



R. C. Patel Educational Trust's  
**R. C. Patel Arts, Commerce and Science College**  
Shirpur-425405, Karvand Naka, Dist.- Dhule (Maharashtra)  
E-mail - principal@rcpasc.ac.in

**Affiliated to: K. B. C. North Maharashtra University, Jalgaon-425001**

## **Self Study Report (SSR): 2024 (4<sup>th</sup> Cycle)**



**Criteria - 2**  
**Teaching- Learning and Evaluation**

**Key Indicator - 2.6**  
**Student Performance and Learning Outcome**

**Metric No. - 2.6.1 (Q1M)**  
**Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website**

**Submitted to**  
**National Assessment and Accreditation Council, Bangalore**



R. C. Patel Educational Trust's

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Karvand Naka, Shirpur 425405, Dist - Dhule, Maharashtra

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**President**

Hon. Bhupeshbhai Patel

**Principal**

Dr. D. R. Patil

**Date:** 15/06/2024

## Declaration

This is to declare that, the information, reports, true copies of the supporting documents, numerical data etc. submitted in these files is verified by Internal Quality Assurance Cell (IQAC) and it is correct as per the office record.

This declaration is for the purpose of NAAC accreditation of the HEI for the 4<sup>th</sup> cycle assessment period 2018-19 to 2022-23.

**Place:** Shirpur

**Date:** 15/06/2024

**Dr. Sandip P. Patil**

**IQAC Co-ordinator**

**IQAC Coordinator**

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce and Science College

Shirpur, Dist.-Dhule (M.S.) 425405



**Dr. D. R. Patil**

**IQAC Chairman & Principal**

**PRINCIPAL**

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce and Science College

Shirpur, Dist.-Dhule (M.S.) 425405

### **B.Sc.(Microbiology)**

1. Transfer and handle microorganisms using aseptic techniques and instruments
2. Prepare microbiological media and test systems for cultivation and identification of microbes
3. Calibrate laboratory equipment
4. Acquaint with analytical and result communication with learning to interpret the data
5. Acquire laboratory safety skills and emergency procedures
6. Develop ability to handle a bright field light microscope to view and interpret slides.

### **B.Sc.(Biotechnology)**

1. Acquire laboratory safety skills and emergency procedures
2. Calibrate laboratory equipment
3. The interdisciplinary nature of biotechnology leads to develop extra knowledge about various living systems including animal, plant and microbes.
4. Develop proficiency in the theory as well as practical experiments, common equipment and laboratory.
5. Collection and interpretation and presentation of scientific data in proper manner.
6. Applications in medical science, agriculture, industry, proteomics, genomics, metabolomics, bioinformatics, Nano-biotechnology etc.

### **B.Sc.(Physics)**

1. To understand multi core processor & its advantages.
2. Understand the application of various traducers in Industry.
3. Learn the measurement systems & error systems.
4. The practical & technical skill for physics experimentation.
5. To understand the various method to synthesize nanomaterial.
6. Be able to perform structure determination of simple structures.
7. Student learns the concept of wave function.

### **B.Sc. (Chemistry)**

1. To teach the students to use standard laboratory equipment, present instrumentation, and usual techniques to carry out experiments.
2. To teach students to be aware of the safety of oneself and others in the laboratory and be

committed to safe practices in daily life.

3. To teach students to analyze data from experiments.
4. To provide students with some insight into future career prospect in the fields related to Chemistry.
5. Post Graduates will be able to master a wide set of chemical knowledge regarding the fundamentals in the basic areas of the discipline of chemistry such as organic, inorganic, analytical, physical, environmental and polymer chemistry.
6. Students will be able to understand the objective of their chemical experiments, properly carry out the experiments, and appropriately record and analyze the results.

### **B.Sc.(Botany)**

1. To study different process in relation with structure of organism and its environment.
2. To understand mechanism of absorption of water, gases and solutes.
3. To understand growth at various level
4. To know importance and scope of plant physiology.
5. To study plant and plant cell in relation to water.

### **B.Sc.(Zoology)**

1. Outcomes for the Cell and Molecular Biology undergraduate program to demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology
2. Develop understanding on various kinds of research, objectives of doing research, research process, research designs and sampling.
3. Describe and classify Phylum Protozoa to Echinodermata with examples and salient features
4. Describe and classify Phylum Hemichordates to Mammals with examples and salient features.

### **B .Sc. ( Computer)**

1. An ability to apply knowledge of computer science appropriate to the discipline.
2. An ability to apply computer science foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
3. Analyze a complex computing problem and to apply principles of computing and other

relevant disciplines to identify solutions.

4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Apply computer science theory and software development fundamentals to produce computing-based solutions.
6. Acquire and apply new knowledge as needed, using appropriate learning strategies.

## **B.Sc. (Mathematics)**

1. To Understand the Euclidean distance function and appreciate its properties, and state and use the Triangle and Reverse Triangle Inequalities for the Euclidean distance function.
2. To study ability to define and manage data structures based on problem subject domain.
3. To Solve Boundary Value Problems, also problem on Heat-flow semi-infinite bar.
4. To understand the structure of posset and lattice.
5. To represent lattice in diagrammatic form.
6. To understand the terms Maximal element, Minimal element greatest element, least elements.
7. To know normal Subgroups and group isomorphism's.
8. Know Ideals in rings, Quotient Rings and Isomorphism of Rings.
9. To Understand the Improper integrals with finite limit and infinite limit their properties.

## **M.A. (Marathi)**

1. वाङ्मयाचा इतिहास, समीक्षाशास्त्र, ग्रामीण साहित्य, वाङ्मय प्रकार, साहित्यकृतींचा अभ्यास या संबंधित मुलभूत विषयांचे ज्ञान प्राप्त होईल.
2. वाङ्मयाचे सूक्ष्म आकलन व चिकित्सक भाग त्यांच्यामध्ये येईल.
3. विविध अंगांनी भाषा व साहित्य समजून घेतल्यानंतर सर्जनशील लेखनाची प्रेरणा निर्माण होईल.
4. आधुनिक माध्यमांसाठी लेखन, मराठी भाषा आणि कौशल्य विकास, तंत्रज्ञान अशा अभ्यासपत्रिकांच्या माध्यमातून भाषिक कौशल्याचा विकास होईल आणि रोजगाराच्या संधीचे मार्ग खुले होतील.
5. संशोधन पद्धतीचे आकलन होऊन प्रत्यक्ष वाङ्मयीन संशोधनातील पद्धतीचे उपयोजन करण्यास शिकतील.

## **M.A. (Hindi)**

1. To prepare the students with skills to analyze the concept and different theories of Hindi literature and language.
2. To prepare the students for pursuing research or careers in Hindi language and literature and its allied fields.
3. Imbibe the effective communication in both mediums of expression (oral and writing).
4. Continue to acquire relevant knowledge and skills appropriate to professional activities.
5. Create awareness to become an enlightened citizen with commitment to deliver one's responsibilities within the scope of bestowed rights and privileges.

### **Programme Specific Outcomes**

1. To prepare and motivate students for research studies in Hindi language and literature and related fields.
2. To provide advanced knowledge of different theories of Hindi language and literature and empowering the students to pursue higher degrees/research at reputed academic institutions.
3. To nurture analytical qualities or skills, thinking power, creativity through assignments & project works.
4. To assist students in preparing (personal guidance, books) for competitive exams. e.g. NET/SET, Staff Selection Commission, Banking sector/Govt. of India undertakings (Rajbhasha Sahayak or Hindi Officer/ Hindi Translator), School Service Commission etc.
5. To encourage the students for original thinking/thought/decision making.
6. To imbibe the effective communication in both mediums of expression (oral and writing).

## **M.A. (English)**

1. To facilitate students to demonstrate a degree of mastery over the area as per their program of specialization at a level higher than requirements in UG program.
2. To enable students to carry out research/ investigation and development work independently to solve critical problems in their respective field
3. To apply a number of strategies for sorting through the applicability of and connections among a range of scholarly approaches to speculate and reconstruct their previous knowledge
4. To prepare students to produce original scholarship that contributes to knowledge in their respective fields

5. To persuade students to compare and validate previous and contemporary development in their respective field of knowledge to generate remedies for contemporary social situation.

**After completing the program, the students will be able to-**

1. Use strategic connections among approaches to reconstruct their previous knowledge
2. Think and write research proposals/thesis/dissertations independently
3. Employ the strategies to achieve mastery over their program of specialization
4. Create study/reference material to contribute existing knowledge of their domain through research/books
5. Devise remedies for contemporary social issues by associating their knowledge with real situations.

**Programme Specific Objectives (PSOs)**

1. To make students familiar with the areas of research in English Literature.
2. To further skills in students pertaining job opportunities.
3. To enhance students' perception of life through value education.
4. To develop analytical, interpretative and descriptive ability in students.

**Programme Specific Outcomes (PSOs)**

1. Skill based course will hone the skills in students, required for job.
2. The skill based courses can also help the students in having their own startups so that they can create employment.
3. Papers of specialization will motivate students to gain depth in the area so that they can opt for it in their further research.
4. The course flaunts more than twenty four areas of research, so that after completing their PG, the students can opt any one for their Ph.D./ M.Phil.
5. The course caters the need of required qualification for hybrid jobs.
6. Interdisciplinary papers like gender sensitization will provide opportunity to build career in social work.
7. Papers like Film and Literature will open up job avenues like script writer for film, script writer for TV serials.

**M.Sc.(Computer)**

1. Broadly Educated and Versatile - Able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal

and technological challenges.

2. Inspiring and Collaborative - Able to induce and contribute to diverse teams, expertise, and experiences.

3. Innovative - Drives scientific and societal advancement through technological innovation and entrepreneurship.

4. Engaged - Is and remains engaged with the academics, technical and scientific professional communities.

#### **PROGRAMME SPECIFIC OUTCOMES (PSOs):**

1. An ability to apply knowledge of computer science appropriate to the discipline.

2. An ability to apply computer science foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the trade-offs involved in design choices.

#### **M.Com**

1. Student will be able To Understand Human Resource Development.

2. Student will be able To Understand Agriculture, Industry, and services sector in India.

3. Get the insight of the philosophy and framework of financial analysis.

4. Know the important inter-linkages among the items in the financial statements

5. Get equipped with the tools used in analysis, interpretation, and evaluation of performance, profitability and efficiency of the business entities

6. Pursue their career in the arena of accounting information system

#### **M.Sc. (Physics)**

1. The students through high quality of education/study which enables them to succeed in career in which can understanding of physics is relevant.

2. The ability to think logically, to analyze problems and phenomena and to devise explanations or solutions.

3. An appreciation of the role of mathematical modeling of physical phenomena to produce predictions which can be tested against experimental observations.

4. An awareness of the importance of accurate experimentation in the understanding of natural phenomena.

5. The practical and technical skills required for physics experimentation.

6. An awareness of the value and the power of computer based techniques for



experimentation, analysis and presentation and a familiarity in their exploitation.

7. An ability to communicate the concepts and discoveries of physics both orally and in writing.
8. An ability to organize time and meet deadlines.
9. An additional skills resulting from the experience of more extensive project work.
10. An ability to integrate 'Information Communication Technology' with basic concepts of physics to promote relevant education and training.
11. The qualities of adoptability, innovation and dynamism.

### **M.Sc. (Organic Chemistry)**

1. Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their irrelevances in the day-to-day life.
2. Administer the skills in handling scientific instruments, planning and performing in laboratory experiments.
3. Analyze the given scientific experimental data critically and systematically and the ability to draw the objective conclusions.
4. Develop various skills such as communication, managerial, leadership, entrepreneurship, teamwork, social, research etc., which will help in expressing ideas and views clearly and effectively.
5. Model and formulate the real problems and find solution based-on knowledge acquired.
6. To evaluate how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.

### **Program Specific Objectives**

1. Determine molecular structure by using UV, IR, NMR and Mass.
2. Draw mechanism for organic reactions.
3. Learn the basic skills of research.
4. To learn chemistry of natural products and drugs.
5. Study of stereo-chemical aspects of organic reactions.
6. Design the organic synthesis using retro synthesis and synthetic catalyst/reaction.
7. To get laboratory skills of organic synthesis.

### **M.Sc. (Microbiology)**

1. Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
2. Administer the skills in handling scientific instruments, planning and performing in laboratory experiments.
3. Analyze the given scientific experimental data critically and systematically and the ability to draw the objective conclusions.
4. Develop various skills such as communication, managerial, leadership, entrepreneurship, teamwork, social, research etc., which will help in expressing ideas and views clearly and effectively.
5. Model and formulate the real problems and find solution based-on knowledge acquired
6. To evaluate how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.

### **M.Sc. (Biotechnology)**

1. To understand the Basic and applied aspects of molecular biology and plant biotechnology, Biomolecules and Enzymology
2. Administer the skills in handling scientific instruments, planning and performing in laboratory experiments
3. Analyze the Impact of various groups of microbes on earth atmosphere, human, plant and animal health and technology development
4. Develop various skills such as communication, managerial, leadership, entrepreneurship, teamwork, social, research etc., which will help in expressing ideas and views clearly and effectively
5. Model and formulate the real problems and find solution based-on knowledge acquired
6. To evaluate how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.

### **Program Specific Outcomes (PSOs)**

1. Demonstrate an understanding of structure and metabolism of macromolecules, understand the regulation of metabolic pathways and understand the role of microbes in industry, health and environment.

2. Gain proficiency in laboratory techniques in both microbiology and molecular biology and be able to apply the scientific methods to the processes of experimentation and hypothesis testing.
3. Acquire significant knowledge on various aspects related to microbiology including biochemical techniques, immunology, physiology, agriculture, environment, pharmaceutical, molecular biology, applied recombinant DNA technology and technical skills related to microbial metabolites.
4. Learn to work as a team as well as independently to retrieve information, carry out Research investigations and result interpretations.
5. Develop the ability to understand and practice the ethics surrounding scientific Research.
6. Realize the impact of science in society and plan to pursue research.

### **M.Sc. (Mathematics)**

1. Graduates will be able to critically evaluate mathematical arguments, proofs, and conjectures, demonstrate logical reasoning skills.
2. To understanding of advanced mathematical theories, including calculus, algebra, analysis, geometry, and discrete mathematics.
3. To study a mathematical software and programming languages to perform numerical simulations, analyze data, and implement algorithms.
4. To understand Demonstrate ethical conduct in their mathematical research and applications, adhere to professional standards, and recognize the societal implications of mathematical work.
5. To Capable of conducting independent research, including formulating research questions, designing experiments or proofs, collecting and analyzing data, and presenting findings effectively.
6. To communicate mathematical ideas and results clearly and effectively, both orally and in writing, to diverse audiences, including peers, experts, and non-experts.
7. To study ethical conduct in their mathematical research and applications, adhere to professional standards, and recognize the societal implications of mathematical work.
8. To Recognize the importance of continuous learning and professional development in mathematics, and they will be prepared to adapt to new mathematical theories, techniques, and technologies throughout their careers.

### **M.Sc. (Zoology)**

1. To study in Zoology will demonstrate advanced knowledge and understanding of the core concepts, theories, and principles of zoology.
2. To understanding of the diversity, structure, function, behavior, and evolution of animals across various taxonomic groups.
3. To study of equipped with the necessary skills to conduct independent and original research in the field of zoology. They will be able to design and execute research projects, collect and analyze data using appropriate methodologies, and interpret and present their findings effectively.
4. To understanding the advanced critical thinking skills, enabling them to evaluate and analyze complex scientific problems related to zoology.
5. To study of communication skills, allowing them to effectively communicate scientific ideas and research findings to both scientific and non-scientific audiences.
6. To study and develop an interdisciplinary perspective, recognizing the connections between zoology and other scientific disciplines.
7. To study a commitment to lifelong learning and staying updated with advancements in the field of zoology.
8. To understand the importance of conservation and sustainability in the context of zoology.
9. To study conservation strategies, habitat management, and the impacts of human activities on animal populations.
10. To understand contribute to the preservation of biodiversity and the sustainable management of natural resources.

### **M.Sc. (Botany)**

1. Students are able to know the diversity among Microbes.
2. Students get knowledge of systematic, morphology and structure of Bacteria, Viruses, Algae and Fungi.
3. Student study the life cycle pattern of Bacteria, Viruses, Algae and Fungi.
4. Students study the diversity of angiosperms.
5. Students able to compare account among the families of angiosperms.
6. Students know the economic importance of the angiospermic plants.
7. Students study the distinguishing features of angiosperm families.
8. Student study the equipment's used in Microbiology: Spirit lamp, Inoculation Loop, Hot

air oven, Laminar Air Flow (LAF) and Incubator.

9. Study of viruses and Bacteria using Electron Photomicrographs (TMV, Bacteriophage, Cocci, Bacillus, Spirillum Bacteria)

### **B.A. (Marathi)**

1. वाड्मयाचा इतिहास, समीक्षाशास्त्र, ग्रामीण साहित्य, वाड्मय प्रकार, साहित्यकृतींचा अभ्यास या संबंधित मुलभूत विषयांचे ज्ञान प्राप्त होईल.
2. वाङ्मयाचे सूक्ष्म आकलन व चिकित्सक भाग त्यांच्यामध्ये येईल.
3. विविध अंगांनी भाषा व साहित्य समजून घेतल्यानंतर सर्जनशील लेखनाची प्रेरणा निर्माण होईल.
4. आधुनिक माध्यमांसाठी लेखन, मराठी भाषा आणि कौशल्य विकास, तंत्रज्ञान अशा अभ्यासपत्रिकांच्या माध्यमातून भाषिक कौशल्याचा विकास होईल आणि रोजगाराच्या संधीचे मार्ग खुले होतील.
5. संशोधन पद्धतीचे आकलन होऊन प्रत्यक्ष वाड्मयीन संशोधनातील पद्धतीचे उपयोजन करण्यास शिकतील.

### **B.A.(Hindi)**

1. To develop students' competency in grammar
2. To introduce the students with the idea of Hindi literature
3. To acquaint the students with the broader genres of literature in general
4. To develop understanding of literature and reading skill of the students through literature.
5. To develop basic skills of languages
6. To introduce values through literatures

### **B.A. (English)**

1. To develop basic skills of languages
2. To introduce values through literatures
3. To acquaint the students with the particular genres of literature
4. To develop understanding of literature and reading skill of the students through literature.
5. To develop students' competency in grammar
6. To introduce the students with the idea of English literature

### **B.A. (History)**

1. Acquire the knowledge with facts and figures concerned with subjects such as History, Geography, Economics, political science and language.
2. Understand the basic concepts, fundamental principles and various theories in the above mentioned subjects.
3. Realize the importance of literary sources in history in the terms of aesthetic, mental, moral, intellectual development of an individual and accordingly of the society.
4. Analyze the socio-political and the economic conditions in the state and National and International levels.
5. Clear and get placed in lucrative positions for various types of competitive examination.

### **B.A.(Geography)**

1. Demonstrate knowledge of concepts, methods, and theories designed to enhance understanding of the natural world and human society.
2. Communicate the results and significance of their research in both written and oral form
3. Evaluate how historical events have been influenced by, and have influenced, physical and human geographic factors in local, regional, national, and global settings.
4. Examine social and environmental processes, with a particular focus on space and place, critical theory, practical application, analysis and intervention in chosen field within the discipline of Geography
5. Evaluate causes, consequences, and possible solutions to persistent, contemporary, and emerging global issues.
6. Classify processes of environmental change and evaluate the relationship between human beings and their surroundings, bringing to bear knowledge from many disciplines.

### **BCA**

1. Give an introduction about DBMS, data models, a schema, E-R diagram, relational database and benefits of database.
2. Know develop the software project
3. Learn developing methodology of software project and Understand tools and techniques of software engineering
4. Given an introduction to digital computer and their fundamental architectures.

5. Able to define the function units of computer architecture
6. Able to understand the basic programming unit and execution of instruction.

### **BMS(e-Com)**

1. Students will develop awareness of local, national and global management principles and practices.
2. Students will enhance their employability and entrepreneurial skills.
3. A student should become familiar with mechanism for conducting business transactions through electronic means.
4. After completing three years Degree Course – Bachelor of Management Studies (BMS) program, students will develop awareness and understanding of organizational management.
5. Students will enhance their knowledge and professional & communication skills needed to be future managers.

### **B. Com**

1. Learn how to apply soft skills in a wide range of routine social and professional settings.
2. Learn how to employ soft skills to improve interpersonal relationships.
3. Learn how to employ soft skills to enhance employability and ensure workplace and career
4. Student will be able To Understand Present Economic Scenario of Indian Economy.
5. Student will be able To Understand Population & Economic Development.
6. Student will be able To Understand Human Resource Development.