**The University of Jordan**

**Faculty: Faculty of Agriculture Department of Plant Protection**

**Program: ph.D in Plant Protection**

**Plant Virus Genetics and Replication**

 **(0606964)**

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| --- | --- | --- | --- | --- | --- |
| **Credit hours** | **3** | **Level** | Graduate | **Pre-requisite** |  |
| **Coordinator/ Lecturer** | Prof: Abdullah almusa | **Office number** | **------** | **Office phone** | 22529 |
| **Course website** | UJ E-learning portal | **E-mail** | almusaa@ju.edu.jo | **Place** |  |

|  |
| --- |
| **Office hours** |
| **Day/Time** | **Sunday** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** |
|  | **--** | **--** | **--** | **--** | **--** |
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**Course Description**

At the end of the course, students will be cognizant of salient futures of plant virus replication mechanism and how they manipulate their hosts or translation and transcription machinery and exploiting them for their benefits. The course will also extends information about variations and evolution within plant virus population.

**Learning Objectives**

The course provide information about the intricate mechanism of viral gene expression and replication elucidating the impact of nucleic acid structure. Consensus sequence and other modification on the translation and replication processes. In addition the course would provide information on the evolution and genetics of plant viruses with some practical implications.

**Intended Learning Outcomes (ILOs):**

Successful completion of the course should lead to the following outcomes:

**A. Knowledge and Understanding:** Student is expected to

**A1-** Translation of transcription

**A2-** events of plant virus replication

**A3-** strategies of plant virus genome translation

**A4-** strategies of plant virus genome replication

**A5-** replication of RNA and DNA plant virus evolution viral genetics

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**B. Intellectual Analytical and Cognitive Skills:** Student is expected to

B1- understands and analyze literature pertinent to replication, translation and evolution and genetics of plant viruses

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**C. Subject- Specific Skills:** Students is expected to

C1- understand the impact of nucleic acid structure consensus sequence and modification on translation replication process

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**D. Transferable Key Skills:** Students is expected to be:

D1- able to extrapolate some issues pertinent to the biology and some aspect of epidemiology and control of plant viruses.

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# ILOs: Learning and Evaluation Methods

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| --- | --- | --- |
| **ILO/s** | **Learning Methods** | **Evaluation Methods** |
| **A. Knowledge and Understanding:** | Lectures of discussion  | Exam, Quiz |
| **B. Intellectual Analytical and Cognitive Skills** | Lectures, Presentation  | Exam, presentation  |
| **C. Subject- Specific Skills** | Lectures  | Exams |
| **D. Transferable Key Skills:** | Lectures, reports | Exams |

**Course Contents**

|  |  |
| --- | --- |
| **week** | **Subject** |
| **1** | Basics of Eukaryotic translation of Control mechanisms |
| **2** |  Events of plant virus replication |
| **3** | Strategies of plant virus genome translation  |
| **4-8** |  Virus replication of DNA viral groups  |
| **9** | Basics of transcription and DNA replication  |
| **10&12** | Virus replication of DNA viral groups  |
| **13&14** | Evolution and viral genetics  |
| **15&16** | Papers |

**Learning Methodology**

## Power point presentation, paper discussions

# Evaluation

|  |  |  |
| --- | --- | --- |
| **Evaluation** | **Point %** | **Date** |
| **Midterm Exam**  | 15% |  |
| **Assignment/ presentation**  | 10% |  |
| **2- term exam** | 15% |  |
| **Final Exam**  | 60% |  |

**Main Reference/s:**

* R. Hull 2014*. Plant Virology*. Academic Press. 1104PP .
* Selected papers on the subject.

**Intended Grading Scale (Optional)**

0-39 **F**

40 -49 **D**-

50-54 **D**

55-59  **D+**

60-64 **C**-

65-69 **C**

70-73 **C+**

74-76 **B**-

77-80 **B**

81-84 **B+**

85-89 **A**-

90-100 **A**

**Notes:**

* Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming, then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter, problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For final complaints, there will be a committee to review grading the final exam.
* For more details on University regulations please visit:

 <http://www.ju.edu.jo/rules/index.htm>