#### Course Title: Plant Pathology

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| **University** | **Benha** |
| **Faculty** | **Agriculture** |
| **COURSE SPECIFICATIONS:** |
| Program of which the course is given | Agricultural Biotechnology |
| Major or Minor element of program |  |
| Departments offering the program |  |
| Department offering the course | Plant Pathology (Formerly: Agricultural Botany) |
| Academic year (level) | 3rd |
| Date of specification approval |  |

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| **A- BASIC INFORMATION**  |
| Title  | Plant Pathology |
| Code | AB0807 |
| Credit Hours  | 3 |
| Lecture | 2 Hours / week |
| Practical | 2 Hours / week  |
| Total: | 56 (14 weeks) |

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| **B- PROFESSIONAL INFORMATION** |
| 1. OVERALL AIMS OF COURSE |
| 1. Introduce students to the basic principles and concepts of plant pathology.
2. Familiarize students with the basic vocabulary of plant pathology and plant disease management.
3. Introduce and illustrate the major groups of organisms that cause plant diseases.
4. Familiarize students with certain local plant diseases’ symptoms, causal organisms, development and spread.
5. Provide a framework that students can use in their profession to best approach plant disease management.
6. Improve the written and oral communication skills of students through class, group and individual projects.
7. Prepare students for additional classes in Plant Pathology and related disciplines.
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| 2. INTENDED LEARNING OUTCOMES OF COURSE (ILOs) |
| **A. Knowledge and Understanding:** |
| ***By the end of the course, students should:***1. Learn the definition of disease and its various biotic and abiotic causal agents.
2. Identify diseases based on symptoms and signs
3. Know how to relate different symptoms to diseases caused by different organisms
4. Know and understand the altered parts of the plant for each studied disease.
5. Describe and compare between symptoms of different diseases, development and control.
6. Learn common diseases affecting the high-value economic crops after harvesting.
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| **B. Intellectual Skills:** |
| ***Successful completion of this course will allow students to be able to:***1. Suggest causal agent of disease
2. Integrate the acquired information to classify a provided disease
3. Recognize stages of disease development on plant.
4. Know and understand the different stages of the disease cycle and how these affect normal structure and function of the host
5. Select appropriate control method to reveal specific disease
6. Evaluate the important of postharvest diseases and to recommend suitable controls.
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| **C. Professional and Practical Skills:** |
| ***Successful completion of this course will allow students to be able to:***1. Use hand lens, digital cameras, drawing and microscope efficiently.
2. Differentiate between symptoms and signs of a given disease.
3. Record observed symptoms and gather data of a given disease.
4. Predict which diseases are present in provided plant from its symptoms and signs.
5. Perform the basic steps in preparing specimens to identify under light microscope
6. Record and analyze data of disease provided.
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| **D. General and Transferable Skills:** |
| ***Successful completion of this course will allow students to be able to:***1. Communicate ideas and arguments effectively.
2. Contribute to team work
3. Learn from different sources.
4. Maintain a professional image in manner, dress, speech and interpersonal relationships.
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| 3. CONTENTS |
| **Topic** | **No. of hours** | **Lectures** | **Practical** |
| 1. Plant disease concept, history, diagnosis, importance and classification.
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| 1. Parasitism and disease development. How pathogen attack plants?
 | 4 | 2 | 2 |
| 1. Pathogen effects on plant physiological functions. How plant defend themselves against pathogens?
 | 4 | 2 | 2 |
| 1. Genetics and plant disease.
 | 4 | 2 | 2 |
| 1. Effect of environment on development of plant disease. Management of some common plant diseases in Egypt.
 | 4 | 2 | 2 |
| 1. Dispersal of plant diseases in tropic and subtopic regions.
 | 4 | 2 | 2 |
| 1. Control of plant disease.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by fungi: Oomycetes and Zygomycetes.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by fungi: Ascomycestes.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by fungi: Basidiomycetes.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by fungi: Fungi Imperfecti.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by bacteria and phytoplasma.
 | 4 | 2 | 2 |
| 1. Specific plant diseases: diseases caused by viruses, viroids and nematodes.
 | 4 | 2 | 2 |
| 1. Specific plant diseases; diseases caused by parasitic higher plants and environmental factors.
 | 4 | 2 | 2 |

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| 4. TEACHING AND LEARNING METHODS |
| 1. The main subject areas are covered in the lectures (see syllabus plan).
2. Case study.
3. Cooperative groups.
4. Brain storming.
5. Learning cycle.
6. Students are given a topic to research in small groups which they report as an oral presentation. Collective feedback on the strengths and weaknesses of the presentations are provided.
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| 5. STUDENT ASSESSMENT METHODS |
| ***Students will be evaluated by attendance, fulfillment and effort in exercises and presentations, and examination grades:***1. Laboratory work: to assess the ability of students to understand and perform small laboratory experiments.
2. Assignments & students' portfolio: to assess the intellectual & general skills.
3. Mid-term exam: to assess the knowledge & understanding.
4. Practical exam: to assess the professional skills.
5. Final exam to assess the knowledge & understanding and intellectual skills.
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| 6. ASSESSMENT SCHEDULE |
| No | AssessmentAssessment | **Week** |
| 1 | Periodical exam  | 4, 8 |
| 2 | Practical exam | 12 |
| 3 | Oral exam | 13 |
| 4 | Final exam | 14 |

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| 7. WEIGHING OF ASSESSMENT |
| No | AssessmentAssessment | **%** |
| 1 | Periodical exam  | 15 |
| 2 | Practical exam | 15 |
| 3 | Oral exam | 10 |
| 4 | Final exam | 60 |
| TOTAL | 100 |

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| 8. LIST OF REFERENCES |
| 1. **Agrios, G. N. 2005**. Plant pathology.5th Ed. Academic Press, NY, USA. <http://books.google.de/books?id=xLdSrKhThNEC&pg=PA2&dq=.+Plant+pathology&hl=en&sa=X&ei=n0f3Ut2eNMittAb1zIHACA&ved=0CE8Q6AEwBA#v=onepage&q=.%20Plant%20pathology&f=false>
2. **Alexopoulos, J., Mimms C.W. and Blackwell M. 1996**. Introductory Mycology. John Wiley and Sons, NY, USA. <http://books.google.de/books?id=4O2zKv_khdQC&printsec=frontcover&dq=mycology&hl=en&sa=X&ei=ukf3Uv3tG4rLsgak44DgAQ&ved=0CC4Q6AEwAA#v=onepage&q=mycology&f=false>
3. **Kranz, J. 2002.** Comparative epidemiology of plant diseases. Springer Press, UK. <http://books.google.de/books?id=Z3HGFjWIA6UC&printsec=frontcover&dq=Comparative+epidemiology+of+plant+diseases&hl=en&sa=X&ei=zEf3UrXtO8jvswbzg4DgDw&ved=0CC4Q6AEwAA#v=onepage&q=Comparative%20epidemiology%20of%20plant%20diseases&f=false>
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| 9. FACILITIES REQUIRED FOR TEACHING AND LEARNING |
| 1. Teaching aids/materials: e.g. boards – overhead projector – data-show projector – stationary.. etc.
2. Teaching room/hall.
3. Computers.
4. Facilities for site visits etc., which are necessary for teaching the course.
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| **Course Coordinators:**  | **Prof. Dr. Gehad Desouki** **Dr. Mohamed El-Habbak**  |
| **Date: / / 2015** |