

M.Sc. Botany, Choice Based Credit System

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Course Structure and Scheme of Examination

SEMESTER I

Code	Course	C/E/S	L	P	Credit	Remarks
BOT 101	Bacteriology, Virology & General Microbiology	Core	3	0	3	
BOT 102	Biology and Diversity of Fungi and Plant Pathology	Core	3	0	3	
BOT 103	Biology and Diversity of Algae, Bryophytes and Lichens	Core	3	0	3	
BOT 104	Biology and Diversity of Pteridophytes and Gymnosperms	Core	3	0	3	
BOT 105	Practical Course Based on Theory Course 101 & 102	Core	0	3	3	
BOT 106	Practical Course Based on Theory Course 103 & 104	Core	0	3	3	
BOT-107	Assignment/Personality development	Core			1	
BOT-108	Seminar-I	Core			1	
BOT-109	Comprehensive viva-voce exam	Virtual credit			4	

Total Credit Value: #24

SEMESTER II

Code	Course	C/E/S	L	P	Credit	Remarks
BOT 201	Ecology-I Climatology, Soil Science and Autecology	Core	3	0	3	
BOT 202	Angiosperm Anatomy, Embryology and Palynology	Core	3	0	3	
BOT 203	Water Relations, Growth and Development	Core	3	0	3	
BOT 204	Plant Biochemistry and Metabolism	Core	3	0	3	
BOT 205	Practical Course Based on Theory Course 201 & 202	Core	0	3	3	
BOT 206	Practical Course Based on Theory Course 203 & 204	Core	0	3	3	
BOT-207	Assignment/Personality development	Core			1	
BOT-208	Seminar-II	Core			1	
BOT-209	Comprehensive viva-voce exam	Virtual credit			4	

Total Credit Values: #24



SEMESTER III

Code	Course	C/E/S	L	P	Credit	Remarks
BOT 301	Angiosperm Morphology & Taxonomy	Core	3	0	3	
BOT 302	Ecology-II Synecology, Ecosystematology & Phytogeography	Core	3	0	3	
BOT 303	Major Elective I	1. Ethnobotany	3	0	3	
		2. Agroecology				
BOT 304	Major Elective II	1. Plant Biotechnology: In Vitro Culture, Genetic Engineering and IPR Issue	3	0	3	
		2. Pollution Ecology				
BOT 305	Practical - I	Core	3	0	3	
BOT 306	Practical - II	Core	3	0	3	
BOT-307	Assignment/Personality development	Core			1	
BOT-308	Seminar-II	Core			1	
BOT-309	Comprehensive viva-voce exam	Virtual credit			4	

Total Credit Values: #24

The image shows several handwritten signatures and initials in black ink, likely representing the faculty members who have reviewed or approved the syllabus. There are approximately six distinct signatures scattered across the lower half of the page.

***SEMESTER IV**

Code	Course	C/E/S	L	P	Credit	Remarks
BOT 401	Genetics, Plant Breeding and Evolution	Core	3	0	3	
BOT 402	Cytology and Molecular Biology of Plants	Core	3	0	3	
BOT 403	Major Elective I	1. Industrial Microbiology	3	0	3	
		2. Stress Physiology				
BOT 404	Major Elective II	1. Bioinstrumentation	3	0	3	
		2. Plant Pathology				
BOT 405	Practical - I	Core	3	0	3	
BOT 406	Practical - II	Core	3	0	3	
BOT-407	Assignment/Personality development	Core			1	
BOT-408	Seminar-II	Core			1	
BOT-409	Comprehensive viva-voce exam	Virtual credit			4	

Total Credit Values: (Total credits = 24)

NOTE: Lecture (L): 1 hr = 1 Credit

Tutorial (T): 2 hr = 1 Credit

Practical (P): 2 hr = 1 Credit

Total Core Course:

Total Elective:

Total Soft Course:

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SESSION

JULY 2017

**JIWAJI UNIVERSITY
GWALIOR (M.P.)**

BOT (01) BACTERIOLOGY

BACTERIOLOGY

UNIT I:

- 1. Historical introduction
- 2. Identification of bacteria
- 3. General characteristics of *Escherichia coli* and *Chlamydia*
- 4. Diseases caused by *Escherichia coli* and *Chlamydia*
- 5. Mode of multiplication: bacteria, autotrophy, heterotrophy, symbiosis

UNIT II:

- 1. General aspects of sterilization culture media and culture techniques
- 2. A general view about bacterial types
- 3. Bacterial diseases caused by *Escherichia coli* and *Chlamydia*

SYLLABUS

UNIT III:

- 1. General properties and classification of viruses
- 2. Cultivation of virus and virus assay
- 3. Transmission of plant viruses and control measures
- 4. Oncogenic viruses and onco-oncogenes
- 5. Viral diseases: measles, Hepatitis, AIDS and Rabies

FOR

UNIT IV:

- 1. Bacteria and parasitology
- 2. Microbiology - general, industrial and medical
- 3. Microbiology - general, industrial and medical diseases caused by them

M.Sc. (BOTANY)

UNIT V:

- 1. Biological conversion of waste products with particular reference to alcohol and biogas
- 2. General aspects of biotechnology, properties of enzymes and inhibitors
- 3. Allergens and food allergens
- 4. Mycotoxins and food hazards

SEMESTER SYSTEM

PRACTICALS:

1. Preparation of culture media
2. Isolation of *Bacillus* and *Chlamydia* from soil and nodules
3. Various methods of bacterial staining to study cell wall, endospore, capsule and flagella
4. Identification of microbial agents by using biochemical tests: *Escherichia coli*, *Staphylococcus*, *Bacillus*, *Facultative anaerobe*, *Microaerophilic*, *Microaerophilic*, *Microaerophilic*
5. Construction of bacteriophage
6. Identification of bacteria by biochemical tests
7. Isolation of microorganisms - resistant strains of *Staphylococcus*
8. Culture of virus in bacterial cells by different methods
9. Purification of DNA and study of chemical structure and function of DNA
10. Virus cultivation: identification by electron microscopy and serological tests
11. Study of complex systems of plant virus: *Tomato yellow leaf curl virus* and *Tomato leaf curl virus*
12. Bacteriophage culture
13. Isolation and identification of bacteria: *Escherichia coli* and *Staphylococcus aureus* and their uses in different industries
14. Use of selected media for isolation of bacteria
15. Identification of bacteria by biochemical tests

SESSION

2015 - 2017



