

Basic Information

Course Code	
Course Title	Quarantine and biosecurity
Academic Year	2022/2023
Academic Program	New Professional Diploma in Plant Clinic and Phytosanitary Technologies
Hours/week semester	Lectures: 2 Practical: 2 Total: 3

Course Description: To educate the students on Sanitary and Phytosanitary (SPS) Measures and quarantine regulations. Upon completion, students will be able to find, interpret and identify a phytosanitary problem, search for relevant literature and develop a research proposal in consultation with a university supervisor.

1. Course Aims

- 1.1- To collect information on plant protection activities and a understanding of quarantine regulations
- 1.2- To encourage roles and responsibilities in Agricultural Biosecurity.
- 1.3- To Promote awareness of the dangers posed by invasive exotic weeds, pathogens, and other pests.
- 1.4- Promote knowledge about career opportunities available in plant protection and
- 1.5- provide hands-on experience through internship opportunities.
- 1.6- To identify intercepted pests and pathogens with greater speed and accuracy
- 1.7- To impart knowledge and skills to trainees in order to ensure that agricultural products are consistent and conform to international, regional and national phytosanitary standards.
- 1.8- To ensure that the trainees understand the relevant international phytosanitary agreements and standards and their application.
- 1.9- To define Pest-free areas: pest-free area, inspection of crop to confirm pest freedom.
- 1.10- To determine rules for consignments: pre-entry (e.g. inspections, treatments, packaging for phytosanitary security, certification),.
- 1.11- Identify pests using basic and advanced technologies.
- 1.12- To recognize standard rules of post-entry quarantine actions (e.g. inspection, consignment treatments like fumigation and irradiation, restrictions on end use, distribution and periods of entry of the commodity).
- 1.13- use of Global Positioning System (GPS) and Geographic Information System (GIS) for plant biosecurity,
- 1.14- Determine strategies for combating risks and costs associated with agroterrorism event, mitigation planning,
- 1.15- Apply integrated approach for biosecurity. Biosafety, policies
- 1.16- Impart plant quarantine surveillance and list of intercepted plant pests into Egypt.
- 1.17- Define current plant quarantine regulations in Egypt and FAO. Problem of their implementation in Egypt.
- 1.18- Promote Modern techniques of inspection and treatment methods for quarantine.

2. Intended Learning Outcomes

2.1. Knowledge and Understanding

On successful completion of this course, the student should be able to

- 2.1.1- Mention the list of plant pathogens and pests .
- 2.1.2- Understand the risks and costs associated with agroterrorism and phytosanitary security
- 2.1.3- Know the standard rules of post-entry quarantine actions.
- 2.1.4- Recognize the current plant quarantine regulations in national and international levels

- 2.1.5- Diagnose consignments problems, inspections, treatments, packaging for phytosanitary security, certification
- 2.1.5- know the recent methods and rules for inspection, treatment and certification.

2.2. Intellectual Skills

By the end of this course, the student should be able to

- 2.2.1- Conclude the causes of risks of imported and exported of agriculture products.
- 2.2.2- Evaluate the appropriate methods for quarantine inspection
- 2.2.3- Employs the information of phytosanitary on national and international levels.
- 2.2.4- Achieve standard phytosanitary scheme and certification in

2.3. Practical and Professional Skills

By the end of this course, the student should be able to

- 2.3.1- Distinguish between national and international quarantine regulations
- 2.3.2- Determine the pest and pathogen hazards and its threshold of imported products
- 2.3.3- Utilize standard laboratory procedures and techniques in experimental application for pest and pathogen detection.
- 2.3.4- Apply standard protocols for integrated biosecurity and phytosanitary.

2.4. General and Transferable Skills

By the end of this course, the student should be able to

- 2.4.1- Writes and presents specialized reports to explain different phenomena
- 2.4.2- Think independently, and solve problems on scientific basis
- 2.4.3- Communicates with colleagues and works in a research team
- 2.4.4- Identify roles, tasks, and set clear guidelines and performance indicators
- 2.4.5- Demonstrates self-learning and continuous capabilities to develop professional skills
- 2.4.6- Address the community linked problems with considerable attention to the community ethics and traditions
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Course content

Topics	Total (hr)	Lectures (hr)	Practical (hr)
Introduction to Plant Health and Quarantine	3	2	2
International Phytosanitary Controls - The European Union Plant Health Regime	3	2	2
Principles of Certification and Marketing Schemes	3	2	2
Indexing and Diagnosis in Plant Health	3	2	2
Pest Risk Analysis	3	2	2
Entry and shipment guidelines for “Agricultural commodities”	3	2	2
Identification of pests and inspection procedure of import/export consignment.	3	2	2

International Standards of Phytosanitary Measures (ISPM).	3	2	2
Analysis of various plants and planting material from exportable & importable consignments	3	2	2
Disease, Pest, and Weed Management and Eradication	3	2	2
Global Positioning System (GPS) and Geographic Information System (GIS) for plant biosecurity,	3	2	2
Pest-free areas	3	2	2
Exotic pests, pathogens, and weeds	3	2	2
Modern techniques of inspection and consignment treatments	3	2	2
Total	42	28	28

Course Matrix for Achievement of Intended Learning Outcomes

	Topics	H o u r s	K & U								I S								P & PS							G & TS												
			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	1	2	3	4									
1	Introduction to Plant Health and Quarantine	4																																				
2	International Phytosanitary Controls - The European Union Plant Health Regime	4																																				
3	Principles of Certification and Marketing Schemes	4																																				
4	Indexing and Diagnosis in Plant Health	4																																				
5	Pest Risk Analysis	4																																				
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9	International Standards of Phytosanitary Measures (ISPM).	4																																				

10	Analysis of various plants and planting material	4																					
11	Disease, Pest, and Weed Management and Eradication	4																					
12	Global Positioning System (GPS) and Geographic Information System (GIS) for plant biosecurity,	4																					
13	Pest-free areas	4																					
14	Exotic pests, pathogens, and weeds	4																					

4. Teaching and Learning Methods

Lectures:	Interactive lectures through: <ul style="list-style-type: none"> • Teaching lectures to gain knowledge and understanding skills • Seminars • Group discussions
Practical sessions:	<ul style="list-style-type: none"> • Laboratory lessons (Practical sessions) to gain practical skills • Field visits
Self-Learning activities:	<ul style="list-style-type: none"> • Assays and reporting in different topics • Analyze the results and reach specific conclusion • Sample collection, preservation, examination and identification

5. Teaching and Learning Methods for Students of Limited Capabilities

- Additional revisions for previously taught and difficult topics
- Providing a summary for previous chapter at the end of each one
- Following up student feedbacks

6.1. Methods	6. Student Assessment			
	Intended Learning Outcomes Covered			
	KU	IS	PPS	GTS
Written exams	2.1.1/2.1.2/2.1.3/2.1.4 /2.1.5	2.2.1/2.2.2/2.2.3/2.2.4		
Practical exams			2.3.1/2.3.2/2.3.3/2.3.4	
Oral Exams		2.2.1/2.2.2/2.2.3/2.2.4		2.4.1/2.4.2/2.4.3/2.4.4/2.4.5/2.4.6
Student Activities				2.4.1/2.4.2/2.4.3/2.4.4/2.4.5/2.4.6

KU, knowledge and understanding; IS, intellectual skills; PPS, practical and professional skills; GTS, general and transferable skills

6.2. Exam Description

- Written exams
- Short essays
 - Drawing
 - Multiple choice questions
 - Comparisons
 - Giving the scientific term/information
 - Reasons for what comes
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Practical exams	<ul style="list-style-type: none"> • Slideshow exams • Practical case studies • Exams on plants of the faculty farm
Oral exams	<ul style="list-style-type: none"> • The exam committee involves at least 3 examiners • Each evaluates the student by giving a separate score • The scores are then averaged • The student randomly selects question cards
Student activities	<ul style="list-style-type: none"> • Self-learning activities are evaluated throughout the semester

6.3. Assessment Schedule		6.4. Weighing of Assessments
Exams and activities	Week (in each semester)	Total (%)
Semester work exam	4 th , 8 th and 12 th	10
Student activities	Throughout the semester	10
Final written exam	15 th	50
Final Practical exam	15 th	20
Final oral exam	15 th	10
Total		100

7. List of References

1. Chandan Kumar Singh, Singh, A.; Vishwakarma, R. and Chandan Kumar Singh(2017). Plant Quarantine: An Effective approach for prevention of alien pest and disease. Bull. Env. Pharmacol. Life Sci., Vol 6[11] October 2017: 08-1
2. EPPO Standards: Phytosanitary procedures. European and Mediterranean Plant Protection Organization. © 2004 OEPP/EPPO, Bulletin OEPP/EPPO Bulletin 34, 439–440 439
3. FAO. 2000. Multi-lateral Trade Negotiation on Agriculture. A Resource Manual-III-SPS & TBT Agreement. Publ. FAO-UN, Rome, Italy.
4. Guidelines for Phytosanitary Certificates, 2001. ISPM No. 12, FAO, Rome.
5. Pest Risk Analysis for quarantine pests including analysis of environmental risks, 2003. ISPM No. 11 Rev. 1, FAO, Rome.
6. Ranjann, S. 2007. Sanitary and Phytosanitary Measures-An introduction, Lefai University Press, India.

Course coordinator:
Prof. Dr. -----

Head of Department:
Prof. Dr.