

Programme	BS Botany	Course Code	BOT-315	Credit Hours	2
Course Title	Plant Pathology (Theory)				
Introduction					
The course is designed to provide an adequate knowledge about basic concepts of important plant pathogens and pathogenic diseases, pattern of disease development and disease cycle. It is generally aimed to familiarize students about the identification of major plant pathogens such as bacteria, fungi, nematodes, viruses and other microbes that cause huge economic losses to the farmers.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
<ul style="list-style-type: none"> • Identify the symptoms of various diseases and their causal agents. • Understand the host-pathogen interactions and defense mechanisms. • Explain the control measures for plant diseases. • Describe the concepts of what constitutes disease in plants and identify major principles of plant pathology. • Be able to describe aspects of integrated pest management and to explain the impact of plant diseases on human affairs. 					
Course Contents					
<p>Introduction:</p> <ul style="list-style-type: none"> • History and classification of plant pathogens and pathogenic diseases. • Symptoms, causes and patterns of their development. • Loss assessment and plant pathogen control and systemic resistance. • Epidemiology and disease forecast. • The effect of environmental factors on disease development. <p>Viruses:</p> <ul style="list-style-type: none"> • Taxonomic position and classification of economically important viral plant pathogens. • Symptoms, causes, disease cycle, patterns of development and management of: • Sugarcane mosaic virus disease. • Cotton leaf curl disease. • Tobacco Mosaic virus disease. <p>Bacteria:</p> <ul style="list-style-type: none"> • Economically important bacterial plant pathogens. • Symptoms, causes, disease cycle, patterns of development and management of: • Blight of cereals and grasses • Ring rot of Potato • Crown Gall disease <p>Fungi:</p> <ul style="list-style-type: none"> • Important Pathogenic diseases of crop plants and fruit trees caused by fungi • Brief Introduction and importance • Symptoms, causal agent, disease cycle and management strategies for: • Apple Scab Disease • Rusts (<i>Puccinia</i>, <i>Phragmidium</i>, <i>Uromyces</i> etc.). • Smuts (<i>Ustilago</i>, <i>Urocystis</i>, <i>Thekaphora</i> etc.). • Powdery Mildews (<i>Erysiphe</i>, <i>Phyllactinia</i>, <i>Microsphaera</i>, <i>Podosphaera</i> etc). • Downy Mildews • White Rust <p>Nematodes:</p> <ul style="list-style-type: none"> • Introduction and importance of plant parasitic nematodes • Taxonomy of plant parasitic nematodes; Nematode feeding habits, types of plant parasitic nematodes according to feeding habits. • Impact of parasitic nematodes on plant health and their management. • Root Knot Disease of Vegetables • Potato Cyst disease • Economic importance of plant diseases • Future prospects of plant pathology • Introduction to molecular techniques and their application in Plant pathology 					