



एस० एम० कॉलेज  
चन्दासी

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पत्रांक : SMC/532/2021-22

दिनांक : 03.03.2022

सेवा में,

कुलसचिव महोदय,  
एम०जे०पी० रुहेलखण्ड, विश्वविद्यालय,  
बरेली, उ०प्र०।

विषय: नवीन शिक्षा नीति-2020 के अनुपालन में महाविद्यालय द्वारा तैयार किया गया एवं संचालित व्यावसायिक पाठ्यक्रम के सन्दर्भ में।

महोदय,

सूच्य है कि नवीन शिक्षा नीति-2020 के अन्तर्गत सत्र 2021-22 से प्रथम वर्ष में प्रवेश लेने वाले प्रत्येक विद्यार्थी को एक व्यावसायिक कोर्स आवंटित किये जाने हेतु निर्देशित किया गया था।

उक्त के अनुपालन में विद्यार्थियों के आवंटित विषयों के पाठ्यक्रम दिनांक 20.11.2021 को अनुमोदन हेतु विश्वविद्यालय में प्रस्तुत किये गये थे जिस पर विश्वविद्यालय द्वारा मौखिक रूप से कतिपय संशोधन किये जाने की अपेक्षा की गई थी।

आपकी अपेक्षा अनुरूप इन पाठ्यक्रमों में संशोधन कर दिये गये हैं। संशोधित पाठ्यक्रम संलग्न सूची-1 के अनुसार विश्वविद्यालय प्रेषित है।

आपसे विनम्र निवेदन है कि संलग्न व्यावसायिक कोर्स के पाठ्यक्रमों को अनुमोदित कर आवश्यक कार्यवाही पूर्ण कर अवगत कराने की कृपा करें।

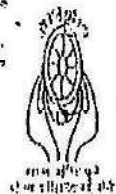
धन्यवाद!

संलग्नक: उपरोक्तानुसार।

(डॉ० हेमन्त कुमार)  
Principal  
S. M. College  
Chandausi

(डॉ० प्रवीण कुमार)  
समन्वयक- वोकेशनल / स्किल सेल  
मो० नं०- 9760480884

Sh. S.K. Pandey / A.L. Adar  
कुलसचिव



**Mahatma Jyotiba Phule Rohilkhand University, Bareilly**

**महात्मा ज्योतिबा फुले रुहेलखण्ड विश्वविद्यालय, बरेली**

A State University - Government of U.P.; NAAC Accredited; ISO 9001:2015 Certified




## Syllabus for Course Title: Plant Pathology


Name	Designation	Affiliation
<b>Steering Committee</b>		

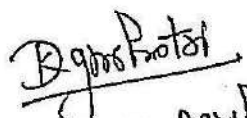
### Syllabus Developed by:

S. No.	Name	Designation	Department	College/ University
1	Dr. P.B. Tiwary Subject Expert	Associate Professor	Department of Botany	S.M. College, Chandausi, Sambhal
2	Dr. A.K. Buts Subject Expert	Associate Professor	Department of Botany	D.S. College, Aligarh
3	Dr. D.K. Agnihotri Subject Expert	Assistant Professor	Department of Botany	S.M. College, Chandausi, Sambhal

Programme /Class: Certificate	Year: First	Semester: First
Course Code:	Course Title: Plant Pathology	
Course outcomes: <ul style="list-style-type: none"><li>• Job oriented course</li><li>• To study the nature properties and occurrence of local plant diseases.</li><li>• To Protect the crop from loses due to diseases</li><li>• To produce disease free certified seed production</li><li>• Crop improvement and varietal resistance</li><li>• To restrict the spread of plant diseases</li><li>• Successful Management of plant diseases</li><li>• Post-Harvest diseases Management</li><li>• Assisting in breeding of disease resistant varieties</li><li>• To train the extension workers and subject matter specialist in order to bridge the gap between pathologist and farmers for better crop-production.</li></ul>		

  
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 Department of Botany  
 S. M. College, Chandausi

  
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 Chandausi

  
**Dr. D.K. Agnihotri**

  
**Dr. A.K. Buts**

# Syllabus of Plant Pathology

## Theory and Practical

Sem- I :-

Credit hrs

Fundamentals of Plant Pathology

1/30

Practical 2/80

Sem- II :-

Principles of Plant Pathology

1/30

Practical 2/80

Sem- III :-

Introductory Mycology and fungal disease

1/30


Practical 2/80


Sem- IV :-

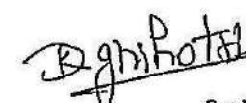
Introductory Bacteriology and bacterial disease

1/30

Practical 2/80

  
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Chandauli

  
(Dr. D. K. Agnihotri)

## Course Name: Plant Pathology / SMC

### Semester - 1

#### **Course Title: Fundamentals of Plant Pathology**

1 Credit

1/30

- |  |   |
|--|---|
| 1. Introduction of Plant Pathology   | 3 |
| 2. Basic knowledge of plant disease , scope and objectives of plant Pathology.                         | 3 |
| 3. History of plant pathology with special reference to Indian work.                                   | 3 |
| 4. Different terms and concepts of plant pathology.  | 3 |
| 5. Cause and classification of plant diseases.   | 4 |
| 6. Important plant pathogenic organisms / symptoms of fungi , bacteria, virus, mycoplasma , nematodes. | 5 |
| 7. Mode of infection.  | 3 |
| 8. Fungicides and antibiotics.   | 6 |

## Course Name: Plant Pathology/SMC

### Semester-II


#### **Course Title: Principles of Plant Pathology**

1 Credit

1/30

- |   |   |
|---|---|
| 1. Importance, definitions and concepts of plant pathology.   | 3 |
| 2. Biotic and abiotic causes of plant diseases.   | 4 |
| 3. Role of environment and host nutrition on disease development.                                   | 4 |
| 4. Host parasite interaction.   | 2 |
| 5. Disease development, role of enzymes , toxins , growth regulators.                               | 5 |
| 6. Genetic resistance , molecular basis of resistance , genetic engineering for disease resistance. | 4 |
| 7. Instrumentation.   | 4 |
| 8. Culture medium- Types, Preparation and Utility   | 4 |

  
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**Course Name : Plant Pathology/SMC**

**Semester- III**

**Course Title: Introductory Mycology**

1 Credit

1/30

- |  |   |
|--|---|
| 1. Introduction, terms and basic concepts.   | 3 |
| 2. Importance of mycology in agriculture.  | 3 |
| 3. History of mycology.  | 2 |
| 4. Fungal diversity and classification of fungi.   | 3 |
| 5. Reproduction in fungi.  | 3 |
| 6. Comparative morphology, characters of different groups upto generic level – Ascomycota, Basidiomycota, Deuteromycota, Oomycota. | 4 |
| 7. Lichens and mycorrhiza.   | 2 |
| 8. Morphological and anatomical symptoms of fungal diseases.   | 3 |
| 9. Local Significant fungal diseases, including symptoms, etiology, disease-cycle and control                                      | 7 |

**Course Name : Plant Pathology/SMC**

**Semester- IV**


**Course Title: Introductory Plant Bacteriology**


1 Credit

1/30

- |   |   |
|---|---|
| 1. History and introduction to prokaryotic organisms.   | 3 |
| 2. Bacterial cell structure, shape, size, flagellation.   | 3 |
| 3. Bacterial nutrition, survival and dissemination.   | 3 |
| 4. Classification and nomenclature of phytopathogenic prokaryotes.  | 3 |
| 5. Growth, nutritional requirements, reproduction of phytopathogenic bacteria.                                | 4 |
| 6. Preparation and preservation of bacterial culture.   | 3 |
| 7. General biology of bacteriophage, plasmids.  | 3 |
| 8. Prokaryotic inhibitors and their mode action against phytopathogenic bacteria.                             | 2 |
| 9. Local significant bacterial disease, viral disease including symptoms, Etiology, disease-cycle and control | 6 |

  
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Principal  
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B. G. Mohan

## Practical

Credit  
2/80 Hrs.

- I Sem.**
1. Symptoms, etiology, diseases-cycle and control of fungal disease. 30
  2. Symptoms, etiology, diseases-cycle and control of Bacterial disease. 20
  3. Symptoms, etiology, diseases-cycle and control of Viral disease. 10
  4. Preparation of Common fungicides. 10
  5. Study Report 10

2/80 Hrs.

- II Sem.**
1. Study of environment factors like soil texture, soil moisture. 20
  2. Anatomical study to find out Host- parasite relationship. 30
  - 3 Actions of Enzymes, growth regulators. 10
  4. Common lab instruments. 10
  5. Study Report 10


2/80 Hrs.

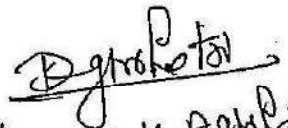
- III Sem.**
1. Study of Common pathogenic fungi. 20
  2. Preparation & study of infected twig- temp. slides. 20
  - 3 Field study of fungal disease. 10
  4. Culture freesia for fungal pathogen. 10
  5. Study report. 20

2/80 Hrs.

- IV Sem.**
1. Staining of Bacteria Gram staining. 10
  2. Study of different prokaryotic pathogens 15
  - 3 Isolation & preparation of culture media for bacterial pathogen 15
  4. Chart & herbarium. 20
  5. Final Study Report. 20

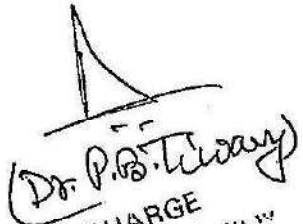
  
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(Dr. D. K. Aggarwal)

## Suggested Readings :-

1. Pathak, V.N.                      Essentials of Plant Pathology  
Prakash Pub., Jaipur
2. Agrios; G.N.                      Plant Pathology  
Acad. Press
3. Singh R S                          Plant diseases  
Oxford & IBH Pub. Co.
4. Singh R S                          Introductions to principals of plant  
pathology
5. Mehrotra R S & Aggarwal A Plant Pathology  
Tata Mc Graw Hill Publ. Co.
6. Kamat, M.N.                      Introductory Plant Pathology  
Prakash Pub., Jaipur
7. Dhingra O D & Sinclair J B                      Basic Plant Pathology Methods  
CRC Press
8. Verma J P, Verma A, Kumar D                      Detection of plant pathogens and  
their management Angkor Publ.,  
New Delhi

  
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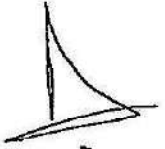
  
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(Dr. D.K. Agnihotri)



## Name of External Experts

1. Prof. Lalit Mohan  
Dept. of Botany  
Kumaun University, Nainital
2. Prof. J.K. Tiwari  
Dept. of Microbiology  
H.N.B. Garhwal Central University, Srinagar Garhwal
3. Dr. S.S. Maurya  
Govt. PG College, Ramnagar
4. Dr. A.K. Buts  
D.S. College, Aligarh
5. Dr. V.K. Maurya  
Dept. of Microbiology  
H.N.B. Garhwal Central University, Srinagar Garhwal

  
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## PRACTICAL/SKILL TRAINING & TEST

- 1- Practical work will be based on any contents or topic of syllabus of theoretical paper.
- 2- Content or topic for all components of practical work shall be decided by subject teacher in consultation with skill partner.
- 3- Test or evaluation for practical work will be conducted by skill partner in association/consultation with concerned institution/subject teacher.

### ALLOCATION OF MARKS


A- Theoretical Part ---


100 Marks

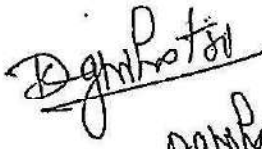
B- Practical/Skill Part --- 50 }


100 Marks.

C- Training Report- 50 }

  
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