

## **Program Specific Outcomes (PSO)**

**B.Sc. (Comp.Sci), B.C.A.,B.Sc.,M.Sc.(Comp.Sci),M.M.S.[C.M]**

## Deogiri Pratishthan Sanchalit

### Tulsi Computer Science And Information Technology College, Beed

#### B.sc (Computer Science) Program Specific Outcomes

Programme Specific Outcomes (PSOs):

PSO1. Domain knowledge: Apply the knowledge of Computer Science fundamental, and advanced areas of Computer Science to provide comprehensive solution

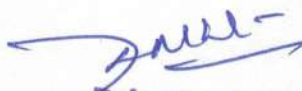
PSO2. Problem Analysis: Identify Computer Science related problems at varied complexity and analyze the same to formulate/ develop substantiated conclusion

PSO3. Design Development of solutions: Design/ develop solutions for problems at varied complexity in various areas of Computer Science to address changing challenges put forward by market demand/ stakeholder

PSO4. Conduct Investigation of complex problems: Use established knowledge and methods to design of experiments, analyze resulting data and interpret the same to provide valid conclusions.

PSO5. Modern tools: Create, select, and apply appropriate techniques, resources, and modern electronics and relevant IT tools including prediction and modeling to complex Information Technology related activities with clear understanding of the limitations.



  
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### B.C.A. Program Specific Outcomes

- PSO1. Equip themselves to potentially rich & employable field of computer applications.
- PSO2. Pursue higher studies in the area of Computer Science/Applications.
- PSO3. Take up self-employment in Indian & global software market.
- PSO4. Meet the requirements of the Industrial standards.



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#### B.sc (Botany) Program Specific Outcomes

##### Programme Specific Outcomes (PSOs):

PSO1. Domain knowledge: Apply the knowledge of fundamental and advanced areas of Plant Science for the wellbeing of the human.

PSO2. Understanding the various Plant Groups: The basic knowledge and evolution of different plant groups like Bacteria, Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms will be given to students.

PSO3. Understanding structures of plant body: The detailed morphological, anatomical, palynological, embryological structures will give the understanding about the plant body.

PSO4: Understanding processes in plant body: The mechanism of anabolic and catabolic activities, cell divisions and growth in plant bodies will be explained to increase the production of Crop plants.

PSO5: Understanding properties and uses of plants to maintain health: The properties and uses of common medicinal plants, spices, Vegetables etc. will be explained to maintain the good health.

PSO6. Enriching knowledge related with Agriculture: Use of established knowledge regarding manuring, composting, use of Biofertilizers and ecofriendly Insecticides and pesticides for the sustainable development.

#### B.sc (Chemistry) Program Specific Outcomes

##### Programme Specific Outcomes (PSOs):

PSO1; Core competency: The chemistry graduates will know the fundamental concepts of chemistry and applied chemistry. These fundamental concepts would reflect the latest understanding of the field, and therefore, are dynamic in nature and require frequent and time-bound revisions.

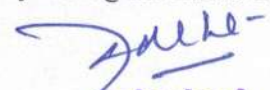
PSO2; Communication skills: Chemistry graduates will possess minimum standards of communication skills expected of a Chemistry graduate in the country. They are expected to read and understand the documents with in-depth analyses and logical arguments. Graduates are expected to be well-versed in speaking and communicating their idea/finding/concepts to wider audience.

PSO3; Critical thinking: Chemistry graduates are expected to know basics of cognitive biases, mental models, logical fallacies, scientific methodology and constructing cogent scientific arguments.

PSO4; Psychological skills: Chemistry Graduates are expected to possess basic psychological skills required to face the world at large, as well as the skills to deal with individuals and students of various sociocultural, economic and educational levels. Psychological skills may

  
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include feedback loops, self-compassion, self-reflection, goal- setting, interpersonal relationships, and emotional management.

PSO5; Problem-solving: Chemistry Graduates will be equipped with problem-solving philosophical approaches that are pertinent across the disciplines.

PSO6; Analytical reasoning: Chemistry Graduates acquire formulate cogent arguments and spot logical flaws, inconsistencies, circular reasoning etc.

PSO7; Research-skills: Chemistry Graduates will be keenly observant about what is going on in the natural surroundings to awake their curiosity. Chemistry Graduates are expected to design a scientific experiment through statistical hypothesis testing and other a priori reasoning including logical deduction.

PSO8; Teamwork: Chemistry Graduates will be team players, with productive cooperations involving members from diverse socio-cultural backgrounds.

PSO9; Digital Literacy: Chemistry Graduates are expected to be digitally literate for them to enroll and increase their core competency via e-learning resources such as MOOC and other digital tools for lifelong learning. Chemistry Graduates should be able to spot data fabrication and fake news by applying rational skepticism and analytical reasoning.

PSO10; Moral and ethical awareness: Chemistry Graduates will be responsible citizen of India and be aware of moral and ethical baseline of the country and the world. They are expected to define their core ethical virtues good enough to distinguish what construes as illegal and crime in Indian constitution. Emphasis be given on academic and research ethics, including fair Benefit Sharing, Plagiarism, Scientific Misconduct and so on.

### **B.sc (Mathematics) Program Specific Outcomes**

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.

  
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## **B.sc (Microbiology) Program Specific Outcomes**

### **Programme Specific Outcomes (PSOs):**

PSO1. Domain knowledge: Acquire knowledge and gain understanding of concepts in microbiology and its applications in various fields.

PSO2. Problem Analysis: Applying the knowledge acquired to explore the world of microbes and analysing the specific benefits. 2.8 die ontigiosi ben capien

PSO3. Design Development of solutions: Design/ develop solutions for problems at varied complexity in various areas of Microbiology to address changing challenges in various industries and environment thereby developing keen interest in research.

PSO4. Conduct Investigation of complex problems: Use established knowledge and methods to design of experiments, analyze resulting data statistically and interpret the same to provide valid conclusions for applied research.

PSO5. Modern tools: Create, select, and apply appropriate techniques, resources, and relevant IT tools including prediction and modelling to complex related activities with clear understanding of the limitations for solving real world problems.

## **B.sc (Physics) Program Specific Outcomes**

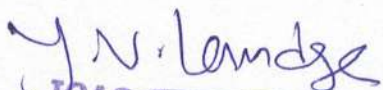
### **Programme Specific Outcomes (PSOs):**

PSO1: Domain knowledge: Graduates will have an in-depth comprehension of fundamental theories and principles across various domains of physics, encompassing classical mechanics, electromagnetism, thermodynamics, quantum mechanics, nuclear and high- energy physics, solid-state physics, materials science, electronics, and modern physics.


PSO2: Problem Analysis: Graduates will demonstrate adeptness in analysing complex physical problems, formulating hypotheses, and employing appropriate mathematical and computational techniques for solutions. They will understand the significance of equations, formulas, graphs, and mathematical tools. Furthermore, they will effectively utilize technology for experimental design and implementation, data analysis, numerical methods, and computational techniques in problem-solving.

PSO3: Design Development of solutions: Graduates will possess the capability to create and execute experimental setups, simulations, and theoretical models, effectively addressing scientific inquiries and resolving practical physics-related issues. They will have both fundamental and advanced-level expertise in physics, enabling them to proficiently utilize computational tools and scientific software.

PSO4: Conduct Investigation of complex problems: Graduates will exhibit proficiency in conducting investigations of intricate physics problems, which involves effectively utilizing established knowledge and methodologies to design experiments, meticulously analyzing resulting data to extract pertinent information, and accurately interpreting data to draw valid conclusions, thereby contributing to a deeper comprehension of the problem under scrutiny.

  
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PSO5: Modern Tools: Graduates will demonstrate proficiency in employing modern experimental, computational, and data analysis tools and techniques prevalent in physics research and industrial settings. They will adeptly apply and cultivate skills in physics and engineering for industrial applications, production, and technology development and transfer. Furthermore, they will hone advanced analytical skills tailored for job requirements in industries, consultancies, educational institutions, research organizations, or public administration.

PSO6: Communication Skills: Graduates will effectively communicate scientific ideas, methodologies, and results through written reports, oral presentations, and scientific publications, facilitating collaboration and dissemination of knowledge within the scientific community.

### **B.sc (Zoology) Program Specific Outcomes**

#### **Programme Specific Outcomes (PSOs):**

PSO1: Domain knowledge: This programme will demonstrate and apply the deep knowledge of fundamental and advanced areas of subject zoology that will provide both classical and modern concepts of zoology in higher education.

PSO2: Problem Analysis: Identify the problems related to subject at varied complexity and develop strong, critical thinking and abilities for substantiated solution and conclusion effectively.

PSO3: Design Development of solutions: Graduates will possess the capability to create and execute research ideas. They will have both fundamental and scientific approach towards Zoology.

PSO4: Conduct Investigation of complex problems: Graduates will be established knowledge and methods to design experiments, analyze resulting data and interpret the same to provide valid conclusions. Importance is given to practical learning and presentation skill of students. The lab courses and skill provide students to their employability.


PSO5: Modern Tools and techniques: Graduate will create appropriate techniques and cultivate skills in life science for agricultural, animal husbandry and relevant to human studies more emphasis is given to branches like biochemistry, economic zoology, behavioral biology, evolutionary biology, molecular biology, genetic engineering, bioinformatics etc.

PSO6: Communication Skills: Graduates will effectively communicate scientific ideas, methodologies, and results through written reports, oral presentations, and scientific publications, facilitating collaboration and dissemination of knowledge within the scientific community.

PSO6: Research related skill: Ability to pursue advanced studies and research in zoology and provide opportunity for the mobility of the student both within and across the world.

  
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#### M.sc (Computer Science) Program Specific Outcomes

Program Specific Objectives (PSOs) are more focused and concrete statements that describe the specific outcomes expected from a Master of Science (M.Sc.) in Computer Science program.

These objectives should align with the broader program objectives mentioned earlier.

PSO 1: Advanced Problem Solving and Analysis Skills: Students of the program will be able to identify, analyse, and solve complex problems in computer science using theoretical knowledge and practical skills gained during the course.

PSO 2: Proficiency in Software Development: Students will demonstrate expertise in designing, implementing, testing, and maintaining software systems and applications using various programming languages and development methodologies.

PSO 3: Research and Innovation Capabilities: Students will develop the ability to conduct independent research, contribute to existing knowledge in computer science, and propose innovative solutions in specialized areas.

PSO 4: Specialization Expertise: Students will acquire in-depth knowledge and expertise in their chosen specialization, such as artificial intelligence, data science, cybersecurity, software engineering, etc.

PSO 5: Effective Communication and Collaboration: Students will cultivate strong communication, teamwork, and leadership skills to work effectively in multidisciplinary teams and convey technical concepts to diverse audiences.


PSO 6: Ethical and Professional Practices: Students will understand the ethical and legal implications of computer science applications and adhere to professional standards in their roles as computer scientists.

PSO 7: Adaptability and Lifelong Learning: Graduates will embrace a growth mindset and exhibit the ability to adapt to emerging technologies and continue their learning beyond the program.

PSO 8: Software Development Lifecycle Proficiency: Students will gain hands-on experience in each phase of the software development lifecycle, including requirements gathering, design, implementation, testing, deployment, and maintenance.

  
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#### M.M.S. [C.M.] Program Specific Outcomes

- PSO1. To provide knowledge in the areas of marketing, finance, human resource, operations and systems
- PSO2. To develop proactive thinking so as to perform effectively in the dynamic socio-economic and business ecosystem
- PSO3. To prepare the students with requisite knowledge, skills & right attitude to become an effective leader

  
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