

## **TEACHING:**

### **(1) Under graduate level**

<b>Sr. No.</b>	<b>Code</b>	<b>Course title</b>	<b>Credit</b>
1	PL.PATH 1.1	FUNDAMENTALS OF PLANT PATHOLOGY	2+1
2	AG.MICRO.1.1	AGRICULTURAL MICROBIOLOGY	1+1
3	PL. PATH 2.2	INTRODUCTORY NEMATOLOGY	1+1
3	PL. PATH 4.3	PRINCIPLES OF INTEGRATED DISEASE MANAGEMENT	1+1
4	PL.PATH. 5.4	DISEASES OF FIELD AND HORTICULTURAL & THEIR MANAGEMENT-1	2+1
5	PL.PATH. 6.5	DISEASES OF FIELD AND HORTICULTURAL & THEIR MANAGEMENT-2	2+1
6	AG.MICRO. 6.2	BIO-PESTICIDES & BIO-FERTILIZERS	2+1
7	CR. PROT. 8.2	MANAGEMENT OF POST HARVEST INSECTS-PEST AND DISEASES	1+2
8	CR. PROT. 8.3	BIO-CONTROL AGENCIES AND BIO-PESTICIDES(MASS MULTIPLICATION AND USES)	1+2
9	AG. ENTO. 8.8	PESTICIDES AND PLANT PROTECTION EQUIPMENT	1+2
10	PL.PATH 8.7	MUSHROOM CULTIVATION	0+2
11	AG. MICRO 8.2	MICROBIAL AND ENVIRONMENTAL TECHNOLOGY	1+3

### **(2) Post Graduate Level**

#### **2.1 Plant Pathology**

<b>Sr. No.</b>	<b>Code</b>	<b>Course title</b>	<b>Credit</b>
1	PL PATH 501	MYCOLOGY	2+1
2	PL PATH 502	PLANT VIROLOGY	2+1
3	PL PATH 503	PLANTBACTEIDODOLOGY	2+1
4	PL PATH 504	PRINCIPLES OF PLANT PATHOLOGY	3+0
5	PL PATH 505	DETECTION AND DIAGNOSIS OF PLANT DISEASES	0+2
6	PL PATH 506	PRINCIPLES OF PLANT DISEASE MANAGEMENT	2+1
7	PL PATH 507	DISEASES OF FIELD AND MEDICINAL CROPS	2+1
8	PL PATH 508	DISEASES OF FRUITS, PLANTATION AND ORNAMENTAL CROPS	2+1
9	PL PATH 509	DISEASES OF VEGETABLE AND SPICES CROPS	2+1
10	PL PATH 510	SEED HEALTH TECHNOLOGY	2+1
11	PL PATH 511	CHEMICALS IN PLANT DISEASE MANAGEMENT	2+1
12	PL PATH 512	ECOLOGY OF SOIL-BORNE PLANT PATHOGENS	2+1
13	PL PATH 513	DISEASE RESISTANCE IN PLANTS	2+0
14	PL PATH 514	INSECT VECTORS OF PLANT VIRUSES AND OTHER PATHOGENS	1+1

15	PL PATH 515	BIOLOGICAL CONTROL OF PLANT DISEASES	2+1
16	PL PATH 516	INTEGRATED DISEASE MANAGEMENT	2+1
17	PL PATH 517	MUSHROOM PRODUCTION TECHNOLOGY	2+1
18	PL PATH 518	EPIDEMIOLOGY AND FORECASTING OF PLANT DISEASES	2+1
19	PL PATH 519	POST HARVEST DISEASES	2+1
20	PL PATH 520	PLANT QUARANTINE	2+0
21	PL PATH 591	MASTER'S SEMINAR	1+0
22	PL PATH 599	MASTER'S RESEARCH	20
23	PL PATH 601	ADVANCED MYCOLOGY	2+1
24	PL PATH 602	ADVANCED VIROLOGY	2+1
25	PL PATH 603	ADVANCED BACTERIOLOGY	2+1
26	PL PATH 604	MOLECULAR BASIS OF HOST-PATHOGEN INTERACTION	2+1
27	PL PATH 605	PRINCIPLES AND PROCEDURES OF CERTIFICATION	1+0
28	PL PATH 606	PLANT BIOSECURITY AND BIOSAFETY	2+0
29	PL PATH 691	DOCTORAL SEMINAR I	1+0
30	PL PATH 692	DOCTORAL SEMINAR II	1+0
31	PL PATH 699	DOCTORAL RESEARCH	45

## 2.2 Agricultural Microbiology

Sr. No.	Code	Course title	Credit
1	MICRO 501	PRINCIPLES OF MICROBIOLOGY	3+1
2	MICRO 502	MICROBIAL PHYSIOLOGY AND METABOLISM	3+1
3	MICRO 503	MICROBIAL GENETICS	2+1
4	MICRO 504	SOIL MICROBIOLOGY	2+1
5	MICRO 505	MICROBIAL BIOTECHNOLOGY	2+1
6	MICRO 506	FOOD AND DAIRY MICROBIOLOGY	2+1
7	MICRO 507	BACTERIOPHAGES	1+1
8	MICRO 508	ENVIRONMENTAL MICROBIOLOGY	2+1
9	MICRO 509	PLANT-MICROBE INTERACTIONS	3+0
10	MICRO 510	INDUSTRIAL MICROBIOLOGY	2+1
11	MICRO 511	BIOFERTILIZER TECHNOLOGY	1+1
12	MICRO 512	CYANOBACTERIAL AND ALGAL BIOTECHNOLOGY	2+0
13	MICRO 591	MASTER'S SEMINAR	1+0
14	MICRO 599	MASTER'S RESEARCH	20
15	MICRO 601	ADVANCES IN FERMENTATION	2+1
16	MICRO 602	ADVANCED MICROBIAL PHYSIOLOGY	2+0
17	MICRO 603	REGULATION OF MICROBIAL BIOSYNTHESIS	2+0
18	MICRO 604	CURRENT TOPICS IN SOIL MICROBIOLOGY	2+0
19	MICRO 691	DOCTORAL SEMINAR I	1+0
20	MICRO 692	DOCTORAL SEMINAR II	1+0
21	MICRO 699	DOCTORAL RESEARCH	45

## **RESEARCH:**

### **Major research achievements:**

The research work have been done so far on all the important diseases of different mandate crops viz; mango, banana, sugarcane, paddy, cotton, sorghum, millets, pulses, vegetables, flower crops, etc. South Gujarat comes under heavy rain fall area and irrigation facilities are available throughout the year in maximum area facilitating the continuous cropping. Environmental conditions are favorable for the development of the various diseases. Department is working for the development of package of practices for the management of the various diseases and is recommending to the farmers. Department is also helping various crop scientists in resistance screening for the development of disease resistance varieties or materials. On the basis of extensive research work done since 1966, Many farmers and scientific recommendations have been emerged out for farming and scientific communities of important aspects of different crops viz. Paddy, mango, sugarcane, cotton, ginger, chili, okra, banana, finger millet etc.

Extensive research work on isolation, identification, evaluation and mass multiplication of different bio-fertilizers viz., Azotobacter, Azospirillum, Acetobacter, Rhizobium, Phosphate Solublizing Bacteria, Potash Mobilizing Bacteria of the different crops is being carried out. The Biofertilizers Production Unit Established under the Experiential Learning Programme of the ICAR in 2008 started commercial production and marketing of the product in 2010 and is selling different products under the brand name of the university "NAUROJI". Within five years the unit has distributed more than 6 lakh litres of Biofertilizers. Work is also going on the Biopesticides production and mother culture of Trichoderma is being distributed to the farmers for the on farm enrichment of pressmud of sugarcane and compost which is readily available in south Gujarat. Two new species of *Trichoderma* viz., *T. fasciculatum* and *T. atroviride* reported for the first time from Gujarat by the department. Valuable research carried out by the staff members has been published in various national and international journals.

### **Projects in progress:**

<b>Sr. No.</b>	<b>Name of the project</b>	<b>Plan/Non-plan</b>
1	Centre of excellence on bioinoculants	Plan
2	Research on eco-friendly biofertilizers	Plan
3	Strengthening of Microbiology cell	Plan
4	Research on fruit crops	Non-plan

## **EXTENSION:**

Staff members are actively engaged in following extension activities

- Farmers cooperative and extension workers training
- Farmer's Day celebration
- Seminar
- Visiting Farmer's Field
- T.V.programme and Radio talk
- Exhibition related to agriculture
- Training programme
- Publication of popular articles in Gujarati
- Khedut Shibir
- Krishimela
- Krishimahotsav
- Plant Disease Sample Diagnosis
- Agro-advisory services
- Technology Demonstration
- Magazine and, Book lets

### **Conferences/Symposia/Seminars organized:**

- A national level symposium "34<sup>th</sup> annual conference and symposium on: "Crop disease management: Advance and challenges" during January, 21-23, 2013.
- One day West Zone Conference of ISMPP along with Global Conference of Horticulture on Climate Smart Horticulture was organized on May 29, 2014.

### **Significant Awards / Recognition to the faculty:**

1. Dr. Lalit Mahatma worked as West Zone Councilor for the Indian Society of Mycology and Plant Pathology for the year 2010.
2. Dr. A.N. Sabalpara, Director of Research & Dean PGS, NAU, Navsari and Dr. Lalit Mahatma honoured with Fellow of Indian Society of Mycology and Plant Pathology in 2012.
3. Dr. A.N. Sabalpara was elected as President of ISMPP two terms for the year 2013 and 2014.
4. Dr. Lalit Mahatma elected as Vice President of the Indian Society of Mycology and Plant Pathology for the year 2013.
5. Dr. Lalit Mahatma elected as Immediate Vice President (Executive Body Member) of the Indian Society of Mycology and Plant Pathology for the year 2013.
6. Dr. A.N. Sabalpara was also honoured by the Fellow of India Phytopathological Society (FIPS) and Fellow of Indian Mycological Society (FIMS).

### **Awards**

1. Second Sardar Patel Agricultural Research Award Presented by Government Gujarat for outstanding contribution towards agricultural developmental research and technology advancement in the field of Plant Protection during 1997-1998.
2. Dr. K. B. Rakholiya received best thesis award on "Integrated management of stem and pod rot of ground nut caused by *Sclerotium rolfsii* Sacc " by GAAS during 2012.
3. Dr. Lalit Mahatma received a Best Teacher award (Agriculture Faculty) for the academic year 2013-14.
4. Dr. Lalit Mahatma awarded Prestigious PP Singhal Memorial Pesticide India Award (II position) by the ISMPP for year 2014.
5. Dr. Priya John received a Best Teacher award (Agriculture Faculty) for the academic year 2015-16.
6. Dr. Gopal Chopada received P. R. Verma award for best Ph.D. Thesis sponsored by ISMPP in 38<sup>th</sup> Annual conference and National Symposium organized at BCKV, Mohanpur, Nadia, WB during 24-26 November, 2016.

7. Dr. M. D. Khunt received Dr. R. C. Patel award for best Ph.D. Thesis sponsored by PPAG at state level seminar organized at JAU, Junagadh on 19 August, 2017.
8. Dr. Shivangi Kansara received Young Scientist award for at National Symposium on sustainable management of pests and diseases in augmenting food and nutritional security held at NAU, Navsari during 22-24 January, 2019.
9. Dr. Gopal Chopada received Young Scientist award for at National Symposium on sustainable management of pests and diseases in augmenting food and nutritional security held at NAU, Navsari during 22-24 January, 2019.
10. Dr. K. B. Rakholiya received Lifetime Achievement award in Plant Pathology at National Symposium on sustainable management of pests and diseases in augmenting food and nutritional security held at NAU, Navsari during 22-24 January, 2019.

### Publications:

Sr. No.	Name of the activity	No.
1	Research papers	>500
2	Book publication	09
3	Booklet publication	05
4	Leaflet	46
5	Popular articles in vernacular language	>200

### Any other relevant / significant information

- ELP on the Biofertilizers running in the Department of Plant Pathology is the most acclaimed project of ELP in the country and all the ICAR officials have appreciated and recognized it as the most efficiently working ELP in the country. The project was established in 2006 and state of art Biofertilizers Production Unit was established in 2008. The unit got the license of commercial production and marketing of different biofertilizers in 2009 and since then it has produced more than 6.0 lakh litres of biofertilizers by employing the students. More than 400 students have been trained so far in the project. Presently the provision of Rs. 9000/- month have been made for the students. Initially in the project, Identified efficient and native strains of different microorganism being used as biofertilizers, tested *in vitro* efficacy, identified potential strain, tested field efficacy and developed commercial formulation.