

ACADEMIC SESSION-2023-2024 SEM-I(MAJOR-I GENERAL)

PAPER	TEACHER	DETAILED SYLLABUS
MJ – 1T	PROF.SASWATI ROY(S.ROY)	<p>MJ – 1T: Plant Science-I Credits 03</p> <p>UNIT-I.Introduction to microbial world- Whittaker’s five-kingdom system</p> <p>UNIT-I.Virus: General characteristics, classification (Baltimore), Economic importance.</p> <p>UNIT-I.Bacteria: General characteristics, Bergey’s Classification, Economic importance.</p>
	PROF.SHAMBHU RANA(S.R)	<p>UNIT-I.Algae: General characteristics; habitat, classification (Van Den Hoek, 1995), lifecycle patterns of <i>Volvox</i> and <i>Batrachospermum</i>, Economic importance.</p> <p>UNIT-I.Fungi: General characteristics, Classification (Ainsworth, up to Order), life cycle patterns of <i>Rhizopus</i> and <i>Agaricus</i>, economic importance. Brief account of lichen and mycorrhiza.</p>
	PROF.RACHANA BERA(R.B)	<p>UNIT-II.Bryophytes: General characteristics, classification (Proskauer, 1957), morphology, anatomy and reproduction of <i>Riccia</i>, <i>Anthoceros</i> and <i>Funaria</i>, economic importance of bryophytes.</p>
	PROF.SHAMBHU RANA(S.R)	<p>UNIT-II.Pteridophytes: General characteristics, Classification (Sporne, 1975), morphology, anatomy and reproduction of <i>Lycopodium</i>, <i>Adiantum</i> and <i>Marsilea</i>. Economic importance</p>
	PROF.SASWATI ROY(S.ROY)	<p>UNIT-III.Gymnosperms: General characteristics, Classification (Sporne, 1965), morphology, anatomy and reproduction of <i>Cycas</i> and <i>Pinus</i>. Economic importance.</p> <p>UNIT-III.Paleobotany: Geological time scale and important events, Types of plant fossils.</p>
MJ /B1P	PROF.RACHANA BERA(R.B)	<p>MJ /B1P: Practical Credits 01</p> <p>Course Outline:</p> <ol style="list-style-type: none"> 1. Electron micrographs/Models of viruses – T-Phage and Sars-CoV2. 2. Study of Curd organisms through Gram staining. 3. Study of vegetative and reproductive structure of <i>Volvox</i>, and <i>Batrachospermum</i>. 4. Study of morphology and reproductive structure of <i>Rhizopus</i> and <i>Agaricus</i>. 5. Study of morphology of thallus and reproductive structure of <i>Riccia</i>, <i>Anthoceros</i> and <i>Funaria</i>. 6. Study of morphology vegetative and reproductive structure of <i>Lycopodium</i>, <i>Adiantum</i> and <i>Marsilea</i>. 7. Study of morphology and vegetative structure of <i>Cycas</i> and <i>Pinus</i>. 8. Study of fossil types (impressions, compressions, petrification).

SEM-I(MAJOR)

PAPER	TEACHER	DETAILED SYLLABUS
SEC 1	PROF.RACHANA BERA(R.B)	<p>SEC 1: Biofertilizers Credits 03 SEC1P: Field Geology I- Basic Field Training Full Marks: 50 Course Outline: Unit- 1: General account about the microbes used as biofertilizer – Rhizobium – isolation, identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis. Unit- 2: <i>Azospirillum</i>: isolation and mass multiplication – carrier based inoculant, associative effect of different microorganisms. <i>Azotobacter</i>: classification, characteristics – crop response to <i>Azotobacter</i> inoculum, maintenance and mass multiplication. Unit- 3: Cyanobacteria (blue green algae), <i>Azolla</i> and <i>Anabaena azollae</i> association, nitrogen fixation, factors affecting growth, blue green algae and <i>Azolla</i> in rice cultivation. Unit- 4: Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield – colonization of VAM – isolation and inoculum production of VAM, and its influence on growth and yield of crop plants. Unit-5: Organic farming – Green manuring and organic fertilizers, Recycling of biodegradable municipal, agricultural and Industrial wastes – biocompost making methods, types and method of vermicomposting – field Application.</p>