



PARVATHANENI BRAHMAYYA
SIDDHARTHA COLLEGE OF ARTS & SCIENCE
Autonomous
 Siddhartha Nagar, Vijayawada-520010
Re-accredited at 'A+' by the NAAC

Course Code				23BOMAP232			
Title of the Course				PLANT PATHOLOGY AND PLANT DISEASES			
Offered to: (Programme/s)				B.Sc. Hons Botany			
L	0	T	0	P	2	C	1
Year of Introduction:		2024-25		Semester:			3
Course Category:		MAJOR		Course Relates to:		GLOBAL	
Year of Revision:		NA		Percentage:		NA	
Type of the Course:				Skill development			
Crosscutting Issues of the Course :				NA			
Pre-requisites, if any				KNOWLEDGE OF PLANT DISEASES AT +2 LEVEL			

Course Description:

An overview of the course content and objectives.

This course is an introduction to the science of plant pathology. Topics include causal agents of plant diseases, symptoms and diagnosis, modes of infection and spread, effects of the environment on disease development, and methods of disease control. The course will also cover plant's defense mechanisms, and conventional and novel control strategies. Students have the responsibility in learning the fundamentals in plant pathology through the use of the required textbook, lecture notes, and lab materials. The students are particularly required to understand the concepts, and theories and some memorization (botanical and pathogen scientific names, etc.).

Course Aims and Objectives:

S.NO	COURSE OBJECTIVES
1	To understand the principles of host-pathogen interactions.
2	To understand how diseases occur in plants.
3	To learn the defense mechanisms plants have against plant pathogens.
4	To identify how other microorganisms and humans have been able to manipulate the host-pathogen interaction.
5	Knowledge to reduce and manage diseases.

Course Outcomes

At the end of the course, the student will be able to...

CO NO	COURSE OUTCOME	BTL	PO	PSO
CO1	Identify the knowledge, skills, attitudes, and personal attributes expected of them to successfully complete their program of studies	K2	2	1
CO2	Facilitate to develop of learning goals and objectives in their courses and programs, in prioritizing and focusing the learning experiences, and in the selection of appropriate assessment tools and	K6	2	1
CO3	Handle equipment and instruments in plant pathology laboratory.	K3	2	1
CO4	Isolate plant pathogenic microbes.	K2	2	1
CO5	Identify the plant diseases based of histopathological observations.	K2	2	1

CO-PO MATRIX									
CO NO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1		2						2	
CO2		3						3	
CO3		3						3	
CO4		2						2	
CO5		2						2	

Course Structure

This lab list covers the key areas of plant pathology and plant diseases course, providing hands-on practice with handling equipment and instruments used in plant pathology laboratory.

Unit 1: [Plant pathogens, survival and dispersal] (6Hrs)

Lab 1: Familiarity with general plant pathological laboratory and field equipment.

- **Dataset** (web link) / **Experiment:** <https://youtu.be/F8w-0AsdhtY>
- **Tasks:** Identification of different types of lab and field equipment

Unit 2: [Infection and pathogenesis in plants] (6Hrs)

Lab 1: Infection process of plant diseases (Pre penetration, penetration, Post penetration).

- **Dataset** (web link) / **Experiment:** <https://youtu.be/MML5c6H5kpk>

- **Tasks:** Identification of phases of penetration in plants.

Unit 3: [Plant disease management]

(6Hrs)

Lab 1: Plant disease management practices.

(1) Physical

(2) Chemical

- **Dataset** (web link) / **Experiment:** <https://youtu.be/lgZHqXCgz5E>
- **Tasks:** Applying management practices in daily life.

Unit 4: [Diseases of field crops]

(6Hrs)

Lab 1: Field Crops

(1) Blast of Rice: symptoms, disease cycle, management practices.

(2) Phytophthora blight: symptoms, disease cycle, management practices.

(3) Ticca leaf disease: symptoms, disease cycle, management practices.

Dataset (web link) / **Experiment:** https://youtu.be/7_7gu9lG5TY

Tasks: Identification of disease spots on plant parts.

Unit 5: [Diseases of horticultural crops]

(6Hrs)

Lab 1: Horticultural Crops

(1) Little leaf of brinjal: symptoms, disease cycle, management practices.

(2) Yellow mosaic of okra: symptoms, disease cycle, management practices.

(3) Anthracnose: symptoms, disease cycle, management practices.

Dataset (web link) / **Experiment:** <https://youtu.be/QHZ1Z8T3oUM>

Tasks: Identification of disease spots on plant parts.

Question Paper Pattern for Practical Course

(A) Semester End Lab Examination

23BOMAP232: PLANT PATHOLOGY AND PLANT DISEASES

Offered to: B.Sc. Hons Botany

Semester: III

Max.Marks: 50 (CIA+SEE)

Max. Time: 3 Hrs

I. Answer the following.

Max. Marks: 30 Marks

Q1. Take T.S. of the material 'A' (Fungi), make a temporary mount and comment about identification plant pathogenic fungi. 8M

Q2. Take T.S. of the material 'B' (Bacteria), make a temporary mount and comment about identification plant pathogenic bacteria. 8M

Q3. Take T.S. of the material 'C' (Nematode), make a temporary mount and comment about identification plant pathogenic nematode. 8M

Q4. Write the critical notes and identify 'D' & 'E'. 3M

Q5. Identify and write a comment on 'F' Koch's postulates in plant diseases. 3M

II Viva

3 Marks

III Record

2 Marks

(B) CONTINUOUS ASSESMENT(Internal)

15 MARKS

15 marks for the continuous assessment (Day to day work in the laboratory shall be evaluated for 15 marks by the concerned laboratory teacher based on the regularity/record/viva). Laboratory teachers are mandated to ensure that every student completes 80%-90% of the lab assessments.

TOTAL: (A)+(B) =

50 MARKS
