Telangana Social Welfare Residential Armed Forces Preparatory Degree College for Women

PROGRAMME SPECIFIC OUTCOMES (PSOs)

B.Sc. Life Sciences

MPC (Mathematics-Physics –Chemistry)

The specific program outcomes for a Bachelor of Science program with a focus on Mathematics, Physics, and Chemistry (MPC) might include:

PSO 1. Proficiency in mathematical techniques and concepts applicable to physics and chemistry, including calculus, algebra, and differential equations.

PSO 2. Mastery of fundamental principles and theories in physics, such as classical mechanics, electromagnetism, thermodynamics, and quantum mechanics.

PSO 3. Understanding of core concepts in chemistry, including atomic structure, chemical bonding, thermodynamics, kinetics, and organic chemistry.

PSO 4. Ability to design and conduct experiments, analyze data, and draw conclusions in the laboratory settings of physics and chemistry.

PSO 5. Competence in using specialized laboratory equipment, instrumentation, and techniques relevant to physics and chemistry experiments.

PSO 6. Skill in applying mathematical modeling and computational methods to solve problems in physics and chemistry.

PSO 7. Effective communication of scientific ideas and findings through written reports, oral presentations, and graphical representations.

PSO 8. Awareness of ethical considerations and safety protocols in scientific research and experimentation.

PSO 9. Preparation for further study or careers in fields such as research, academia, industry, healthcare, environmental science, and technology.

PSO 10. Adaptability to interdisciplinary approaches and collaboration across fields of mathematics, physics, and chemistry.

These outcomes aim to equip graduates with the knowledge, skills, and abilities needed to succeed in various scientific and professional endeavors related to mathematics, physics, and chemistry.

BZC – Botany Zoology Chemistry

1. Ability to apply scientific methods and techniques to conduct research, analyze data, and draw conclusions in the fields of botany, zoology, and chemistry.
2. Proficiency in laboratory skills, including experimental design, instrumentation, data collection, and interpretation, relevant to botany, zoology, and chemistry.
3. Understanding of the diversity of plant and animal species, their classification, evolution, ecology, and interactions with the environment.
4. Competence in chemical analysis, synthesis, and characterization techniques, as well as knowledge of chemical properties and reactions.
5. Critical thinking and problem-solving abilities to address complex issues and challenges in botany, zoology, and chemistry, and to adapt to emerging trends and advancements in the field.
6. Preparedness for various career paths in academia, research, industry, healthcare, environmental conservation, and other related fields, as well as readiness for further education at the graduate level.

MZC – Microbiology Zoology Chemistry

1. To Demonstrate a comprehensive understanding of core concepts and principles in microbiology, zoology, and chemistry, including microbial physiology, animal biology, and chemical properties and reactions.
2. To Possess proficiency in laboratory techniques specific to microbiology, zoology, and chemistry, including microbiological culture methods, animal dissection, biochemical assays, and chemical analysis.

3. Apply scientific methods and critical thinking skills to design and conduct experiments, analyze data, and draw scientifically sound conclusions in microbiological, zoological, and chemical research.

4. Work collaboratively in interdisciplinary teams to solve problems, exchange ideas, and achieve common goals related to microbiology, zoology, and chemistry.

5. Engage in continuous learning and professional development activities to stay abreast of advancements in the fields of microbiology, zoology, and chemistry and pursue career opportunities in academia, research, industry, healthcare, and environmental sectors.

6. Develop transferable skills, such as critical thinking, problem-solving, adaptability, and leadership, to succeed in various career paths and pursue further education at the graduate level, if desired.

MSCs – Maths Statistics Computer Science

PSO1: Students cultivate problem-solving skills and methodologies while refining logical tools and models essential for addressing diverse real-world challenges.

PSO2: Students gain familiarity with both traditional and contemporary approaches to resolving algebraic, transcendental, differential, and integral equations, all of which find practical applications across numerous disciplines.

PSO3: Students apply and analyze data utilizing probability concepts, statistical models, sampling theory, experimental designs, statistical quality control, reliability, optimization techniques, Indian official statistics, and vital statistics, integrating modern applied statistical tools and techniques for both learning and research purposes.

PSO4: Proficiency in designing and creating software applications to tackle real-time issues through the utilization of programming languages, databases, operating systems, and concepts related to computer networks.

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DEPARTMENT OF PHYSICS

PROGRAMME SPECIAL OUTCOMES (PSOs)

(PHYSICAL SCIENCES)

B.Sc Physical Sciences MPC (Mathematics, Physics, Chemistry)

1. Understanding of basic and advanced concepts in Physics

2. Theoretical and practical skills along with problem solving ability

3. Logical and abstract thinking and analytical approach

4. Ability to apply acquired knowledge and skills to the new and unknown situations in order to develop new theories, experiments and technology

5. Understand the nature in a better way

6. Understand and appreciate the nuances and beauties in science education

7. Tenacity, hardworking and ability to work against odds

8. A new perspective to look at everything from 'Physics' point of view

9. Get introduced to work environment at industrial scale and at research level

10. Awareness of the impact of Physics in social, economic and environmental issues

11. Willingness to take up responsibility in study and work; confidence in his/her capabilities; and motivation for life-long learning.

Head, Dept. of Physics
TSWRAFPDCW, Bhongir

HEAD
Department of Physics
TSWRAFPDCW, Bhongir

Principal
TSWRAFPDCW, Bhongir

PRINCIPAL
T.S.W.R.A.F.P.D.C.W
BHONGIR.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

LIFE SCIENCES

B.Sc. Life Sciences MPC (Mathematics-Physics –Chemistry)

The specific program outcomes for a Bachelor of Science program with a focus on Mathematics, Physics, and Chemistry (MPC) might include:

PSO 1. Proficiency in mathematical techniques and concepts applicable to physics and chemistry, including calculus, algebra, and differential equations.

PSO 2. Mastery of fundamental principles and theories in physics, such as classical mechanics, electromagnetism, thermodynamics, and quantum mechanics.

PSO 3. Understanding of core concepts in chemistry, including atomic structure, chemical bonding, thermodynamics, kinetics, and organic chemistry.

PSO 4. Ability to design and conduct experiments, analyze data, and draw conclusions in the laboratory settings of physics and chemistry.

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PSO 6. Skill in applying mathematical modeling and computational methods to solve problems in physics and chemistry.

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PSO 8. Awareness of ethical considerations and safety protocols in scientific research and experimentation.

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PSO 9. Preparation for further study or careers in fields such as research, academia, industry, healthcare, environmental science, and technology.

PSO 10. Adaptability to interdisciplinary approaches and collaboration across fields of mathematics, physics, and chemistry.

These outcomes aim to equip graduates with the knowledge, skills, and abilities needed to succeed in various scientific and professional endeavors related to mathematics, physics, and chemistry.

B.Sc. Life Sciences BZC (Botany-Zoology –Chemistry)

For a Bachelor of Science program with a focus on Botany, Zoology, and Chemistry (BZC), the specific program outcomes might include:

1. Comprehensive understanding of the fundamental principles and theories in botany, zoology, and chemistry.

2. Proficiency in laboratory techniques and experimental methods relevant to botany, zoology, and chemistry, including plant and animal specimen preparation, chemical analysis, and ecological studies.

3. Knowledge of the structure, function, classification, and diversity of plants and animals, as well as chemical properties and reactions of various compounds.

4. Ability to apply scientific methods and critical thinking skills to investigate and solve problems in botany, zoology, and chemistry.

5. Competence in data collection, analysis, and interpretation in the context of biological and chemical research.

6. Effective communication of scientific ideas and findings through written reports, oral presentations, and visual representations.

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7. Understanding of the interrelationships between plants, animals, and chemical processes in ecosystems and human societies.

8. Awareness of ethical considerations and safety protocols in scientific research involving plants, animals, and chemical substances.

9. Preparation for further study or careers in fields such as botany, zoology, ecology, pharmacology, agriculture, environmental science, and biotechnology.

10. Adaptability to interdisciplinary approaches and collaboration across the fields of botany, zoology, and chemistry to address complex scientific challenges.

These outcomes aim to equip graduates with the knowledge, skills, and abilities needed to pursue various career paths and contribute to scientific research, conservation efforts, and societal advancements in botany, zoology, and chemistry.

B.Sc. Life Sciences MbZC (Micro biology-Zoology –Chemistry)

For a Bachelor of Science program with a focus on Microbiology, Zoology, and Chemistry, the specific program outcomes might include:

1. Understanding of fundamental concepts and principles in microbiology, zoology, and chemistry, including microbial diversity, animal physiology, and chemical reactions.

2. Proficiency in laboratory techniques and experimental methods relevant to microbiology, zoology, and chemistry, including culturing microorganisms, studying animal behavior, and conducting chemical analyses.

3. Knowledge of the interactions between microorganisms, animals, and chemical substances in natural and artificial environments.

4. Ability to apply scientific methods and critical thinking skills to address questions and solve problems in microbiology, zoology, and chemistry.

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5. Competence in data analysis, interpretation, and presentation in the context of microbiological, zoological, and chemical research.

6. Effective communication of scientific ideas and findings through written reports, oral presentations, and visual representations.

7. Awareness of ethical considerations and safety protocols in scientific research involving microorganisms, animals, and chemical substances.

8. Preparation for further study or careers in fields such as microbiology, zoology, biochemistry, pharmacology, environmental science, and healthcare.

9. Adaptability to interdisciplinary approaches and collaboration across the fields of microbiology, zoology, and chemistry.

10. Contribution to the advancement of knowledge and innovation in areas related to microbiology, zoology, and chemistry through research, education, and professional practice.

These outcomes aim to prepare graduates for a range of opportunities in research, industry, healthcare, and academia that integrate principles and methods from microbiology, zoology, and chemistry.

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Telangana Social Welfare Residential Armed Forces Preparatory Degree College for Women

PROGRAMME SPECIFIC OUTCOMES (PSOs)

B.A (History, Economics, Political Science)

1. **Critical Thinking:**

   Ability to analyse, synthesize and integrate knowledge. Capability to evaluate the validity of arguments and conclusion.

2. **Effective Communication:**

   Proficiency in speaking, reading, writing and listening in English and one Indian language and find meaning of the world by connecting people, ideas, books, media and technology.

3. **Social Interaction:**

   Link with society and intercede the disagreement and help to reach conclusion in group sitting. Demonstrate intellectual awareness and competencies. Reflect on one's cultural identities and values.

4. **Effective Citizenship:**

   Promote active citizenship and community engagement. Ability to understand the national development, informed awareness of issues and participate in civic life.

5. **Ethics:**

   Understand and recognised value system, moral dimensions and self responsibility for nation and society. Demonstrate personal and intellectual integrity and academic accountability. Collaborate respectfully with others, individually and in teams.

6. **Environment and Sustainability:**

   Understand the issues and perspectives of environment context and sustainable development.

7. **Self directed and lifelong learning:**

   Acquire the ability to engage in independent and lifelong learning in broad context of socio-technological changes.

8. **Individual and team work:**

   Function effectively as an individual and as a member or leader of diverse teams and in

multi-disciplinary settings.

9. **Evaluate and conduct research:**

   Engage in scholarly inquiry to identify and investigate questions of a theoretical and applied nature which identify gaps and limitations in the existing literature, understand the principles of the research process, apply appropriate research methodologies to specific problems and develop intellectual independence and practices self- directed inquiry.

10. **Depth of understanding:**

    Demonstrate detailed knowledge and perspectives across disciplinary boundaries. Develop a detailed understanding of the current state of knowledge in one or more disciplines. Recognise the value, use and limits of multi-disciplinary learning. Cultivate an openness to consider and engage alternative research perspectives.

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DEPARTMENT OF ECONOMICS

PROGRAMME SPECIFIC OUTCOMES (PSOS)

BA (ECONOMICS , HISTORY AND POLTICAL SCIENCE)

1. **Economic Theory Application**:
   - **Explanation**: This outcome ensures that students can apply economic theories and models to real-world situations. It's not just about knowing the theory but being able to use it to understand and solve economic problems.
   - **Example**: A student could use supply and demand models to predict how a new product might fare in the market.
2. **Statistical and Econometric Proficiency**:
   - **Explanation**: This outcome focuses on the ability to use statistical and econometric methods to analyze data. Econometrics is particularly important for testing economic theories and making forecasts based on data.
   - **Example**: A student might use econometric techniques to test the effectiveness of a government's job creation program.
3. **Indian Economic Context**:
   - **Explanation**: Given that the program is offered in India, this outcome ensures that students have a deep understanding of the Indian economy, its history, current trends, and future challenges. This is crucial for those aiming to work in Indian economic policy, research, or industry.
   - **Example**: A student could analyze the impact of the Green Revolution on India's agricultural productivity and rural economy.
4. **Sectoral Analysis**:
   - **Explanation**: This outcome ensures that students can analyze different sectors of the economy—agriculture, industry, and services—and understand their roles in economic development. It's about understanding how these sectors interact and contribute to overall economic growth.
   - **Example**: A student might study the growth of the IT sector in India and its impact on the economy.
5. **Environmental and Public Economics**:
   - **Explanation**: This outcome emphasizes the importance of understanding the economic aspects of environmental issues and public policy. Students will learn how to evaluate policies related to public goods, pollution control, and sustainable development.
   - **Example**: A student could assess the economic costs and benefits of implementing stricter pollution controls in a city.
6. **International and Development Economics**:

- **Explanation**: This outcome ensures that students are equipped to understand global economic issues and the economics of development. This is particularly important for understanding the challenges faced by developing countries.
- **Example**: A student might analyze the impact of foreign direct investment on economic growth in a developing country.

7. **Practical Application through Projects**:
   - **Explanation**: This outcome emphasizes hands-on learning through projects and internships, where students apply what they've learned in real-world settings. This practical experience is crucial for transitioning into the workforce.
   - **Example**: A student might work on a project analyzing the financial viability of a new business venture using economic principles.
8. **Entrepreneurship and Economic Development**:
   - **Explanation**: Understanding the role of entrepreneurship in economic development is crucial. This outcome ensures that students understand the factors that drive entrepreneurship and how it contributes to economic growth and innovation.
   - **Example**: A student could study the role of startups in driving technological innovation and economic growth in urban areas.

Summary

The **Programme Outcomes (POs)** provide a broad foundation of knowledge and skills that graduates are expected to have upon completing the program, focusing on general competencies like analytical thinking, communication, and quantitative analysis.

The **Programme Specific Outcomes (PSOs)** dive deeper into specific areas of economics, ensuring that graduates have specialized knowledge in applying economic theories, analyzing the Indian economy, understanding sectoral dynamics, and more. These outcomes prepare students for specific career paths, further studies, or research roles in economics and related fields.

Together, these outcomes ensure that graduates are not only well-versed in economic theory but also equipped to apply their knowledge practically, ethically, and effectively in various professional and academic settings.

Principal

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Programme Specific Outcomes

Commerce Department

B.Com (General):

PSO1: Learners venture into Managerial positions, Accounting areas, Banking Sectors, Auditing, Company Secretaryship, Teaching, Professor, Stock Agents, Government Employment, etc.

PSO2 - Enables learners to prove themselves in different Professional examinations like CA, CS, CAT, GRE, CMA, UPSC etc.

PSO3 -Learners further move towards research in the field of Commerce

PSO4- Enables students to demonstrate Progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up.

PSO5 – The vast syllabi covers various fields of commerce and accountancy which helps students grasp practical and theoretical knowledge.

B.Com (Computers):

PSO1 - The course helps aspirants to acquire knowledge in the field of accounting, taxation, financial accounting, managerial economics, business law and business communications.

PSO2 - Learners can pursue careers as financial experts and also develop a better understanding of the markets as this course gives an in-depth understanding of the essential qualities and areas of expertise required for such jobs.

PSO3 - The programme aims to develop professional skills among students and build a strong foundation in accounts, Finance and Ethics which will benefit themselves as well as the society.