Course Specification

(Bachelor)

Course Title:	*Plant Pathology*
Course Code:	*BIO1407*
Program:	*Bachelor of Science in Biology*
Department:	*Department of Biology*
College:	*Faculty of Science*
Institution:	*University of Tabuk*
Version:	***Course Specification Version Number***
Last Revision Date:	*September 2023*

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours:					
3 Credit (2 theoretical + 1 practical) hours.					
2. Course type					
A.	☐University	☐ College	☒ Department	☐Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (7th Level / 4th year)					
4. Course general Description:					
This course deals with studying plant diseases and their causes (biotic and abiotic agents), direct and indirect losses from plant diseases, symptoms of plant infections, inoculums of microbial infection, environmental conditions that cause spread of microbial infectious, disease cycles and methods used in diagnosis and controlling plant diseases. In addition, this course emphasizes the biological and ecological aspects of pathogenesis and the role of plant diseases in plant production, using specific examples.					
5. Pre-requirements for this course (if any)**:**					
Plant Physiology (BIO1310).					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
By the end of this course the student will be able to: - Describe the principles of plant pathology in terms of etiology, epidemiology, symptoms, disease development and control. - Recognize different plant diseases, classify plant diseases. - List different symptoms of diseases in plants. - Illustrate the different perspectives on plant disease management with respect to international trade, climate change, and sustainable production.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	E-learning		

No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		
5	**Others (Lab works)**	2	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		**60**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recognize facts, principles and scientific terminology of plant pathology	K1	-Lectures. -Class discussion. -Group discussion. -Case studies.	-Quizzes -Midterm examination. -Final examination. -Class discussion and participation. - Homework (Problem-solving).
1.2	Classify different plant diseases according to relevant biological characters.	K2	-Lectures. -Class discussion. -Group discussion. -Homework assignments.	-Quizzes -Midterm examination. -Final examination.

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
			-Case studies.	-Class discussion and participation. -Homework assignments.
2.0	**Skills**			
2.1	Apply concepts and common terms associated with plant pathology.	S1	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming. -Lab work. -Field trip.	-Quizzes -reports -Final examination. -Class discussion and participation. -Homework (Problem-solving).
2.2	Analyze concepts of plant disease control and management.	S4	-Lectures. -Short essay -Class discussion. -Group discussion. -Brainstorming. -Lab work -Field trip.	-Quizzes -reports -Final examination. -Class discussion and participation. -Homework (Problem-solving).
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate professional responsibilities in using the proper presentation forms and scientific language.	V2	-Lectures. -Short essay -Class discussion. -Group discussion. -Lab demonstration.	-Class discussion and participation. -Homework (Problem-solving).

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction	2

2.	The history of Phytopathology-Principles of Plant Pathology-Plant disease losses and distribution of pathogens-economic importance. 1	2
3.	The history of Phytopathology-Principles of Plant Pathology-Plant disease losses and distribution of pathogens-economic importance. 2	2
4.	Division of Plant Diseases - Symptoms of plant Diseases-The Diagnosis of plant diseases 1	2
5	Division of Plant Diseases - Symptoms of plant Diseases-The Diagnosis of plant diseases	2
6.	Spread of plant pathology agents – Effect of Environmental conditions on Plant diseases. 2	2
7.	Causal agent of Plant Pathology (Biotic and abiotic agents) Fungal parasitism- The phases of the disease cycle	2
8.	Methods of Plant disease Controlling. Fungal plant diseases: Damping-off diseases, vascular wilt and their disease cycles	2
9.	Fungal plant diseases: Blights and leaf spots diseases - Post-harvest and storage diseases and their disease cycles	2
10.	Fungal plant diseases: Downy and Powdery mildews diseases and their disease cycles	2
11.	Fungal plant diseases: Rusts and Smuts diseases and their disease cycles	2
12.	Bacterial and Phytoplasma plant diseases (importance, nature) Examples of the most important bacterial and Phytoplasma plant diseases.	2
13.	Plant viral and viroid diseases	2
14.	Nematode diseases - parasitic flowering plants Ecological factors as causal agents of plant diseases	2
15.	The role of modern genetic engineering in the process of resistance and disease control	2
Total		**30**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Class Participation	During whole teaching period	5
2.	Homework (Problem-solving)	3 to 13	5
3.	Short Exams (Quizzes)	During whole	5

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
		teaching period	
4.	Midterm Theoretical Examination	8-9	20
4.	Reports (For Practical)	During whole teaching period	10
5.	Final Practical Examination	15	15
6.	Final Theoretical Examination	17	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- Tronsmo, A. M., Collinge, D. B., Djurle, A., Munk, L., Yuen, J., & Tronsmo, A. (2020). Plant pathology and plant diseases. CABI. - Agrios, G. N. (2005). Plant pathology. Elsevier. - Sambamurty, A. V. S. S. (2006). Textbook of plant pathology. IK International.
Supportive References	- Strange, R. N. (2003). Introduction to plant pathology. John Wiley & Sons.
Electronic Materials	- Website of Saudi digital Library.
Other Learning Materials	- Computer-based programs and professional software.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	- A sufficient number of classrooms, well equipped. - Practical laboratories should be available to accommodate students.
Technology equipment (projector, smart board, software)	- Data show projectors and wireless internet connection available for students and faculties. - Smart blackboard. - Computer portable power point presentation.

Items	Resources
Other equipment (depending on the nature of the specialty)	- Preserved samples, glassware.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	- Students. - Faculty members.	Indirect & direct: - Questionnaires. - Meetings.
Effectiveness of Students assessment	- Quality and development committee. - Department chair.	- Course report. - Program annual report.
Quality of learning resources	- Plan and program committee. - Students. - Staff members.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
The extent to which CLOs have been achieved	- Quality and development committee. - Peer Reviewer. - Program leaders.	Indirect & direct: - Questionnaires. - Meetings. - Reports.
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**PROGRAMS AND STUDY PLANS COMMITTEE**
REFERENCE NO.	
DATE	**SEPTEMBER 2023**