

**Govt. Pt. Shyamacharan Shukla College, Dharsiwa Raipur
(C.G.)**

Department of Botany

Course Outcome

Bsc 1st Paper 1 Bacteria, Viruses, Fungi, Lichens and Algae.

CO1. This course will provide the students to ability to understand the structure types and recombination in Bacteria.

CO.2. This course will enable the students to understand the nature, structure, replication, mode of transmission of virus and bacteriophages.

CO.3. It will provide knowledge about the concept of structure and types of lichens.

CO.4. This course will enable the students to understand the classification of fungi and will learn about the life cycle of members like Aspergillus, peziza, Puccinia, Alternaria and VAM fungi.

CO.5. Understanding of the general characters, classification, and life cycles of Nostoc, volvox, Oedogonium, Chara Ectomorphs and polysiphonia.

B.Sc. 1st Paper (II) Bryophyte, Pteridophyte, Gymnosperm and Paleobotany

CO.1. This course will provide the student Ability to understand the character, classification of Bryophyte and life cycles of Riccia, Marchantia, Pellia, Anthoceros and Moss.

CO.2. This course will enable the students to acquire knowledge about the general characteristics and affinities of Bryophyte, pteridophyte, gymnosperm along with an understanding of Hetero spory Seed habit, Apospory, Telome theory and Azolla as biofertilizer.

CO.3. This course will provide the students to understanding about the characters, classification and life cycle of Psilotum, lycopodium, Equisetum, Selaginella and Marsilea.

CO.4. Understanding about the characters, classification and life cycles of Ephedra, Pinus and Cycas.

CO.5. It will provide knowledge about the concept of Geological time scale, type of fossil and fossilization as well as some fossil and gymnosperms.

B.Sc. 2nd paper (I) Plant taxonomy, Economic botany, Plant anatomy and Embryology

CO1. This course will enable the students to acquire knowledge about Bentham and Hookers classification system, IUCN, herbarium technique and important botanical gardens.

CO.2. This course will provide the student Ability to understand the fundamentals of important characters of some selected dicot and monocot families along with their economic importance.

CO.3. This course will provide the student with an understanding to describe the basic concept of the botanical name and use of some common fiber, timber, food yielding, fruit providing, spices providing plants along with an understanding about the medicinal plants as well as beverages, and biodiesel producing plants.

CO.4. This course will enable the students to acquire an understanding about the root and shoot apical meristem and root and shoot anatomy along with anatomical anomalies in the structures of dicot and monocot stems.

CO.5. It will provide knowledge about the whole embryology of plant structure of anther, ovule, male and female gametophyte, pollination, fertilization, dicot and monocot embryo.

B.Sc 2nd Paper II Ecology and Physiology

CO.1. This course will provide the students to ability to understand the elementary knowledge about the introduction and scope of ecology along with morphological and anatomical adaptations in all plants.

CO.2. Understanding about the population and community characteristics along with the concept of ecosystem and biogeochemical cycles.

CO.3. It will provide knowledge about the concept of plant water relation, osmosis, absorption ascent and sap, transpiration mineral nutrition and their deficiency symptoms.

CO.4. This course will enable the students to acquire knowledge about photosynthetic apparatus and pigments along with ATP synthesis, C₃, C₄, C₂ cycles, aerobic, anaerobic respiration and R.Q.

CO.5. Understanding of plant growth hormones, florigen concept photoperiodism, seed dormancy and plant movements.

B.Sc. 3rd Paper I Analytical, Technology, Plant Pathology, Experimental, Embryology, Elementary Biostatistics, Environmental Pollution and Conservation.

CO.1. This course will provide the student Ability to understand the structure, principal and application of analytical instrumentation like- chromatography, oven, incubator, autoclave, centrifuge, spectrophotometer.

CO.2. Understanding the plant tissue culture techniques, growth media, totipotency, somatic hybrid, and somaclonal variations, micropropagation etc.

CO.3. Study of general principle of plant pathology, general symptom of fungal, bacterial and viral disease, mode of infection, diseases resistance and control measure.

CO.4. It will provide the knowledge about pollution, greenhouse, ozone depletion, D.O., B.O.D., C.O.D., biomagnification, eutrophication, phytoremediation, plant indicator etc.

CO.5. This course I will provide the student with an understanding to elementary biostatistics, measure of central tendency, measures of dispersal.

B.Sc. III Paper II Genetics, Molecular Biology, Biotechnology and Biochemistry.

CO.1. This course A will provide the student with knowledge to describe the cell and cell organelles, organization and morphology of chromosome, Mendel's law, linkage and crossing over etc.

CO.2. Understanding of nucleic acid, structure and forms of DNA and RNA, replication of DNA, mutation, genetic code etc.

CO.3. Study of mechanism of transcription and translation in prokaryotes, regulation of gene expression and Operon model.

CO.4. This course will enable the student to acquire knowledge about biotechnology tools and technique of recombinant DNA technology.

CO.5. This course will provide the students with an understanding Basic concept of protein, Carbohydrate, and fat.

CO.6. It will provide the knowledge about characteristic and functioning of enzyme.

M.Sc. Botany Sem I paper I Cytology

CO.1 This course will provide the student Ability to understand the structure & function of Plant cell wall and plasma membrane model & action.

CO.2. Understanding of structure and genome organization chloroplast , mitochondria.

CO.3.Understanding of structure and functional significance nucleus, ribosome, cell cycle and apoptosis.

CO.4.Understanding the structure and function of different cell organelles.

M.Sc. Botany Sem I Paper II Genetics

CO.1. This course will provide the student with an understanding Basic concept of chromosomes and special type of chromosome.

CO.2.Capable to understand mapping of bacteriophage genome ,genetic transformation and transaction in bacteria.

CO.3. Concept of genetic recombination and genetic mapping.

CO.4. Study of Alien gene transfer through chromosome manipulation, transfer of individual chromosome and chromosome segment.

M.Sc. Botany Sem I Paper III Microbiology, Phycology and Mycology

CO.1. This course will provide the student and understanding Basic concept of different type of bacteria.

CO.2.Understanding the structure, nature, isolation, transmission and economic importance of viruses.

CO.3.Study of phytoplasma with the role in causing plant disease.

CO.4. Understanding about the phycology will learn various divisions of classification and their economic important.

CO.5.understanding about the mycology will learn about the recent account of various divisions.

M.Sc. Botany Sem I Paper IV Bryophyta, Pteridophyta and Gymnosperm.

CO.1. This course will provide the student understanding bryophyta and describe its various orders with the economic & ecological importance.

CO.2. Understanding of pteridophyta with the steelar system and its various divisions.

CO.3. Study of heterospory, seed habit and fossil angiosperm.

CO.4. Understanding of Gymnosperms with characters, classification, distribution, biodiversity, biotechnology etc.

CO.5. Resemblance and difference amongst gymnosperm, pteridophyta and angiosperm.

CO.6. Detail study of Extinct gymnosperm and Extant gymnosperm.

M.Sc. Botany SEM.II. Paper I Taxonomy and Diversity of Plants

CO.1. This course will provide the student Ability to understand plant nomenclature, plant identification, hierarchy, taxonomic evidences and (GIS).

CO.2. Understanding of pre-Darwinian & post-Darwinian classification, recent modification and fossil angiosperm.

CO.3. Study of various dicot families like - Ranunculaceae, Magnoliaceae, Nymphaeaceae, Strepteliaceae, Umbelliferae, Astraceae, Solanaceae, Bignoniaceae, Labiales, Verbenaceae, Euphorbiaceae, and Moraceae.

CO.4. Study of various Monocot family like- Archidaceae, Zingiberaceae, Cyperaceae, Poaceae study of local available families.

M.Sc. Botany SEM.II. Paper II Molecular Biology

CO.1. This course will provide the student with an understanding Basic concept of RNA and DNA structure, transcription and translation.

CO.2. This course will enable the student to describe molecular cytogenesis.

CO.3. Understanding of gene structure, expression and protein sorting.

CO.4. It will provide the knowledge about mutation.

M.Sc. Botany SEM.II. Paper III Plant Physiology

CO.1. The student will be able to understand fundamental of membrane transport , translocation of water and salute.

CO.2. This course will enable the student to signal transduction and its action.

CO.3. Understanding of stress physiology and its mechanism.

CO.4. The student will be able to understand fundamental of enzymology and sensory photobiology.

M.Sc. Botany SEM.II. Paper IV Plant Metabolism

CO.1. This course will provide the student Ability to understand the concept of photosynthesis.

CO.2. Understanding of respiration and lipid metabolism.

CO.3. It will provide knowledge about nitrogen and sulphur metabolism.

CO.4. The student will be able to know plant growth regulator and elicitors.

M.Sc. Botany Sem.III Paper I Plant Devlopment and Plant Resources

CO.1. This course will provide the student Ability to understand unique features of plant development and Root development.

CO.2. Understanding of shoot development.

CO.3. Understanding of Leaf development and flower development.

CO.4. The student will be able to understand the basic concept of plant resources.

M.Sc.Botany Sem.III Paper II Ecosystem and Vegetation Ecology

CO.1. The student will be able know about the fundamental of ecosystem organisation.

CO.2. Understand of ecosystem is stability and Management.

CO.3. Understanding of vegetation organisation.

CO.4. This course will be able the student ability to understand vegetation development.

M.Sc.Botany Sem.III Paper III Biotechnology and Genetic Engineering of Plant and Microbes – (I)

CO.1. Capable to understand Basic concept of biotechnology and recombinant DNA technology.

CO.2. Describing the microbial genetic manipulation and genetic engineering of plant.

CO.3. Understanding of DNA synthesis and Sequencing.

CO.4. This course will enable the student to genomic and proteomics.

M.Sc.Botany Sem.III Paper IV Ethnobotany –(I)

CO.1 Basic concept of Ethnobotany with special reference to Chhattisgarh and India.

CO.2. It will provide the knowledge about methods and technique in ethnobotany with the special reference to Tribes of Chhattisgarh.

CO.3. Study the Botanical importance of bacteria, algae, fungi, brayophyta , pteridophyta and gymnosperm.

CO.4 understanding of ethanovaterinary medicine from plant.

CO.5. Study of major and minor forest product of Chhattisgarh.

CO.6. Describing ethanobotanical study of various plant with special reference to their medicinal importance like Neem, Amla, satavar, mahuaa, Andi, amaltas, Pipal, Tulsi, Ghritkumari ,Bhuineem.

M.Sc.Botany Sem IV Paper I Plant Reproduction and Utilisation of Resources

CO.1. Basic idea of plant production.

CO.2. Describing male gametophyte and female gametophyte.

CO.3. Student will be able to know about seed and fruits development.

CO.4., This course provide to student ability to understand utilisation of resources.

M.Sc. Botany Sem IV Paper II Pollution and Biodiversity

CO.1. Basic understanding of climate, soil and vegetation pattern of the world.

CO.2. Student will be able to understand the pollution, climate change and ecosystem.

CO.3. Understanding of biological diversity.

CO.4. Detail study of conservation strategies.

M.Sc. Botany Sem IV Paper III Plant Cell, Tissue Culture and Organ Culture

CO.1. Basic concept of Plant cell and tissue culture with the knowledge of tissue culture media.

CO.2. Understanding of various cell culture, clonal propagation organization and adventive embryogenesis.

CO.3. Understanding of somatic embryogenesis and androgenesis, somatic hybridization.

CO.4. The course will be enable the student to know fundamental concept like – cryopreservation, germ plasm storage, intellectual property rights (IPR).

CO.5. Student will be able to understand the application of plant tissue culture.

CO.6. Understanding of production of secondary metabolites /natural products.

CO.7. Detail study of transgenic in crop improvement.

M.Sc. Botany Sem IV Paper IV Ethnobotany- (II)

CO.1. The student will be able to understand of plant conservation by tribe with the special people protected area.

CO.2. Study of conservation of medicinal plant.

CO.3. Basic knowledge of Ayurvedic , allopathic , system of medicine and herbal cosmetics.

CO.4. Describing toxic plant and its harmful effect of plant and human society with the special reference to allergic plant of Chhattisgarh.

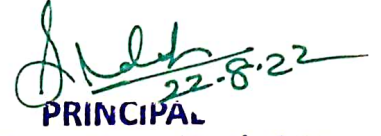
CO.5. Understanding of Endemic plant and endangered plant of Chhattisgarh.

CO.6. The student will be able to understand of technique of cultivation, marketing and importance like – Pudina, Lemongrass, Kasturibhindi, mushroom and wheat grass.

CO.7. It will provide the knowledge about various plant with special reference to the medicinal importance like – Lahsun, Bel, Arjun, Bahera, Harra, Vidya, calendula, Dhatura, Pilli kateri, Ephedra.



विभागाध्यक्ष,
वनस्पति शास्त्र विभाग,
शासकीय पं. श्यामाचरण शुक्ल महाविद्यालय,
शंकर नगर रायपुर. (छ.ग.)



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Govt. Pt. Shyamacharan Shukla College,
Shankar Nagar, RAIPUR (C.G.) 492007