MSc Botany Syllabus

MSc Botany Syllabus mainly consists of core and elective subjects spread across the varied aspects of this vast scientific discipline. Though the syllabus of this program might vary from one university to another, we have listed down some of the major topics covered in MSc Botany below:

Phycology	Microbiology
Plant Anatomy and Developmental Biology	Cell Biology and Biomolecules
Bryophytes, Pteridophytes and Gymnosperms	Mycology and Plant Pathology
Taxonomy of Angiosperms	Genetics and Genomics
Palaeobotany and Palynology	Plant Physiology and Biochemistry
Phytochemistry and Pharmacognosy	Plant Molecular Biology and Biotechnology
Microbial Biotechnology	Computer Applications and Bioinformatics

MSc Botany Syllabus in Detail

Now, let's elaborate these sub-disciplines in a detailed manner to understand what they entail:

Phycology

Also referred to as Algology, Phycology is a subdiscipline of Botany that focuses on the study of algae. In the aquatic ecosystem, algae are important as primary producers. Algae have a pivotal role in ecology as they are a vital element of food chains, especially in the planktonic forms. Further, in coastal areas, there are several large species of algae that are used as supplement food sources by humans. Studying Phycology under the MSc Botany syllabus, you will learn about the different forms of algae organisms

such as eukaryotic, prokaryotic as well as photosynthetic along with their role in ecology.

Microbiology

Another subdiscipline added under the MSc Botany syllabus is Microbiology. It is the study of various microscopic organisms such as bacteria, protozoa, viruses, archaea and fungi. In Microbiology, you will be studying about physiology, ecology, cell biology, evolution, clinical aspects of microorganisms, including host response to these agents

Also Read: BSc in Microbiology syllabus

Plant Anatomy and Developmental Biology

Plant Anatomy is defined as the study of the detailed structure of plants comprising of leaf, stem, roots, flowers and fruits, whereas Development Biology focuses on how multicellular plants are developed from a single zygotic cell. This sub-discipline mainly assesses how the development of a plant takes place and how the different biological processes facilitate its growth.

Bryophytes, Pteridophytes and Gymnosperms

Bryophyta is the most primitive class which have a dependent flagellated sperm and sporophyte and are suitable for fertilization and dependent on external water medium. Pteridophytes is a class of fern plants and are of higher order composed of an independent sporophyte. Gymnosperms are the nonflowering seed-bearing plants which get adapted to terrestrial environments in order to survive in harsh weather conditions.

Mycology and Plant Pathology

Mycology is defined as the study of fungi, how they interact in different environments as well as with other organisms. Moreover, Plant Pathology is the science of plant diseases. Mycology and Plant Pathology are an incremental part of the MSc Botany syllabus as one focuses on the structural and behavioural aspects of fungi while the other narrows down on the several features, factors and causes of diseases in plants and the methods of managing and controlling plant diseases.

In the MSc Botany Syllabus, students study plant pathology which covers various aspects, factors and causes of diseases in plants and what are the methods of managing and controlling plant diseases.

Palaeobotany and Palynology

Palaeobotany is the study of fossil plants which are found in the layers of earth and in certain kinds of rocks. It is the most complicated sub-discipline studied under the MSc Botany syllabus as fossil plants are difficult to obtain in the layers of the earth and hence analysing them becomes quite a rigid procedure. Palynology is a scientific discipline concerned with the study of pollen grains and spores which are usually found in geological and archaeological deposits.

Phytochemistry and Pharmacognosy

Phytochemistry is a combined subfield of Botany and Chemistry. It is the study of chemicals derived from plants which are also called phytochemicals. These phytochemicals are utilised by plants to safeguard themselves from insect attacks and diseases. On the other hand, Pharmacognosy is a related field of Phytochemistry and is concerned with the study of plants or other natural sources which are used as a possible source of drugs and medicines.

Microbial Biotechnology

The use of microorganisms (such as bacteria, fungi, algae, protozoa and viruses) to obtain an economically valuable product or activity at a commercial or large scale is called Microbial Biotechnology or Industrial Microbiology.

Computer Applications and Bioinformatics

Bioinformatics applications are associated with the amalgamation of mathematics, biology, computer science, and statistics for depicting and determining biological data. Bioinformatics develop biological software and algorithms for computers in order to record and analyse data related to biology.