

Chhindwara University, Chhindwara (M.P.)

SYLLABUS OF M.A./M.Sc./M.Com./M.H.Sc. First SEMESTER SYSTEM

SEMESTER-I (Session-2019-20)

Syllabus opted by the board of studies in M.Sc. Botany Chhindwara University

in the meeting held on 18/10/2019

Session	Course	Title of papers	Max. Marxs Theory/CCE	Max. Marxs Practical	Minimum Passing Marxs Theory/CCE/ Practical	Total Marxs
First	Paper-I	Biology and Diversity of virus, Bacteria and Fungi	50] = 50	Th. = 15	40
	Paper-II	Biology and Diversity of Algae	50		CCE = 04	10
	Paper-III	Biology and Diversity of Bryophyta and Pteridophyta	50] = 50	Prac. = 20	50
	Paper-IV	Biology and Diversity of Gymnosperms	50			
	Paper-V (if)					
			200+100			Mini- 120

Passing Marks.

Board of Studies:

I. Chairman- Dr S.K. Chite

II- Subject Expert -

1. Dr. H.K. Verma JWZ 18710719
2. Dr. S. Bharat Sakhala 18110
3. Nikhil Ranjan 18110
4. Dr. Anand Wani 18110
5. Dr. SIMPAL PATIL 219, 181101204

M. Sc. Botany Syllabus, Chhindwara University, Chhindwara 2019-2020

Semester First

Paper I – Biology and Diversity of Viruses, Bacteria and Fungi

Paper II – Biology and Diversity of Algae

Paper III – Biology and Diversity of Bryophyta and Pteridophyta

Paper IV – Biology and Diversity of Gymnosperms

Semester Second

Paper I – Taxonomy of Angiosperms

Paper II – Morphology, Anatomy and Embryology of Angiosperms

Paper III – Plant Ecology

Paper IV – Cell Biology and Genetics

Semester Third

Paper I – Plant Physiology

Paper II – Biochemistry of Plants

Paper III – Molecular Biology of Plants

Paper IV – Conservation and Utilization of Plant resources

Semester Fourth

Paper I – Biotechnology, Tissue culture and Genetic Engineering

Paper II – Instrumentation, Biostatistics and Biotechniques

Paper III – Ethnobotany/ Applied Mycology/ Industrial Microbiology

Paper IV - Limnology/ Forest Ecology/ Pollution Ecology

Handwritten signature in blue ink

Handwritten signature in blue ink
Dr. H. S. Sharma
12.10.19

M. Sc. I SEM Botany, Detailed Syllabus 2019 – 2020

Paper I - Biology and Diversity of Viruses, Bacteria and Fungi

M.M. 40 + 10 CCE

Unit 1 – Viruses

Characteristics, Nomenclature, Classification and Ultra-structure of Virions. Isolation and Purification of Viruses. Chemical nature, Replication and Transmission of Viruses. Economic importance of Viruses.

Unit 2 – Bacteria

General account of Archaeobacteria, Phytoplasma, Eubacteria, Cyanobacteria and Actinomycetes.

Unit 3 – Fungi

General characters and Classification of Fungi. Cell ultra-structure, cell wall composition and Nutrition in Fungi. Physiology and Growth in Fungi. Reproduction and Phylogeny of Fungi.

Economic importance of Fungi in Industry, Medicines and Food.

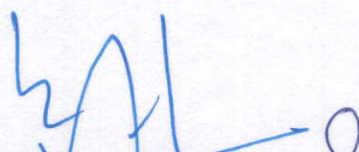
Fungal diseases of plants and animals.

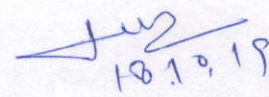
Unit 4 – Fungi

General account of Mastigomycotina (Life cycles of Synchytrium, Saprolegnia, Pythium, Phytophthora & Peronospora). General account of Zygomycotina (Life cycles of Rhizopus and Mucor). General account of Ascomycotina (Life cycles of Yeast, Aspergillus, Penicillium, Erysiphe, Neurospora & Peziza). General account of Basidiomycotina (Life cycles of Agaricus, Lycoperdon, Puccinia, Melampsora & Ustilago).

Unit 5 – Fungi

General account of Deuteromycotina (Life cycles of Cercospora, Fusarium, Colletotricum and Alternaria). Heterothallism and parasexuality. Physiological specialization in Fungi. Mycorrhiza – VAM. Mushroom cultivation. Production of alcoholic beverages, antibiotics and organic acids.




18.10.19

M. Sc. I SEM Botany, Detailed Syllabus 2019 – 2020

Paper II - Biology and Diversity of Algae

M.M. 40 + 10 CCE

Unit 1

Algae in diversifies habitats. Thallus organization in Algae. Cell ultra-structure, Classification, Pigment constitution, Reserve food and Flagella in Algae.

Unit 2

Reproduction in Algae. Algal blooms. Algal biofertilizers. Algae as food and feed. Industrial uses of Algae. Techniques of Algal culture.

Unit 3

General account of Cyanophyta (Life cycles of Nostoc, Oscillatoria & Gloeotrichia).

General account of Protochlorophyta. General account of Chlorophyta (Life cycles of Chlamydomonas, Chlorella, Pandorina, Ulothrix, Cladophora, Draparnaldiopsis & Zygnema).

General account of Charophyta (Life cycles of Chara & Nitella).

Unit 4

General account of Xanthophyta (Life cycles of Vaucheria & Botrydium).

General account of Chrysophyta. General account of Bacillariophyta (Life cycles of Pinnularia and Cyclotella).

Unit 5

General account of Phaeophyta (Life cycles of Ectocarpus, Sargassum, Dictyota & Laminaria).

General account of Rhodophyta (Life cycles of Polysiphonia, Batrachospermum, Porphyra & Gracillaria).

HAL

Salman

18.10.19

M. Sc. I SEM Botany, Detailed Syllabus 2019 – 2020

Paper III - Biology and Diversity of Bryophyta & Pteridophyta

M.M. 40 + 10 CCE

Unit 1 – Bryophyta

General characteristics and Classification of Bryophyta. Distribution, Ecology and Economic importance of Bryophyta. General account of Marchantiales (Life cycles of Marchantia, Trigonina, Plagiochasma & Sphaerocarpus). General account of Jungermanniales (Life cycles of Pellia & Porella).

Unit 2 – Bryophyta

General account of Calobryales & Takakiales.

General account of Anthocerotales (Life cycles of Anthoceros & Notothylas).

General account of Bryopsida (Life cycles of Sphagnum and Polytrichum).

Comparative study of gametophytes and sporophytes in Bryophyta.

Unit 3 – Pteridophyta

General characters and classification of Pteridophytes. Stellar system. Homospory, heterospory and seed habit.

Geological time table, Fossilization and types of fossils.

General account of Psilophytales.

Unit 4 – Pteridophyta

General account of Psilotales (Life cycle of Psilotum),

General account of Lycophyta (Life cycles of Lycopodium, Isoetes and Selaginella).

General account of Sphenopsida (Life cycle of Equisetum).

Unit 5 – Pteridophyta

General account of Filicophyta – Life cycles of Ophioglossum, Osmunda, Dryopteris, Marsilea, Salvinia and Azolla.

Diversity and distribution of Pteridophytes in India.

Handwritten initials in blue ink.

Handwritten signature 'S. K. Saha' in blue ink.

Handwritten date '18.10.19' in blue ink.

M. Sc. I SEM Botany, Detailed Syllabus 2019 – 2020

Paper IV - Biology and Diversity of Gymnosperms

M.M. 40 + 10 CCE

Unit 1 –

General characteristics and Classification of Gymnosperms. Distribution of living Gymnosperms in India. Economic importance of Gymnosperms. Indian contribution of Gymnosperms.

Unit 2 –

General account of Fossil gymnosperms – Lyginopteris, Glossopteris, Caytonia, Williamsonia and Pentoxylon.

Unit 3 –

General account of Cycadeoidales, Cycadales, Cordaitales and Ginkgoales.

Unit 4 –

General account of Coniferales – Life cycles of Pinus, Taxus, Biota, Cupressus & Araucaria.

Unit 5 –

General account of Gnetales – Life cycles of Ephedra, Welwitschia & Gnetum.

Dr. S. S. Sharma
2019

18.10.19

Semester - I

Practical Scheme for Practical - I (Based on Paper I and II)

1. Exercise based on diversity of fungi/ 10
2. ~~Bacterial~~
2. Exercise based on Algae 10
3. Bacterial Culture and staining 5
4. Collection of local algal flora 5
5. Spots based on both papers (I & II) 10
6. viva voce 05
7. Sessional 05

M. Chit