PHYTOPATHOLOGY AND POSTHARVEST MANAGEMENT OF FRUITS AND VEGETABLES
COURSE OUTLINE

GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	FOOD SCIENCE AND NUTRITION		
LEVEL COURSE	The undergraduate Food Science and Nutrition curriculum		
CODE COURSE	ΓΠ616	**SEMESTER STUDIES**	ΣΤ΄
COURSE TITLE	Phytopathology and Postharvest Management of Fruits and Vegetables (KEY) RESPONSIBLE: THEOFANIS GEORGOPOULOS		

INDEPENDENT TEACHING ACTIVITIES in case the credits are awarded in separate parts of the course e.g. Lectures, Laboratory Exercises, etc. If credits are awarded single for the entire course please enter the weekly credits teaching hours and total number of credits	**WEEKLY HOURS**	**ECTS UNITS**
TEACHING	3	5
LABORATORY EXERCISES	2	

COURSE TYPE Background, General Knowledge, Scientific Area, Development Skills	GENERAL KNOWLEDGE
PREREQUISITE COURSES:	
ΓΛΩΣΣΑ ΔΙΔΑΣΚΑΛΙΑΣ και ΕΞΕΤΑΣΕΩΝ:	GREEK AND ENGLISH
ΤΟ ΜΑΘΗΜΑ ΠΡΟΣΦΕΡΕΤΑΙ ΣΕ ΦΟΙΤΗΤΕΣ ERASMUS	YES
INTERNET COURSE	

LEARNING OUTCOMES

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At the end of this course the student will have further developed the following skils:
1. Understand the meaning and importance of Phytopathology in general, as well as the importance of plant di seases in plant protection and their impact on agriculture and the general economic and social activities of man .
2. Understand concepts and specialized definitions of phytopathology
3. It will be able to distinguish phytonoses according to their cause, and make correct diagnoses of various plan t species infestations and post-harvest patients
4. Be able to choose the right strategy for dealing with plant diseases and post-harvest diseases of fruits and vegetables in storage areas in connection with food safety and offer alternatives.
5. It will have the opportunity to know how to be informed on cutting-edge issues related to the proper management of diseases and food safety.

General abilities

The general competences that the student should have acquired and which the course aims at are:
· Search, analysis and synthesis of data and information, using the necessary technologies
· Decision making
· Group Task
· Production of new research ideas
· Project design and management
· Criticism and self-criticism
· Promotion of free, creative and inductive thinking

COURSE CONTENT

Aim, importance and historical review of Phytopathology.
· Concept of Disease.
· Symptoms of Diseased Plants Disturbances and divergences in development,
cell proliferation and tissue and organ morphogenesis
· Disturbances and discrepancies in the appearance of the natural colors of the leaves,
· tissues and organs Disturbances due to availability and
difficulties of water transport
· Disorders and deviations due to necrosis or sepsis of cells, tissues and organs
· Disorders due to abnormal secretions
· Drops in plant organs and tissues
· Signs of diseases Fungi, Bacteria, Viruses
· Basic Knowledge of Phytopathological Mycology Morphology of Fungi and Oocytes
Reproduction of Fungi and Oocytes
Classification of Fungi and Oocytes
The most important phytopathogenic genera and species of Fungi and Oocytes
Basic Knowledge of Phytopathological Bacteriology
Morphology ·& Reproduction of Bacteria
Bacterial Taxonomy
The most important phytopathogenic genera and species of Bacteria · Survival ·
& Bacteria Dispersion Symptoms of Bacteriological Diseases · Infection – Pathogenesis of Bacteria
Treatment of Bacteriosis
Basic Knowledge of Phytoplasmas and Spirals
Basic Knowledge of Phytopathological Virology Virus Morphology · Entry and Multiplication
of the viruses in the host cells
Virus Replication
Virus Classification
The most important phytopathogenic viruses · Movement of viruses in plant cells
Symptoms of Viral Diseases · Transmission of Viruses · Identification and Identification of Viruses ·
Treatment of Viruses · Basic Knowledge of Plant Viroids
Phanerogama Pests of plants
Non-Parasitic Diseases Extreme temperatures
Foodborne Toxicities
Phytotoxic pollutants of the atmosphere ·Pathogenesis mechanisms
Chemical pathogenesis agents Plant defense mechanisms Passive defense mechanisms
Active defense mechanisms · Hypersensitivity reaction ·
Induced and Acquired Intersystemic Resistance
Intrinsic Plant Immune System
Pathogen-host recognition mechanisms Mechanisms of bacterial stimulator secretion
Signal transduction and endurance expression
The Tetrahedron of Illness. Monocyclic & Polycyclic Diseases
Principles and Methods of Diagnostics of Plant Diseases
Principles and Methods of Treatment of Plant Diseases
General concepts Chemical Treatment
Integrated Approach
Main Post-harvest Fruit and Vegetable Diseases:
Fruit Trees :i. Apple trees ii. Stone fruit iii. Citrus iv. Vine v. Olive vi. Avocado
vii. Kiwi viii. Pomegranate ix. Peanuts x. Walnut? xi. Banana Ø Vegetables: i.
Solanales:
ii. Stavranthi
iii. Cucurbits iv. Bulbous v. Carrots vi. Strawberry
Diagnosis of post-harvest diseases (clinical diagnosis, laboratory diagnosis,
disease identification).
Treatment of post-harvest diseases (pre-collector and post-harvest).
Treatment of mycotoxic fungi (prophylaxis and post-collection).
Treatment of anthropogenic microorganisms in ready packaged salads.

TEACHING AND LEARNING METHODS - EVALUATION

METHOD LECTURE	Face to face
APPLICATION OF INFORMATION TECHNOLOGY AND COMMUNICATION	Use H/Y, Internet, PowerPoint, e-mail, search engines (googlechrome, googlescholar), e-class e-education, e-rating, use of audiovisual media, thematic Videos from foreign university bases, photos, animations, chatroom for exchange students' views
STRUCTURE OF LECTURE	

ACTIVITY	***PORTION OF WORK SEMESTER***
Lectures	30
Bibliography &Analysis	30
Task Writing	25
Course Set (25 hours workload per credit)	***75***

STUDENT EVALUATION	Students take part in the Final Written Examination The total grade is derived from A) Written final examination (70%) B) Work (20%) C) Participation in theoretical lectures (10%)

SUGGESTED BIBLIOGRAPHY

1. Agrios G. N. Phytopathology. 2015. 1st Greek-5th American edition. UTOPIA PUBLICATIONS M. LTD.
2. 2. Gravanis F. Phytopathology. 2018. COPY CITY I.K.E.
3. 3. Iliopoulos A.G. General Phytopathology. 2004. STYLIANOS VASSILIADIS Publications
4. 4. Jamos E. Phytopathology. 2017. 2nd edition. UNIBOOKS PC