Institute of Microbiology and Molecular Genetics
Faculty of Life Sciences
University of the Punjab, Lahore

Course Outline

Programme	BS	Course Code	MMG204	Credit Hours	3(2+1)
Course Title	**MYCOLOGY**				

COURSE INTRODUCTION

The course on Mycology will cover the introduction to fungi and their morphological features. The students will also study the taxonomy, life cycles, ecology, major classes of fungi, and physiological and biochemical processes. It will also cover the interaction of fungi with other organisms and the environment.

LEARNING OUTCOMES

On the completion of the course, the students will be able to:

1. Identify the major groups of fungi and their ecological roles.
2. Explain the physiological and biochemical processes unique to fungi.
3. Apply mycological knowledge to understand fungal interactions with other organisms and environments.

COURSE CONTENT

Introduction to Mycology: Definition and overview, Fungal distribution and importance, Fungal structure and reproduction, Fungal life cycle, Fungal nutritional, physiological and metabolic characteristics, Fungal systematics: Classification of fungi into phyla, The Cryptomycota and Microsporidia, The Chytridiomycota and Glomeromycota, The Ascomycota, The Basidiomycota, The human fungal mycobiome, Mycosis: Superficial, cutaneous, subcutaneous and systemic mycosis, Fungal pathogens that cause lower respiratory tract diseases: Cryptococcosis, Histoplasmosis, Blastomycosis, and Coccidioidomycosis, Human uses of fungi in food, medicine and industry, Symbiotic relationships of fungi: Lichens and mycorrhizae.

PRACTICALS

General characters and morphology of fungi, Cultivation of Fungi, Yeast morphology, Identification of fungi, Study of the unicellular and mycelial form of hyphae (septate and aseptate), Distinguishing characters of different phyla with suitable examples, Study of sexual and asexual reproductive structures in different groups of fungi. Study of saprophytic, parasitic, and air-borne fungi belonging to different phyla.

TEXTBOOKS AND READING MATERIAL

1. Alexopoulos, C.J., Mims, C.W., & Blackwell, M. (2007). Introduction to Mycology, 4th Edition, John Wiley & Sons, INC, New York, United States.
2. Pommerville, J.C. (2018). Eukaryotic microorganisms: Fungi, In: *Fundamentals of Microbiology*, 12th Edition (pp. 597-631), Jones & Bartlett Learning, Burlington MA, United States.

3. Willey, M.W., Sherwood, L.M., & Woolverton, C.J. (2017). Fungi (Eumycota), In: *Prescott's Microbiology,* Tenth Edition (pp. 583-596), McGraw-Hill Education, New York, United States.
4. Khan, A.G., & Usman, R. (2005). Laboratory manual in Mycology and Plant Pathology, Botany Department, Arid Agriculture University, Rawalpindi,
5. Cappuccino, J.G., & Sherman, N. (2002). The Fungi, In: Microbiology, A Laboratory Manual, 6th Edition (pp. 227-241), Pearson Education, Inc. Singapore.

ASSESSMENT

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on activities, short tests, projects, practicals, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on a term paper, research proposal development, fieldwork, report writing, etc.