

Course code	Course Title	C	H	I	E	T
17P1BMC3	MYCOLOGY AND PLANT PATHOLOGY	6	6	25	75	100

Unit I Mycology 20 Hrs

General features - occurrence and distribution. Classification of fungi by Alexopoulos and Mims (1979). General characteristics of Gymnomycota, Mastigomycota and Amastigomycota. Thallus organization - modifications of mycelium - cell structure and fruit bodies.

Unit II 15 Hrs

Fungal nutrition - mode of nutrition (saprophytic & parasitic) - nutritional requirement - culture media - natural substrates of fungi - biotrophic, semi - biotrophic and necrotrophic. Mode of growth - culture of fungi - homothallism and heterothallism in fungi - homokaryons and heterokaryon.

Unit III 20 Hrs

Reproduction and life cycles – para-sexual cycle - reduction in sexuality - fungal genetics. Spore dispersal mechanism. Physiological specialization. Economic importance of fungi in baking, brewing and pharmaceutical industries. Deterioration of wood, paper and leather.

Unit IV Plant pathology 15 Hrs

Classification of diseases. Symptoms of plant diseases. Stages in disease development – deposition, penetration and infection. Dissemination of pathogens. Defense mechanism of plants. Disease control – cultural, biological and chemical methods (copper fungicide and organo phosphorous). Disease forecasting.

Unit V 20 Hrs

Symptom, etiology, disease cycle and control measures of the following diseases:

Fungal - paddy blast and red rot of sugarcane. Bacterial - angular leaf spot of cotton and citrus canker. Viral - leaf curl of papaya and yellow mosaic disease of bhendi. Mycoplasma - little leaf of brinjal.

REFERENCES

MYCOLOGY

1. Burnet, J. H., The Fundamentals of Mycology, 1971, ELBS Publications, London.
2. Alexopoulos, C. J and Mims, C. W., Introductory Mycology, 1979, Wiley Eastern Ltd., New York.
3. Bessey, E. A., Morphology and Taxonomy of Fungi, 1979, Vikas Publishing House, New Delhi.
4. Bold, H. C. *et al.*, Morphology of Plants and Fungi, 1980, Harper and Row Publishing, New York.

5. Sharma, P. D., The Fungi, 1987, Rastogi and Co., Meerut.
6. Mehrotra, R. S and Aneja, K. R., An Introduction of Mycology, 1990, Wiley Eastern, New Delhi.
7. Alexopoulos, C. J., Mims, C. W and Black well, M, Introductory mycology (4thed), 1996, John Wiley sons Inc., USA.
8. Carlile, M. J., Watkims, S. C and Graham, The Fungi, 2001, Academic press, a Harcourt Science and Technology Campus. London, UK.
9. Vashista, B. R and Sinha, A. K., Botany for Degree Students – Fungi, 2007, S. Chand and Co.

PATHOLOGY

1. Singh, R. S., Plant Diseases, 2003, Oxford & IBH publications, New Delhi. Pp. 686.
2. Mehrotra, R. S and Aggarwal, A., Plant Pathology, 2003, Tata McGraw- Hill Publishing Company Ltd. Pp. 846.
3. Singh, R. S., Plant Diseases, 2005, Oxford & IBH Publications, New Delhi. Pp. 720.
4. Arumugam, N. Kumaresan, V and Regland, A., Fungi & Plant pathology. 3rd edition, 2016, SARAS Publications. Nagarkoil. Pp. 1- 468,

PRACTICALS

Mycology

1. Isolation of fungi from various sources.
2. Culture of fungi - Pure culture
3. Slide culture techniques.
4. Isolation of fungi from cow dung.
5. Observation of fruit bodies and other structure of fungi.

Pathology

1. Observation of symptoms of plant diseases.
2. Herbarium preparation.
3. Observation of stages of pathogenic fungi in the infected plant.
4. Protocol for controlling of fungal pathogens.