walter Greiner** .
- 5) **RUSACEI 501** - Earlier syllabus accepted with no change in content

1.2 SYBSc: Theory papers

- 1) **RUSPHY301**- Earlier syllabus accepted with no change in content.
- 2) **RUSPHY302** - Earlier syllabus accepted with no change in content.
- 3) **RUSPHY303** - Earlier syllabus accepted with no change in content.

1.3 FYBSc: Theory papers

- 1) **RUSPHY101**: Addition in syllabus of following :Kinetic energy, Work energy and work- energy theorem, Calculation of work done.
- 2) **RUSPHY102**- Earlier syllabus- accepted with no change in content.

1.4 Practical:

1.4.1-In TYBSc practical Syllabus

(Physics- RUSPHY501, RUSPHY502 and Applied component (EI) RUSACEI 5P1):- Earlier syllabus Accepted as it is.

1.4.2-In SYBSc practical Syllabus (RUSPHY03):- Following Changes

A. Three new practical were added –

1. Determination of moment of Inertia of Flywheel
2. Determination of Specific heat of Graphite.
3. Common emitter transistor(NPN) amplifier

B. Three experiments were removed

1. Transistorized Bistable Multivibrator- theory is done in TYBSc

2. Counters Mod 2, 5, 10-Not in theory (SYBSc)
3. Understanding UV-VIS spectra of protein-difficult for large group

C. Soldering – Skill experiment is shifted to TYBSc, required for TYBSc lab-work

D. For Journal certification, minimum requirement - 9 Skill experiments (3 in each group) & 15 Main experiment (5 in each group) were approved.

1.4.3 In FYBSc practical Syllabus (RUSPHYP01):-:- Earlier syllabus Accepted as it is.

Agenda 2 – Changes in Modalities of Assessment:

Internal Practical Modalities:

Proposed Marks Distribution:

Working Journal – 5Marks

Continuous Evaluation – 8Marks

Main Journal – 7Marks

Total = 20Marks

- VP Ketkar Mdm suggested weightage given to journal should be reduced compared to continuous evaluation and Working Journal & Continuous Evaluation can be combined under one title.
- Dr. Vijay Mayekar clarified – Continuous evaluation includes how the students are performing on a daily basis in the laboratory, Working Journal has the presentation of the work done on the same day.
- Dr. Vaibhav Prabhudesai suggested that Working journal must be a part of Continuous Assessment
- Dr. Vedawyas suggested that Working journal has only performance data, whereas in the Main journal, the student has to include the analysis part of the experiment performed as well, which should carry some extra marks.
- Dr. Pratap Patil said that the students never do any analysis. Very few or never are the analysis done by the student.

- Dr. Vedawyas – Analysis should be a part of the assessment as it shows how much the student has understood the experiment. Hence it must be there and marks must be allotted for the same, they should do on their own. The analysis will also help the students in their interviews in future, where they are asked about the experiment performed, in detail.
- Dr. Rajendra Rathi said that the analysis should be incorporated in the Main Journal. The student must also know the application of the experiment which he/she has performed.
- Dr. R. R. Deshmukh and Dr. Mohan Narayan both suggested that Working journal should be a part of continuous assessment, and certain marks should be reserved for analysis
- BOS members accepted following suggestions
 - 1) Combining both Working journal and Continuous Assessment part under one single title for all the three years of UG.
 - 2) The analysis should be incorporated in the Main Journal. The student must also know the application of the experiment which he/she has performed.
 - 3) For SYBSc Practical Internal examination:-Each group has 8 experiments (5 regular and 3 skill),

Accepted Marks Distribution for SYBSc

Continuous Evaluation – 12Marks (1.5 Marks/experiment)

Main Journal – 8 Marks (1 Mark /experiment)

Total = 20Marks

-----**Break –(11.40-11.55 AM)**-----

06/04/2020

BOS-Meeting---Session II (11:55AM – 12:35PM)

Members Present:

Sr. No.	Name	Designation
1.	Dr. Vijay Mayekar	Head, Dept. of Physics, Ramnarain Ruia College
2.	Dr. Pratap Patil	Associate Professor
3.	Dr. Nana Pradhan	Associate Professor
4.	Mr. Bhupesh Mude	Assistant Professor
5.	Mr. Onkar Ramdasi	Assistant Professor
6.	Ms. Rajarajeshwari Nethi	Assistant Professor
7.	Ms. Sneha Nandi	Assistant Professor
8.	Mr. Devendra Chavan	Assistant Professor
9.	Dr. Suhas Asgekar	Associate Professor, Textile & Engineering Institute, Ichalkaranji, Shivaji University
10.	Dr. Vedawyas Mangasuli	General Manager, R&D, Modison Metals Ltd., Gujarat
11.	Dr. Mohan Narayan	Head, Dept. of Physics, ICT, Mumbai
12.	Prof. Rajendra Deshmukh	Registrar & Professor, Dept. of Physics, ICT, Mumbai
13.	Dr. Vaibhav Prabhudesai	Associate Professor, TIFR, Mumbai

Dr. Rajendra Rathi could not join because of failure of Internet connectivity.

Agenda 2 – Changes in Modalities of Assessment(continued)

Pattern of the Internal Test (Theory):

Dr Vijay Mayekar explained reason for change in pattern. At present, National level competitive exams are based on objective assessment (Multiple Choice Questions). To give our students more practice, the internal test question paper have been designed for more focus on MCQs.

Pattern Proposed:

Q.1) MCQs – 20 Questions (1/2 mark each) – 10M

Q.2) Numerical (Any 2 out of 4) – 06M

Q.3) Numerical (Any 1 out of 2) – 04M

Total = 20Marks

- Dr. Deshmukh suggested that in Q.2, 100% option must not be given, it should be changed to **Any 2 out of 3**. 100% option is too much, for less portion. If 100% option is given, the students might skip a chapter while studying
- Dr. Mayekar answered that , the internal test is conducted in the month of August or early September, and lectures start from second week of June. 50% of the Syllabus get completed by the time of internal test. And our other question paper follows 100% option for each question.
- Dr. Pratap Patil – According to university guidelines, we must have 100% option, but being an autonomous body, we are free to change the pattern. complete unit is given in the internal class test, hence no chance of skipping a chapter. Opted choice of “ for Any 2 out of 4”
- Dr. Nana Pradhan – Internal Test has a very small syllabus. 3 units are not given in Internal Class test. Opted choice of “ for Any 2 out of 3”
- Dr. Mayekar – Syllabus get covered till Internal Test is minimum 2 units for SYBSc and FYBSc and In case of TYBSc its 2 and ½ units
- Mr. Bhupesh Mude – We should stick to “Any 2 out of 4” as we follow 100% option.
- Dr. Mayekar – 100% option is followed for the semester paper too, hence we must follow the same pattern here too, and there is a sufficient time to complete two units out of three for SYBSc and 2 units out of four for TYBSc before the internal class test.

The proposed option –“any 2 out of 4” was accepted by all the members present, after this discussion.

Agenda 3 – To approve online certificate courses – SWAYAM/NPTEL and other platforms:

Dr Vijay Mayekar – Put forward necessity of Online Courses on Students have already enrolled for some courses on Swayam platform. He then suggested few online courses-

1. Introduction to Atmospheric and Space Sciences (TYBSc)
2. Quantum mechanics (SYBSc)
3. Experimental Physic(FY,SYTY)
4. Physics of Biological Systems(TY, MSc)

5. Course of basic thermodynamics (FYBSc)

- Some more courses will be forwarded by Dr. Vaibhav Prabhudesai.
 - Dr. Deshmukh – Will the students get any extra marks or credits or certificate for these courses?
 - Dr. Mayekar –Certificate examinations are conducted at the end of 4-6-8 week course on Swayam platform. These courses are not reflected in the Mark sheet and students do not get extra marks. They get extra non academic credits.
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Agenda 4 – To review the Feedback of students on Curriculum from TYBSc students:

Dr Mayekar placed on record; feedback received from TYBSc students on the curriculum as follows, and explained what are the necessary steps taken to address the points raised by students.

1. Instead of Synthesis of Nanomaterials, Application should be included.
 - Synthesis should be learned before Application ,basics are taught at SYBSc level and synthesis practicals are taught at TYBSc level in applied component subject.
2. Electronics is satisfactory just lack the synchronisation in theory and practicals, taught in different years.
 - Synchronization has been done in this revision of syllabus by Changing positions of practicals (are kept in same year where theory is taught.)
3. Use of software like Origin and Excel for observations, calculations and graph purposes can be taken up to save time and precision
 - Origin software have been used for difficult experiments like thermal diffusivity of brass in TYBSc.
 - Utility of Excel is showed to students and asked them to attach printouts in main journal.
4. Crystallography part repeated at SYBSc and TYBSc (Solid State Physics), repetition should be removed.
 - In this revision of syllabus, “Crystal structure” removed from TYBSc.
5. Applied physics can be used to introduce topics like computational physics-also can help student with the programming skills

- Though programming language C++ is taught in the applied component, many students do not opt for that.
 - Computational Physics introduction in Applied Physics, can be done in next revision of the Syllabus.
6. Atomic & Molecular Physics should be taken down to SYBSc level.
- Difficulty level is high for sem 3
7. Gauss Law had been learned in 12th class, and later taken up only in TYBSc level, hence can be shifted to SYBSc level, along with Gradient, Divergence, Curl.
- In TYBSc gauss law's applications in three different coordinate systems (Cartesian, Spherical Polar, and Cylindrical polar) are learned which is too high for SYBSc class.
 - Vector calculus and vector algebra is taught at SYBSc level.
8. Feedback on Practical: Electronics practical are more in number compared to the physics practicals in Syllabus.

FYBSc – 15Physics + 7 Electronics

SYBSc – 21Physics + 20 Electronics

TYBSc – 20Physics + 16 Electronics

We are trying to reduce the number of repetitive Electronics experiments. In due course, more Physics experiment will be there maintain balance between them.

Dr. Pratap Patil – We have TYBSc Applied component and MSc in electronics in our college, hence care should be taken while reducing the electronics experiment.

Dr. Vijay Mayekar – Yes agreeing to Patil sir, there must be optimum number of electronics in syllabus. Only repetitive electronics experiments will be removed (like Multivibrator experiments).

Agenda 5 – Review Question Papers of previous exams and comparison with the University Question papers

RUSPHY504 – Electrodynamics Question paper RUSPHY504 discussed by BOS members.

1. Question paper has a uniform distribution of Theory and its application. Its rubric was discussed as types of questions been asked.

- Q1) – Knowledge , Comprehension and Application
- Q2) – Synthesis and Application
- Q3) – Analysis, Synthesis, Knowledge
- Q4) – Synthesis, Analysis, Knowledge
- Q5) – Comprehension, Application, Synthesis, Analysis and Evaluation.

2. Option within single syllabus unit as one full question is based on single units
3. Q.4(FY/SYBSc) is split into sub-questions- Q.4)A)B)C) , and Q.5 (TYBSc) is split into sub-questions Q.5)A)B)C) D) Each sub-question is based on one unit and option is given within this sub-question.
4. Marks are equally distributed between 3 units (FY/SYBSc) and 4 units (TYBSc).
5. Option between units is not given, so that student cannot be given advantage of skipping study of entire syllabus unit for the examination.

- Dr. Mohan Narayan – Is 100% choice needed?
- Dr. Vedavyas – Fine with this pattern. Since electrodynamics is difficult, choice is needed.
- Dr. Vaibhav Prabhudesai – Care must be taken that the choice (Option) must be from the same unit, not from different units. No options should be given across the unit.

All the members concurred that present QP pattern is good and standard of questions are good as per requirement of the syllabus.

Due to time constraint, BOS members asked for 2-3 days' time, for review of other QP with reference to Syllabus. They said that they will communicate after a couple of days to chairman.

Chairman concluded BOS meetings on successful conduction of BOS Meetings, thanked all the BOS members for cooperation and active participation

On Date 9th Aril 2020, following communication received from BOS members.

Dr. Vedvyas -I have reviewed the QPs. More or less they seem to be okay. I am of the opinion though that the comprehension part can be reduced and more

emphasis given to analysis and application. The choices should be within the unit and not between the unit.

Dr. Suhas Asgekar- Herewith I am sending my opinion about the question paper format:

1) The format of question paper is such that adequate care is taken in giving the justice to the contents of the course.

2) As far as the marking scheme is concerned due weightage is given to the questions of different categories.

In all the format of question paper is good and I completely agree with the format.

Dr Mohan Narayan and prof. Rajendra Deshmukh

Dear Prof. Mayekar, I (**Dr Mohan Narayan**) and Prof. Deshmukh have gone through the various question papers sent to us. This mail is on behalf of both of us.

The pattern of the question papers is good and the distribution of the questions according to various levels of difficulty is also well taken care off. The syllabus is also adequately covered.

On Date 10th Aril 2020, following communication

Dr. Vaibhav Prabhudesai- I have now gone through all the question papers that you shared with me. I find them to be well balanced and at a reasonable difficulty level. The distribution of the questions over various subgroups is satisfactory. I have also seen that in all the question papers a student gets 100% choice to answer the question. Although I have found that all the questions are so selected and grouped that in order to obtain full marks one cannot skip any subgroup from the portion covered. I insist this practice be followed strictly in future examinations.



Dr. Vijay Mayekar

Head, Department of Physics

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