

**Payyanur College, Payyanur  
(Affiliated to Kannur University)**

**Programme Outcomes (POs)**

# **BSc DEGREE PROGRAMME (FOR SCIENCE)**

## **PROGRAMME OUTCOMES (PO)**

### **PO1: Critical Thinking –**

1. Assess information without bias to form well-founded judgments.
2. Derive logical conclusions from data, distinguishing between essential and extraneous details for problem-solving or decision-making.
3. Spot logical inconsistencies in others' arguments.
4. Assess data, facts, observable events, and research outcomes to produce relevant and valid domain-specific conclusions.

### **PO 2. COMPLEX PROBLEM SOLVING**

1. Address diverse challenges in both familiar and unfamiliar settings, transferring knowledge to practical scenarios.
2. Break down problems, devise and execute solutions, and evaluate their effectiveness.
3. Consider the impact of solutions on individuals and the environment.

### **PO 3. CREATIVITY**

1. Create innovative content, theories, and methodologies.
2. Employ diverse approaches to link disparate concepts or occurrences.
3. Offer fresh insights or enhance existing concepts and solutions.
4. Cultivate, refine, and articulate novel ideas with practical utility or intrinsic worth.

### **PO 4. COMMUNICATION SKILLS**

1. Communicate ideas or emotions clearly and effectively.
2. Employ language to convey messages with precision.
3. Captivate and involve the audience adeptly.
4. Demonstrate attentive listening, understanding, and empathy towards speakers.
5. Express opinions and thoughts confidently and assertively.

### **PO 5. LEADERSHIP QUALITIES**

1. Lead diverse teams with effectiveness and respect.
2. Foster team cohesion towards shared objectives.
3. Inspire and guide individuals to reach optimal solutions collectively.
4. Provide assistance and encouragement during challenging times, fostering resilience and courage.

### **PO 6. MASTERING THE ART OF SKILL ACQUISITION**

1. Obtain fresh knowledge and expertise, such as mastering the art of learning new skills, vital for continuous learning, through self-guided learning.

2. Independently navigate and locate suitable resources necessary for ongoing learning endeavors.
3. Develop organizational abilities and time management techniques to establish personal objectives and deadlines.
4. Foster a positive mindset to embrace lifelong learning.

#### **PO 7. EMERGING TECHNOLOGICAL ABILITIES**

1. Utilize Information and Communication Technology across diverse learning and professional environments, accessing, evaluating, and applying various pertinent information sources.
2. Employ suitable software for data analysis tasks.
3. Grasp the hazards present in the digital realm and adopt measures to stay secure.
4. Embrace and uphold constitutional, humanistic, ethical, and moral principles in life, encompassing universal human values like truth, integrity, peace, compassion, nonviolence, scientific reasoning, and citizenship responsibilities.
5. Develop a stance or argument on an ethical matter by considering various viewpoints.
6. Recognize ethical dilemmas in professional settings, adhering to ethical standards, which involve refraining from unethical practices such as data fabrication, falsification, plagiarism, and respecting intellectual property rights.
7. Implement impartial, objective, and truthful approaches in all professional endeavors.

# **Programme Specific Outcomes (PSOs)**

Name of the Programme: **BSc BOTANY**

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

### **PSO1**

The curriculum instills a comprehensive understanding of plant diversity in students, covering aspects such as structure, genetics, reproduction, ecology, and economic significance across various plant groups.

### **PSO2**

Students gain insight into the breadth of plant diversity, delving into the intricacies of structure, function, reproduction, and life cycles of selected groups, fostering a deep curiosity to explore further into the realm of plants.

### **PSO3**

Students grasp fundamental concepts in Morphology, Taxonomy, Anatomy, Ecology, Physiology, Genetics, and Molecular Biology, while also delving into advanced topics like Plant Biotechnology, Molecular Plant Pathogen interactions, and Developmental Botany.

### **PSO4**

Students are exposed to diverse professional opportunities including Landscaping, Gardening, Floriculture, Organic farming, Herbal technology, Mushroom cultivation, Ecotourism, and Forensic Botany, empowering them to become future entrepreneurs.

### **PSO5**

Students become adept in utilizing various analytical techniques and tools for both basic and applied research in plant biology, while also addressing intellectual and ethical considerations in biological discoveries

### **PSO6**

Students recognize the vital role of the plant kingdom in human existence and develop skills for documenting, conserving, and sustainably developing plant resources amidst climate change challenges.

### **PSO7**

Engaging in project work and research activities prompts students to apply interdisciplinary concepts, fostering critical thinking, problem-solving abilities, and creativity for generating new knowledge.

### **PSO 8**

Hands-on training across various domains cultivates practical skills, proficiency in equipment handling, laboratory techniques, and biological data collection, analysis, and interpretation. and

### **PSO 9**

Engaging in laboratory work and field studies fosters the cultivation of teamwork and leadership abilities among students. Moreover, hands-on experience in fieldwork serves as a practical avenue for grasping the art of skill acquisition

**PSO 10**

Completion of assignments and presentations serves to enhance students' communication and ICT proficiencies. Additionally, coursework in Biostatistics and Bioinformatics provides experiential learning opportunities with software and tools pertinent to these fields of biology.

**PSO 11**

The adaptable nature of the curriculum empowers instructors to integrate inquiry-based learning activities, encouraging students to inquire, investigate, and independently draw conclusions. This approach stimulates curiosity, promotes self-directed learning, and facilitates a deeper comprehension of scientific principles. Furthermore, teacher-led debates and discussions on contentious scientific subjects equip students with argumentation skills, instilling the ability to substantiate claims with evidence and consider diverse perspectives.

**PSO 12**

Foster a passion for lifelong learning and professional development by encouraging students to stay updated with advancements in the field of botany, participate in continuing education programs, and pursue further studies or certifications as needed.

## **Course Outcomes (COs)**

## COURSE OUTCOMES (COs)

Sl. No	Name of the Course	Outcomes
<b>DISCIPLINE SPECIFIC COURSES</b>		
1.	<b>KUIDSCBOT101: CELL: STRUCTURE AND REPRODUCTION</b>	<p><b>CO1:</b> Knowledge in the basic structural and functional unit of life, the cell.</p> <p><b>CO2:</b> Understanding of the cell biology related terms used in the description of diverse forms of life.</p> <p><b>CO3:</b> Understanding the basic differences in cell structure and cell reproduction that exist in various plant groups.</p> <p><b>CO4:</b> Ability to apply the concepts gathered in the field of evolution and diversity studies.</p> <p><b>CO5:</b> Firsthand experience in viewing cells under microscope and there by induction of enthusiasm in biological studies.</p>
2.	<b>KUIDSCBOT103: DIVERSITY OF PLANTS1</b>	<p><b>CO1:</b> Acquisition of basic knowledge in the cell structure and diversity among life forms, especially on lower plants and fungi.</p> <p><b>CO2:</b> Understanding of the terms used cell biology and also in the description of diverse forms of life.</p> <p><b>CO3:</b> Understanding the basic differences that exist among different groups of plants.</p> <p><b>CO4:</b> Ability to apply the concepts gathered in this course to the field of evolution and advanced diversity and ecological studies.</p> <p><b>CO5:</b> Firsthand experience in viewing the diversity using laboratory procedures and there by induction of enthusiasm in biological studies.</p>
3.	<b>KUIDSCBOT104: PLANTS ECOLOGY AND PHYTOGEOGRAPHY</b>	<p><b>CO1:</b> Acquisition of basic knowledge in ecology and phytogeography.</p> <p><b>CO2:</b> Understanding the dynamic nature of ecosystems in particular and biosphere in general.</p> <p><b>CO3:</b> Understanding the basic relationships that exist among different species.</p> <p><b>CO4:</b> Ability to apply the concepts gathered in this course to the field of evolution and modern ecology</p> <p><b>CO5:</b> First -hand experience in observing the major ethical and legal aspects in environmental sciences.</p>
<b>MULTI-DISCIPLINARY COURSE</b>		



4.	<b>KU1MDCBOT102: BOTANY FOR THE BEGINNERS</b>	<b>CO1:</b> Basic knowledge in botany <b>CO2:</b> Understanding of the terms, concepts and basic nature of botany and its applications in human welfare. <b>CO3:</b> Understanding the Ecological relations of plants. <b>CO4:</b> Application of the concepts of botany and knowledge in plant diversity in future activities and also for the profession.
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