



### Department of Botany

### B.Sc. Botany

S.No.	Course Code	Course Name	Course Outcomes
<b>SEMESTER - I</b>			
1.	18UBYC11	Core Course -I: Plant Diversity-I	<ol style="list-style-type: none"><li>1. Describe the essential features diversity of plant kingdom and their salient features.</li><li>2. Provided a thorough knowledge about structure and life cycle pattern of algae and bryophytes.</li><li>3. Students get grasp of the economic importance of algae and bryophytes.</li><li>4. Study that the structure, reproduction, culture, classifications, life-cycle of fungi.</li><li>5. Explain the ecological distribution, morphology and economic importance of Fungi.</li><li>6. Learn to the methods for sampling algae and bryophytes in the field observation.</li><li>7. Assessed the environmental problems of Algae, Fungi and Bryophytes.</li></ol>
2.	18UBYC1P	Core Course -II: Lab in Plant Diversity-I	<ol style="list-style-type: none"><li>1. By understanding in microspecimens of Algae, Fungi and Bryophytes.</li><li>2. Students may able to identify the various forms of Algae, Fungi and Bryophytes.</li><li>3. By identifying specimens of Algae, Fungi and Bryophytes.</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			4. Learned the life form of Bryophytes.
3.	18UBYN11	Non-Major Elective Course -I: Fundamentals of Botany	1. Create an interest on plant world to have science students. 2. Providing the knowledge about the plants and its role on earth. 3. Improving the familiarize students on plant food production. 4. Assessed the native plants. 5. Learning to the medicinal uses of wild plants. 6. Studied the process of essential oil.
4.	18UBYE1P	Enrichment Course I: Nursery and Landscaping	1. Improved knowledge of various techniques in Nursery and landscaping. 2. Describe the importance of horticultural crops and their propagation methods. 3. Define the types of gardens and their establishment. 4. Studied that the bonsai methods. 5. To become an entrepreneur through the knowledge of horticultural techniques.
<b>SEMESTER – II</b>			
5.	18UBYC21	Core Course-III: Plant Diversity-II	1. Understand the salient features of Pteridophytes, Gymnosperms, Palaeobotany and Lichens. 2. Students learning to the importance of fossils and fossilization process in tracing evolution. 3. Provide a thorough knowledge about structure and life cycle pattern of Pteridophytes, Gymnosperms, and Lichens. 4. Explain the structure and reproduction of various genera



S.No.	Course Code	Course Name	Course Outcomes
			mentioned in the syllabus. 5. Describe the Morphology and Anatomy characters of Pteridophyte and Gymnosperm 6. Understand the Reproduction and evolutionary trends in Pteridophytes and Gymnosperm. 7. Studied the structure and method of fossil formation. 8. Learning to the geological era.
6.	18UBYC2P	Core Course-IV: Lab in Plant Diversity-II	1. Understanding in micro specimens of Pteridophytes, Gymnosperms and Paleobotany. 2. Students identified the various forms of Pteridophytes, Gymnosperms and Paleobotany. 3. Identified specimens of Pteridophytes, Gymnosperms and Paleobotany. 4. Learned the life form of Pteridophytes and Gymnosperms.
7.	18UBYN21	Non-Major Elective Course-II: Plant Resources and Utilization	1. Provide the knowledge based on various plant products the humanity depends on. 2. Explain the relation with plants and human life. 3. Define the student's dependence in man and plants. 4. Improve the traditional knowledge about the important medicinal plants. 5. Analyzed the processing methods of medicinal plants. 6. Learning to the conservation and utilization of threatened plants.
8.	18UBYE21	Enrichment course-II: Morphology of Angiosperms	1. Understand the morphological features of vegetative, inflorescence, fruits and seed characters.



S.No.	Course Code	Course Name	Course Outcomes
			<ol style="list-style-type: none"><li>2. Helps to have improved the knowledge on the important plants with their systematic treatment.</li><li>3. Provide the knowledge about the identification of plant species.</li><li>4. Helps to Ability to utilize plant morphology and anatomy skills in other related courses and disciplines.</li><li>5. Understand the relationship of development and evolution in understanding plants as organisms.</li></ol>
<b>SEMESTER - III</b>			
9.	18UBYC31	Core Course-V: Plant Anatomy and Embryology	<ol style="list-style-type: none"><li>1. Provide information about internal structure of stem, root and leaf.</li><li>2. Improve the knowledge about the general aspects of plant reproductive organs and embryo and its development.</li><li>3. Studied with a fundamental practice of plant embryology.</li><li>4. Provide the knowledge about the various aspects of morphogenesis.</li><li>5. Identifying the key aspects of embryology of Angiosperms.</li><li>6. Understand the process of formation of male and female sexual representatives.</li><li>7. Studied the mechanism of fertilization in angiosperms.</li><li>8. Improve the knowledge embryo development and endosperms</li></ol>
10.	18UBYC3P	Core Course-VI: Lab in Plant Anatomy and Embryology	<ol style="list-style-type: none"><li>1. Provide information about internal structure of stem, root and leaf.</li><li>2. Improve the knowledge about the general aspects of plant</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			reproductive organs and embryo and its development. 3. Studied with fundamental practices of plant embryology. 4. Provide the knowledge about the various aspects of morphogenesis. 5. Identifying the key aspects of embryology of Angiosperms. 6. Understand the process of formation of male and female sexual representatives. 7. Studied the mechanism of fertilization in angiosperms. 8. Improve the knowledge embryo development and endosperms.
11.	18UBYA31	Allied Course III: Invertebrata	1. Knowledge about the modern system of classification 2. Understand Malarial, Tapeworm of Ascaris Parasite. 3. Understand the life cycle of earthworm, Vermi technology of prawn culture.
12.	18UBYA3P	Allied Course -III: Lab in Zoology- I	
13.	18UBYS31	Skill Based Course-I: Medical Botany	1. Provide the knowledge about the importance of medicinal plants. 2. Studied to be more familiar in medicinal plants cultivation and conservation. 3. Learn to the making and process of medicinal plants. 4. Understand the systematic position, diagnostic feature and medicinal uses of selected plants. 5. Improved knowledge about different systems of medicinal plants (Siddha, Ayurveda and Unani).



S.No.	Course Code	Course Name	Course Outcomes
			6. Studied that the conservation methods of medicinal plants.
14.	18UBYV31	Value Based Course- I: Mushroom Cultivation Technology	<ol style="list-style-type: none"><li>1. Provide the information about mushroom and their uses.</li><li>2. Studied to be more familiar in mushroom cultivation.</li><li>3. Understand the cultivation process of mushrooms.</li><li>4. Provide the knowledge about spawn preparation technique.</li><li>5. Understand the various types mushroom diseases and control.</li><li>6. Provide the Knowledge about processing of mushrooms.</li><li>7. To become a entrepreneur through the knowledge of mushroom cultivation.</li></ol>
15.	18UBTEX1	Extra Credit Course: Nutrition Science – I	<ol style="list-style-type: none"><li>1. To know about food pyramid and their layers</li><li>2. To understand the food types and their utilization</li><li>3. To learn about vegetables and their vitamins usage</li></ol>
<b>SEMESTER – IV</b>			
16.	18UBYC41	Core Course-VII: Microbiology and Plant Pathology	<ol style="list-style-type: none"><li>1. Understand the basics knowledge of microbiology includes types of microbes, classification and characterization.</li><li>2. Studied the history of microbiology and its applications.</li><li>3. Describe the classification of bacteria.</li><li>4. Explain the different types of viruses and plant diseases.</li><li>5. Provide the sufficient knowledge about the types of symptoms and their causative agents of diseases.</li><li>6. Understand the diversity of microbes and importance of</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			classification of microorganisms.
17.	18UBYC4P	Core Course-VIII: Lab in Microbiology and Plant Pathology	<ol style="list-style-type: none"><li>1. Demonstrate safe practices in a microbiology laboratory.</li><li>2. Acquire the knowledge about basic skills in microbiology techniques.</li><li>3. Helps to the students in culturing, identification and maintenance of microbes.</li><li>4. Enrich their knowledge and skills in identifying the museum specimens.</li><li>5. Understand and explain environmental factors that influence microbes.</li><li>6. Studied the staining methods and slide preparations.</li><li>7. Identify at sight and make detailed study of type of the plant diseases specified.</li></ol>
18.	18UBYA41	Allied Course –IV: Chordata	<ol style="list-style-type: none"><li>1. Knowledge about the modern system of classification of vertebrate and invertebrate.</li><li>2. Analyze the biological importance and adaptation of Pisces, Reptiles, Amphibia, Aves and Mammalia.</li><li>3. Salient features of migration of birds.</li><li>4. Characteristic features of invertebrates and their suitable examples.</li></ol>
19.	18UBYA3P	Allied Course –III: Lab in Ancillary Zoology	
20.	18UBYO41	Major Elective Course-I: Biology for Entrepreneurship Development	<ol style="list-style-type: none"><li>1. Understand in-depth understanding on biogas technology and its uses.</li><li>2. Understand composting technology and its applications.</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			<ol style="list-style-type: none"><li>3. Know the cultivation and uses of Mushrooms.</li><li>4. Know the cultivation and uses Spirulina.</li><li>5. Understand the value of Ornamental Fish culture.</li></ol>
21.	18UBY042	Major Elective Course-I: Plant Breeding and Evolutions	<ol style="list-style-type: none"><li>1. Learning to importance of plant breeding.</li><li>2. Studied the different methods of selection (Mass, pureline and Clonal).</li><li>3. Understand the Hybridization techniques.</li><li>4. Expose the students to the basic principles of different techniques.</li><li>5. Improve the knowledge of Breeding for crop improvements of wild varieties.</li></ol>
22.	18UBY041	Optional/ Elective Course I: Consumer Affairs	<ol style="list-style-type: none"><li>1. The learners know about the need for consumer protection and the areas covered by consumer protection law</li><li>2. Learners will have a clear idea on legislative controls on unconscionable conduct, misleading or deceptive conduct, false or misleading representations and other unfair practices</li><li>3. The learners know the legal obligations of a supplier of goods or services</li><li>4. The learners know the obligations of manufacturers and the rights of consumers to compensation</li><li>5. The learners know the bodies available to protect the rights of the consumer and discuss their operations.</li></ol>
23.	18UBTEX2	Extra Credit Course: Nutrition Science – II	<ol style="list-style-type: none"><li>1. To know about Diets their Principle</li><li>2. To understand the Diabetes and types of controlling methods</li><li>3. To learn about Fever and types of controlling methods</li></ol>





S.No.	Course Code	Course Name	Course Outcomes
<b>SEMESTER - V</b>			
24.	18UBYC51	Core Course-IX: Taxonomy of Angiosperms	<ol style="list-style-type: none"><li>1. Understand the morphological features of vegetative, inflorescence, fruits and seed characters.</li><li>2. Provide knowledge on botanical nomenclature, classifications, merits and demerits of various systems of classifications.</li><li>3. Understand the systematics positions of the selected families of the flowering plants with their economic importance.</li><li>4. Helps to have improved the knowledge on the economically important plants with their systematic treatment.</li><li>5. Provide the knowledge about the identification of plant species.</li><li>6. Students to be familiar with local flora and herbarium techniques.</li></ol>
25.	18UBYC52	Core Course-X: Plant Physiology and Biochemistry	<ol style="list-style-type: none"><li>1. Describe the physiological phenomena of plants in terms of mechanisms.</li><li>2. Will know the overview of biorhythms; stress physiology of plants.</li><li>3. Discuss different metabolic pathways.</li><li>4. Relate the characteristics and role of enzymes.</li><li>5. Comprehend nitrogen and lipid metabolism.</li><li>6. Understand photoperiodism and physiology of flowering.</li></ol>
26.	18UBYC53	Core Course-XI: Cell and Molecular Biology	<ol style="list-style-type: none"><li>1. Studied that about the structure and function of Cells.</li><li>2. Provide the knowledge on advances in cell biology.</li><li>3. Students to be studied about microscopy, cell organelles of</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			Prokaryotic and Eukaryotic cells. 4. Understand gene regulation and chloroplast and mitochondria genome organization. 5. Helps to study the significance of mitosis and meiosis cell divisions. 6. Understand about the cellular components. 7. Gain knowledge about cell biology to selected examples of changes or losses in cell function.
27.	18UBYC5P	Core Course-XII: Lab In Taxonomy of Angiosperms	1. Helps to assign various plants to their respective families. 2. Understand the floral and morphological characters of various families. 3. Helps to know the permanent herbarium preparation techniques. 4. Improve the knowledge about the plant identification. 5. Learn to the key preparations of families, Genus and species. 6. Provide knowledge about ethnobotanical studies of in and around areas.
28.	18UBYC5Q	Core Course-XIII: Lab In Plant Physiology and Biochemistry	1. Analyze the biochemical components of any plant samples. 2. Understand the photosynthetic mechanism and related events of plants. 3. Understand the role of various growth promoting substances and their action. 4. Acquire knowledge on physiological response of plants to various factors
29.	18UBY051	Major Elective Course-II: Floral	1. Understand the floral biology and reproductive parts male



S.No.	Course Code	Course Name	Course Outcomes
		Biology and Breeding System of Plants	and female flowers. 2. Know about the pollinators and their foraging behaviors. 3. Understand the fruit and seed setting behaviors in the natural habitat. 4. Identified the problems and factors related to the limited distribution of plant species.
30.	18UBY052	Major Elective Course-II: Ethnobotany and Bioresources	1. Provide a thorough knowledge of Ethanomedicinal plants. 2. Provide sufficient knowledge on Indigenous system of medicine. 3. Understand the basic knowledge of Traditional system of medicine. 4. Documented the wild edible and medicinal plants species of the local areas. 5. Studied the various types tribes and there life system. 6. Learning to the different western medicinal systems of India.
31.	18UBYS51	Skill Based Course- II: Biological Techniques and Biostatistics	1. Learning to different types of microscopes and their uses of biological science laboratories. 2. Studied the methods mounding media and slide preparations. 3. Explain the sectioning processors of the rotary microtome and their uses. 4. Understand the principle, Applications and different methods of chromatography. 5. Expose the students to the basic principles of different techniques.



S.No.	Course Code	Course Name	Course Outcomes
			6. Improve the knowledge of data collection and Biostatistics methods.
32.	18UBYS52	Skill Based Course - III: Forest Botany	<ol style="list-style-type: none"><li>1. Help the students to understand the importance and value of forest and its products.</li><li>2. Create awareness on conservation and sustainable utilization of forest and its resources.</li><li>3. Understand the ecological relationship, hydrological cycle and vegetation dynamics of forest.</li><li>4. Learn various ecosystems of forest.</li><li>5. Understand the Keystone species of wild life.</li><li>6. Helps to study various products of forest.</li></ol>
<b>SEMESTER - VI</b>			
33.	18UBYC61	Core Course-XIV: Plant Ecology and Biodiversity Conservation	<ol style="list-style-type: none"><li>1. Understand vegetation and their relationship with the ecosystem.</li><li>2. Provide a thorough knowledge about environmental biology and ecosystem.</li><li>3. Acquire knowledge on ecosystem organization, biogeochemical cycle and ecosystem stability.</li><li>4. Comprehend the information on biodiversity, threats and conservations.</li></ol>
34.	18UBYC62	Core Course-XV: Plant Biotechnology	<ol style="list-style-type: none"><li>1. Understand various media, Sterilization, Totipotency, Cell induction, Organogenesis.</li><li>2. Able to apply the Techniques to develop a standard protocol for Plant Tissue Culture.</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			3. Have comprehensive knowledge on GM technology, Bio-Safety relations and Germplasm Storage.
35.	18UBYC63	Core Course-XVI: Genetics	<ol style="list-style-type: none"><li>1. Study the principles and concept of Mendelian law.</li><li>2. Gain knowledge about mutation and population genetics.</li><li>3. Understand basic structure and function of DNA and chromosomes.</li><li>4. Provide sufficient knowledge of hybridization and concepts of genetics.</li><li>5. Understand the concept of genetic recombination's at molecular level.</li><li>6. Studied the origins of the human species.</li></ol>
36.	18UBYC6P	Core Course-XVII: Lab in Plant Ecology and Biodiversity Conservation and Genetics	<ol style="list-style-type: none"><li>1. Studied the adaptive features of plant growing in various habitats.</li><li>2. Understand the principals concept of biodiversity.</li><li>3. Provide the sufficient knowledge about different vegetations of ecosystem.</li><li>4. Helps to work out problems on Monohybrid and Dihybrid ratios.</li><li>5. Learning to the cell division methods mitosis.</li><li>6. Describe the transaction methods and species richness</li></ol>
37.	18UBYC6Q	Core Course-XVIII: Lab In Plant Biotechnology	<ol style="list-style-type: none"><li>1. Understand various media, sterilization, totipotency, cell induction, organogenesis.</li><li>2. Able to apply the techniques to develop a standard protocol for Plant Tissue Culture.</li><li>3. Have comprehensive knowledge on GM technology, bio-</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			safety relations and germplasm storage.
38.	18UBY061	Major Elective Course-III: Palynology and Pollination Biology	<ol style="list-style-type: none"><li>1. Learning about Palynology.</li><li>2. Provide the knowledge on Pollination in plants.</li><li>3. Understand the sexual incompatibility in plants.</li><li>4. Students to be familiar with embryonic processes.</li><li>5. Understand the various pollinations periods.</li><li>6. Explain the seeds dispersal mode of plants.</li></ol>
39.	18UBY062	Major Elective Course-III: Economic Botany	<ol style="list-style-type: none"><li>1. Learn economic uses of plants.</li><li>2. Provide the knowledge on Economic importance of plants.</li><li>3. Improve the knowledge of various plant cultivation techniques.</li><li>4. Study developing a framework for exploring the economic uses of plants for food, beverages, textiles, medicine, shelter and fuel.</li><li>5. The course provides students with a general background in the basic principles of botany and plant ecology.</li><li>6. Understand to the expands the human relationship with plants into the future.</li></ol>
40.	18UBYS61	Skill Based Course-IV: Horticulture	<ol style="list-style-type: none"><li>1. Improved knowledge of various techniques in horticulture and gardening.</li><li>2. Explain the basic cultivation method of horticultural crops.</li><li>3. Describe the importance of horticultural crops and their propagation methods.</li><li>4. Define the types of gardens and their establishment.</li><li>5. Learning to educate floriculture and fruit culture, green</li></ol>



S.No.	Course Code	Course Name	Course Outcomes
			house and nursery management. 6. Studied that the bonsai methods. 7. To become an entrepreneur through the knowledge of horticultural techniques.
41.	18UBYV6	Value Based Course-II: Bio fertilizers	1. Understand the cause and loss of soil fertility. 2. Provide knowledge on symbiotic bacteria. 3. Understand uses of non-symbiotic bacteria. 4. Helps to have improved blue green algal inoculants with agricultural crops. 5. Students to be familiar phosphate solubilizing microbes.