RAMNARAIN RUIA AUTONOMOUS COLLEGE, MUMBAI-19

Dept of Bioanalytical Sciences

Minutes of the meeting of the Board of Studies in Bioanalytical Sciences

Date: 29.09.2022

Time: 11:30 am to 12:30pm

Venue: N213 and online google meet (Hybrid mode)

Members Present:

Sr. No.	Name
1.	Dr. Krishnapriya Mohanraj
2.	Dr. Sachin Palekar
3.	Dr. Ajit Datar
4.	Dr. Vinay Kumar Malik
5.	Mr. Subodh Chavan
6.	Dr. Sanket Bapat
7.	Ms. Sujata Suvarnapathki
8.	Ms. Saee Joshi
9.	Dr. Sandhya Menon
10.	Dr. Nandini Girish
11.	Dr. Madhura Dhavale
12.	Ms. Anushka Joshi
13.	Ms. Sayali Kadge
14.	Ms. Dhanashree Dharap
15.	Ms. Gauri Risbud
16.	Ms. Monali Thorat

Palekar

RAMNARAIN RUIA COLLEGE ESTD. 1937 MUMBAI

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authenticity of this document
Location:
Signing Date:09.11.2024 16:13

Agenda 1: To seek approval for the changes in the modalities of assessment, if any, which includes the question paper pattern, for internal and semester end examination and the assessment of Semester End examinations (Theory/Practical, wherever applicable).

Discussed that: There are no changes in the existing pattern of the modalities of assessment.

Resolved that: NA

Agenda 2: To seek approval for the new Post Graduate Programmes (if applicable) for the academic year 2023-24 and approve the syllabus for the same.

Discussed that: There is no new graduate program introduced.

Resolved that: NA

Agenda 3: To seek approval for the Eligibility for the admission to Post Graduate programmes (If applicable)

Discussed that: There is no change in the eligibility for the admission of post graduate programmes.

Resolved that: NA

Agenda 4: To seek approval for the new certificate courses (for 2023-24), if any.

Discussed that: There is no new certificate course introduced.

Resolved that: NA

Agenda 5: To seek suggestions for the implementation of NEP2020 with reference to the inclusion of the following features i) Four Year Undergraduate Program ii) Indian Knowledge System iii) Multidisciplinary/Trans-disciplinary approach iv) Vocational Courses v) Industry academia collaborations vi) Internships.

Discussed that:

i) Implementation of 4-year degree program:

1. University guidelines regarding this program are yet to come.
2. Theory component may be reduced to some extent to increase research component in a 4-year degree program.
3. Option of exit after 3rd year is kept open. However, caution should be taken, as it should not affect employability of students who take exit after 3rd year.

ii) Implementing Indian Knowledge System in education

1. Indian (ASU) systems of medicines are already incorporated in the UG syllabus. More emphasis should be given on research projects based on ethnobotany that include extraction of pigments, dyes and pesticides.
2. Syllabus topics related to Indian knowledge system should be highlighted in the syllabus copy.

iii) Multidisciplinary/Transdisciplinary approach

1. Foundation course for UG and Ability Enhancement Compulsory Course (AECC) for PG is incorporated in the syllabus.

iv) Industry academia linkage and skill development

1. Industry projects based on method development, method validation and product development should be given to students.
2. Faculty members should undergo training sessions on advanced instrumentation in industry.
3. Skill development components include basic instrumentation for F.Y., advanced instrumentation for S.Y. and Entrepreneurship skills for T.Y. students.

Resolved that:

1. We should wait for clear guidelines from the university for 4-year degree program. More brainstorming is required to design the curriculum and implement research component for a large number of students.
2. Industry projects and Alumni insight sessions are already being conducted to facilitate industry-academic linkage and alumni interaction.
3. Other suggestions regarding syllabus design as per NEP2020 are taken into consideration and will be incorporated as appropriate when Mumbai University guidelines are received

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Dr. Sachin Palekar

Head, Dept. of Bioanalytical Sciences

Ramnarain Ruia Autonomous College

Head.
Department of Bioanalytical Science
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Matunga, Mumbai-400 019.

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RAMNARAIN RUIA AUTONOMOUS COLLEGE, MUMBAI-19

Dept of Bioanalytical Sciences

Minutes of the meeting of the Board of Studies in Bioanalytical Sciences

Date:17.04.2023

Time: 11:30 am to 12:30pm

Venue: e-Meeting via Google Meet platform

Members Present:

Sr. No.	Name	Signature
1.	Dr.Krishnapriya Mohanraj	
2.	Dr. Ajit Datar	
3.	Dr. Sujata Suvarnapatki	
4.	Dr. Sachin Palekar	
5.	Dr. Vinay Kumar Malik	
6.	Dr. Sanket Bapat	
7.	Dr. Subodh Chavan	
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Minutes of Meeting

Agenda 1:

To seek approval for the changes in the syllabus for S.Y.B.A./B.Sc./B.VOC. /BACM and T.Y.B, A./B.Sc./B.VOC. /BACM. And MA/MSc. wherever applicable.Discussed that:

Discussed that:

1. There are no changes in F.Y.B.Sc., S Y. B.Sc., and M.Sc. I (Sem VII, VIII, I, II) syllabi.

2. **Skill enhancement courses** are proposed for S. Y. B.Sc.- **Computational Sciences I (Sem III) and Tools and techniques in biology (Sem IV)**

3. **Ability enhancement courses** are proposed for S. Y. B.Sc.- **Ethics in Science (Sem III) and Research Methodology (Sem IV)**

4. The proposed changes with the credits systems are as follows:

Semester	Courses	Title	Credits Theory	Credits Practical
3	Core I	Biological Sciences III	3	2
	Core II	Biological Sciences IV	3	
	Core III	Chemical Sciences III	3	2
	Core IV	Chemical Sciences IV	3	
	Core V	Statistics I	2	
	Skill Enhancement Course	Computational Sciences I	2	2
	Ability Enhancement Course	Ethics in science	2	
4	Core I	Biological Sciences III	3	2
	Core II	Biological Sciences IV	3	
	Core III	Chemical Sciences III	3	2
	Core IV	Chemical Sciences IV	3	
	Core V	Statistics II	2	
	Skill Enhancement Course	Tools and techniques in Biology	2	2
	Ability Enhancement Course	Research Methodology	2	

Proposed Changes S. Y. B.Sc. (2023-24)
Ethics in science

Unit	Details	No of Lectures
I	**The role of ethics in science** • Concept of ethics, values and morals • Importance of Ethics in science • Ethical Principles: Honesty, objectivity, integrity, carefulness, openness, Transparency, Accountability, intellectual property, confidentiality, Responsible Publication, respect for colleagues, Social responsibility	10
II	**Practicing Ethics in Science & Technology** • Ethics of methods and process • Ethics of topics and findings • Mistakes versus misconduct • Everyday ethical decisions • Enforcing ethical standards	10
III	**Ethical in Scientific Research** • Promoting Ethical Conduct in Science • Ethical Rules in Science, • breach of ethics in Science	

Proposed Changes S. Y. B.Sc. (2023-24)

Tools and Techniques in Biology

Unit	Details	No of Lectures
I	**Advances in Microscopy:** • Phase Contrast Microscopy • Principle, working, advantages, disadvantages and applications of Scanning Electron Microscopy, Transmission electron Microscopy • Sample preparation for Microscopic studies (Special emphasis on SEM/TEM)	10
II	**Electrophoresis:** • Basic Principles of Electrophoretic Separation, Support media in electrophoresis • Instrumentation and types of Electrophoresis • Agarose Gel Electrophoresis • Polyacrylamide gel electrophoresis and its types • Applications	10
III	**Principles of clinical biochemistry** • Basis of analysis of body fluids for diagnostic, prognostic and monitoring purposes • Clinical Measurements & Quality Control • Examples of biochemical aids to clinical diagnosis	10

Proposed Changes S. Y. B.Sc. (2023-24)

Research Methodology

Unit	Details	No of Lectures
I	**Introduction to Research methodology** • Research: A Way of Thinking • Meaning, objective and motivation of Research • Types of research	10
II	**The Research Process** • Planning and conduct of research • Formulating a research problem	10
III	**Conceptualising a Research Design** • Definition of Research Design • Features of a good Research Design • Need of Research Design • Important concepts in Research Design	10

5. Discipline specific electives (DSE)are incorporated for Integrated M.Sc. Sem X and regular M.Sc. Sem IV as follows.

DSE I (RPSBAS1003/403) - Biopharmaceutical and Biosimilars.

DSE II (RPSBAS1003/403) Xenobiotic Analysis

6. The proposed syllabi for DSEs are as follows:

Proposed Changes M.Sc. II(2023-24)

RPSBAS1003.1- Biopharmaceuticals & Biosimilars

Unit	Details	No of Lectures
I	**Introduction to Biopharmaceuticals & Biosimilars** • Therapeutics based on biotechnology • Current status of Biopharmaceutical Industry • Biopharmaceutics Classification System, Types of Biosimilars	15
II	**Biopharmaceuticals : Development and Regulations** • Development of Biopharmaceuticals • Pharmacology, Toxicology, Therapeutic Dosage Formulations, and Clinical Response • Regulatory Aspects (United states & Japan)	15
III	**Biosimilars: : Development and Regulations** • Need for Biosimilar development • Understanding Small vs. Large Molecules • Scientific Factors in Biosimilar Product Development • Non clinical and Clinical studies • Biosimilar Regulatory Challenges	15
IV	**Analysis of Biopharmaceuticals and Biosimilars** • Analytical methods for analysis of Biopharmaceuticals and Biosimilars • Structural and functional characterization of Biosimilars using chromatography and spectroscopy • Method Development and validation for Biosimilar and Biopharmaceutical Analysis • Bioanalysis of Biopharmaceuticals and Biosimilars	15

Proposed Changes M.Sc. II (2023-24)

RPSBAS1003.2- Analysis of Xenobiotics

Unit	Details	No of Lectures
I	**Introduction to Xenobiotics** • Xenobiotics and their types • Environmental impact of xenobiotics, bioremediation • Volatile organic compounds • Pharmaceutical Xenobiotics and their biotransformation-Phase reactions	15
II	**Metabolites of pharmaceuticals** • Methods for metabolite generation • Isolation and identification of drug metabolites • Structural elucidation of drug metabolites using NMR • Safety testing of Drug metabolites	15
III	**Analysis of Xenobiotics in biological and environmental matrices** • Application of accelerated solvent extraction and micro extraction techniques in the analysis of organic contaminants, bioactive and nutritional compounds • Analysis of small molecule drugs in Biological fluids • Capillary electrophoresis in the analysis of drug and drug products • Immunoassays in drug analysis.	15
IV	**Mass spectrometry of Xenobiotics** • Quantitation of Biomarkers and Metabolites using LC-MS and LC-MS/MS • Quantitation of Biomarkers and Metabolites using HPTLC-MS and GCMS • Impurity profiling of drug and drug products • Trends in pesticide and residual solvent analysis • Rapid analysis of pharmaceuticals and excreted xenobiotic and endogenous metabolites	15

7. Few modifications are made in the core subjects of M.Sc. (Sem III/IX and Sem IV/X) courses. The modified syllabus along with credits for these semesters is as follows:

Semester	Paper Title	Unit I	Unit II	Unit III	Unit IV
III/IX	Molecular Biology and OMICS	PCR and Recombinant DNA technology	Genomics & Pharmacogenomics	Transcriptomics	Proteomics and Metabolomics
	Modern Analytical Techniques	Thermal Analysis	XRD and XRF	Chiral Chromatography	CD-ORD
	Bioanalytical Techniques	Introduction to Mass Spectrometry	Advances in Mass Spectroscopy	NMR and its applications in Bioanalysis	Structural Elucidation by FTIR, MS and NMR
	Internship/Research Project				
IV/X	Clinical Research Industry	Design and Conduct of Clinical Study	Bioavailability and Bioequivalence	Clinical Data Management	Pharmacovigilance (10) and Therapeutic Drug Monitoring (05)
	Pharmaceutical Method Development and Validation	Analytical Method Development (AMD) and Analytical Method Validation (AMV)	Bioanalytical Method Development (BMD) and Bioanalytical Method Validation (BMV)	Method Development and Validation in HPTLC, GC, GC-MS	Method Development and Validation in LC, LC-MS
	RPSBAS1003: Biopharmaceuticals & Biosimilars	Introduction to Biopharmaceuticals & Biosimilars	Biopharmaceuticals : Development and Regulations	Biosimilars: : Development and Regulations	Analysis of Biopharmaceuticals and Biosimilars
	RPSBAS1003: Xenobiotic Analysis	Introduction to Xenobiotics	Metabolites of pharmaceuticals	Analysis of Xenobiotics in biological and environmental matrices	Mass spectrometry of Xenobiotics
	Internship/Research Project				

Resolved that:

1. These changes in the syllabi are approved by the BOS committee members.

2. There was a suggestion to include scientific communication in S.Y. B.Sc. research methodology paper which will be incorporated as appropriate.

Agenda 2: To seek approval for the Swayam Courses identified by the department.

Discussed that: No new courses were introduced.

Agenda 3: Any other matter with the permission of the Chair.

Discussed that: NA

Head.
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