

Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College Vashi
Department of Bioanalytical Sciences

Program Outcomes (POs):

- PO-1 Disciplinary Knowledge and Skills:** Acquire the comprehensive and in-depth knowledge of various subjects in sciences such as Physics, Chemistry, Mathematics, Microbiology, Bio-analytical Science, Computer Science, Data Science, Information Technology and disciplinary skills and ability to apply these skills in the field of science, technology and its allied branches.
- PO-2 Communication and Presentation Skills:** Develop various communication skills including presentation to express ideas evidently to achieve common goals of the organization.
- PO-3 Creativity and Critical Judgment:** Facilitate solutions to current issues based on investigations, evaluation and justification using evidence based approach.
- PO-4 Analytical Reasoning and Problem Solving:** Build critical and analytical attitude in handling the problems and situations.
- PO-5 Sense of Inquiry:** Curiously raise relevant questions based on highly developed ideas, scientific theories and its applications including research.
- PO-6 Use of Digital Technologies:** Use various digital technologies to explore information/data for business, scientific research and related purposes.
- PO-7 Research Skills:** Construct, collect, investigates, evaluate and interpret information/data relevant to science and technology to adapt, evolve and shape the future.
- PO-8 Application of Knowledge:** Develop scientific outlook to create consciousness against the social myths and blind faith.
- PO-9 Moral and Ethical Reasoning:** Imbibe ethical, moral and social values to develop virtues such as justice, generosity and charity as beneficial to individuals and society at large.
- PO-10 Leadership and Teamwork:** Work cooperatively and lead proactively to achieve the goals of the organization by implementing the plans and projects in various field-based situations related to science, technology and society at large.
- PO-11 Environment and Sustainability:** Create social awareness about the environment and develop sustainability for betterment of the future.
- PO-12 Lifelong Learning:** Realize that pursuit of knowledge is a lifelong activity and in combination with determined efforts, positive attitude and other qualities to lead a successful life.

Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College Vashi

- PSO-1** Establish a foundation of the fundamentals and applications of current advanced analytical techniques and their scientific theory.
- PSO-2** Adapt and practice the Bioanalytical techniques which are most prominently used in current industry trends.
- PSO-3** Justify the professional ethics, attitudes, and behaviors which they learn during Practical and research work and through group activities.
- PSO-4** Inculcate the knowledge that includes Traditional as well as Modern Medicine System, Regulatory bodies in Pharmacy, Pharmacognosy, Clinical Trial and Data Management, Pharmacology, Applied Molecular Biology and Microbiology along with Instrumentation.

Program Specific Outcomes (PSO)s

Student will able to

Course specific outcomes

SEMESTER I

Core I (6 credits) (4 credits for theory +2 credits for practical)

Paper code: PGBAS101

Name of the paper: Different Medicine System of India and Drug Extraction Techniques

The learner will be able to:

1. Choose an extraction technique for the analysis. [III]
2. Describe the principles and practices of ASU. [II]
3. Identify the disease(s) and then compare and decide its management with respect to ASU and Modern drugs. [I], [II], [IV]
4. Summarize the concept of Pharmacognosy. [II]
5. Assess the Herbal raw material and its evaluation. [V]

Core II (6 credits) (4 credits for theory +2 credits for practical)

paper code :PGBAS102

Name of the paper: Drug Act and Quality Management

The learner will be able to:

1. Formulate the documentation required for laboratory work and also prepare SOPs for analytical laboratories. [VI]
2. Associate WHO guidelines with Pharmacopeial standards. [II]
3. Explain and compare the different pharmacopoeias. [II]
4. Summarize the personnel requirements in QA and QC. [V]

**Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College Vashi**

5. Understand the guidelines on stability evaluation and estimate the product's stability. [V]

Core III (6 credits) (4 credits for theory +2 credits for practical)

paper code :PGBAS103

Name of the paper: Chromatography and spectroscopy I

The learner will be able to:

1. Explain the different chromatographic and spectroscopic techniques. [IV]
2. Illustrate the different analytical instruments.[IV]
3. Compare the different chromatographic techniques and choose the appropriate chromatographic separation technique.[II], [IV], [V]
4. Measure the quantity of analyte(s) in sample using chromatographic and spectroscopic techniques.[V]
5. Select the appropriate spectroscopy techniques for sample analysis. [III]

DEC-I (6 credits) (4 credits for theory +2 credits for practical)

paper code :PGBAS104A

Name of the paper: Biomolecules and OMICS

The learner will be able to:

1. Describe the concept of OMICS and its various branches. [II]
2. Calculate the molecular weight of the Biomolecules by electrophoretic techniques. [IV]
3. Compare the classical and modern techniques of electrophoresis.[II], [IV]
4. Classify different types of electrophoretic techniques. [IV]
5. Memorize the guidelines for regulation of the Pollution Control Board for laboratories. [I]
6. Identify the different types of wastes and determine the disposal of Bioanalytical laboratory generated wastes. [I], [III]

DEC-II (6 credits) (4 credits for theory +2 credits for practical)

paper code :PGBAS104B

Name of the paper: Cosmetics and Cosmeceuticals

The learner will be able to:

1. Discuss the basic concept of cosmetics in the Indian market. [II]
2. Classify the different types of cosmetics. [IV]
3. Formulate the different cosmetic products. [VI]
4. Recall the basic Human anatomy relevant to cosmetic application. [I]

SEC (4 credits)

paper code :PGBAS105

Name of the Course: Bioinformatics

The learner will be able:

1. Explain the concept of Bioinformatics. [IV]
2. Enlist the databases and search tools. [I]
3. Summarize the applications of Bioinformatics.[V]

Rayat Shikshan Sanstha's
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4. Describe chemi-informatics. [I]

SEMESTER II

Core I (6 credits) (4 credits for theory +2 Credits for practical)

paper Code: PGBAS201

Name of the paper: Extraction Techniques

The learner will be able to:

1. Explain the principle and working of SPE and SCFE. [III], [IV]
2. Operate the SPE instrument. [III]
3. Distinguish between primary and secondary metabolites in plants. [IV]
4. Recognize the factors affecting the synthesis of secondary metabolites in plants. [I]
5. Give examples of different thermal analytical techniques. [II]

Core II (6 credits) (4 credits for theory +2 Credits for practical)

paper Code: PGBAS202

Name of the paper: Research Methodology

The learner will be able to:

1. Understand various study designs and hypotheses pertaining to research topics. [II]
2. Enlist different methods of data collection. [I]
3. Describe various methods of sampling. [II]
4. Compare the role of different variables in research. [IV]
5. Understand steps involved in processing data. [II]
6. Design research review article [III].
7. Elaborate in details Copyright and Neighboring Rights and Filing Patent Applications [II]

Core III (6 credits) (4 credits for theory +2 credits for practical)

paper Code: PGBAS203

Name of the paper: Chromatography and spectroscopy II

1. Operate the analytical instruments: HPLC, GC, AAS, FT-IR, UV-VIS Spectrophotometer. [III]
2. Observe and correlate TLC and HPTLC. [II]
3. Describe and give examples of different modes of HPLC. [II]
4. Summarize the applications of chromatography and spectroscopy. [II], [IV]
5. Estimate and solve the complications arising during instrumental analysis. [III], [V]

DEC-I (6 credits) (4 credits for theory +2 credits for practical)

paper code : PGBAS204A

Name of the paper: Immunoassays and Clinical Pharmacology

The learner will be able to:

1. Explain the principle and applications of Immunoassays. [I]

Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College Vashi

2. Classify the different steps involved in proteomics. [II]
3. Illustrate and describe the various stages of Drug discovery and development. [I], [IV]
4. Discuss pre-clinical trials in NCE. [II]
5. Interpret ISO 14001, OHSAS 18002 and Red Book data. [II]
6. Calculate carbon credits and carbon footprint. [IV]

DEC- II (6 credits) (4 credits for theory +2 credits for practical)

paper code :PGBAS204B

Name of the paper: Cosmetics and Cosmeceuticals

The learner will be able to:

1. Summarize the FDA guidelines for labeling and packaging of cosmetics.[II]
2. Test the adulterants present in cosmetic products. [V]
3. Formulate the different cosmetic products. [VI]
4. Assess the raw materials used in cosmetic preparations. [V]
5. Distinguish between cosmetics and Cosmeceuticals. [II]

SEC (4 credits)

paper code: PGBAS205

Name of the Course: General Statistics And Biostatistics

The learner will be able:

1. Select the appropriate statistical approach to biological samples. [IV], [V]
2. Classify data collection techniques. [II]
3. Choose the design of statistical experiments. [III]
4. Identify the variations in biological samples and their statistical treatment. [II]
5. Give examples of parametric and non-parametric tests. [II]

Kalyani
HEAD

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