

**Mrs. Kesharbai Sonajirao Kshirsagar Alias Kaku Arts, Science &
Commerce College, Beed.
Department of Mathematics
PEOs, POs, PSOs**

Programme Educational Objectives (PEOs):

Programme Educational Objectives (PEOs) for the Bachelor of Science Curriculum under the National Education Policy 2020:

1. **Mastery of Discipline-Specific Knowledge:** Graduates of the Bachelor of Science program will demonstrate a deep understanding of fundamental principles, theories, and methodologies in their chosen scientific discipline, enabling them to analyze complex

problems, propose innovative solutions, and contribute to advancements in their field.

2. **Interdisciplinary Proficiency:** Graduates will possess the ability to integrate knowledge and skills from multiple scientific disciplines, fostering a holistic approach to problem-solving and innovation. They will be equipped to address multifaceted challenges by drawing upon diverse perspectives and methodologies.

3. **Critical Thinking and Analytical Skills:** Graduates will develop strong critical thinking abilities, enabling them to evaluate information rigorously, analyze data effectively, and make informed decisions based on evidence. They will demonstrate proficiency in applying logical reasoning and scientific methods to solve problems and generate new knowledge.

4. **Leadership and Innovation:** Graduates will demonstrate leadership qualities and entrepreneurial mindset, capable of initiating and driving positive change in their organizations and communities. They will exhibit creativity, resilience, and adaptability, harnessing innovation to address complex challenges and seize opportunities for growth and advancement.

5. **Global Citizenship and Cultural Sensitivity:** Graduates will possess a global perspective and cultural sensitivity, recognizing the inter connectedness of diverse communities and the importance of collaboration across borders. They will engage in cross-cultural dialogue, embrace diversity, and contribute to the advancement of knowledge and understanding on a global scale.

These Programme Educational Objectives serve as guiding principles for the Bachelor of Science curriculum, reflecting our commitment to nurturing well-rounded graduates who are prepared to excel in their careers, contribute to society, and lead meaningful lives in a rapidly changing world.

Programme Outcomes (POs):

The National Education Policy (NEP) 2020 for India emphasizes several key aspects for Bachelor of Science (B.Sc.) programs, aiming to produce graduates who are not only well-versed in their respective disciplines but also equipped with skills necessary for holistic development and employability. While specific program outcomes may vary between institutions and disciplines within B.Sc. programs, here are some common outcomes aligned with NEP 2020:

➤ PO1. The citizenship and society: Apply broad understanding of ethical and professional skill in science subjects in the context of global, economic, environmental and societal realities while encompassing relevant contemporary issues.

PO2. Environment and sustainability: Apply broad understanding of impact of science subjects in a global, economic, environmental and societal context and demonstrate the knowledge of, and need for sustainable development.

➤ PO3. Ethics: Apply ability to develop sustainable practical solutions for science subject related problems within positive professional and ethical boundaries.

➤ PO4. Individual and team work: Function effectively as a leader and as well as team member in diverse/multidisciplinary environments.

➤ PO5. Communication: Communicate effectively on complex science subject related activities with the scientific community in particular and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

➤ PO6. Project management and finance: Demonstrate knowledge and understanding of the first principles of science and apply these to one's own work as a member and leader in a team, to complete project in any environment.

➤ PO7. Life-long learning: Recognize the need for lifelong learning and have the ability to engage in independent and life-long learning in the broadest context of technological change.

These program outcomes align with the broader goals of NEP 2020 to transform higher education in India and prepare students for the challenges and opportunities of the 21st century. Board of Studies designing B.Sc. curricula are encouraged to incorporate these outcomes into their program objectives and learning outcomes.

Programme Specific Outcomes (PSOs):

On completion of the 03/04 years Degree in B.Sc. (Mathematics) students will be able to:

PSO 1. Disciplinary Knowledge: Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas..

PSO 2. Critical thinking and analytical reasoning: The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing and various aspects of real life problems.

PSO 3. Problem Solving: The Mathematical knowledge gained by the students through this programme develops an ability to analyse the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall developments.

PSO 4. Research related skills: The completing this programme develops the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics. Ability to pursue advanced studies and research in pure and applied Mathematical sciences

PSO 5. Information/digital Literacy: The completion of this programme will enable the learner to use appropriate software's to solve system of algebraic equations and differential equations.

PSO 6. Self-directed learning: The students completing this programme will develop ability of working independently and to make an in-depth study of various notions of Mathematics.