



Philadelphia University
Faculty of Science
Department of Biotechnology & Genetic Engineering
First semester, 2014/2015

Course Syllabus

Course Title: Immunology Lab	Course code: 0240238
Course Level: 3rd year	Course pre- or co-requisite: Immunology
Lecture Time: Sec. 1Sun. 13:10 – 16:00	Credit hours: 1

Academic Staff

Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Esraa Al-haj ali	Lecturer	1016/ Department of Biotechnology	11- 12 am Daily	ealhajali@philadelphia.edu.jo

Teaching methods:

Lectures, experiments, Result discussion, Reports, Tutorials, problem solving, debate, etc.

Learning outcomes:

- Knowledge and understanding:

Students should be familiar with the components of the immune system (innate and acquired), types and location of lymph nodes, Humoral (antibody, complement and cytokines, and cellular (lymphocytes, granulocytes, NK cells etc). Immunization of animals and analysis of immune response using different techniques as precipitation, agglutination, ELISA and immunoblots. Newtechnology in cell identification and separation.

- Cognitive skills (thinking and analysis):

Working groups should be able to discuss their results after experiment carry out, solve and discuss problems and trouble shootings.

- Communication skills (personal and academic).

Raising questions and discussion of results with supervisor, brain storming and group work.

- Practical and subject specific skills (Transferable Skills).

Ability to perform experiments on animals on industrial scales and work in R&D departments. Antibody biotechnology experience transfer, cell separation and immunology research.

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 40 marks

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
Midterm examination	30 %
Final examination: 40 marks	40%
Reports, research projects, Quizzes, Home works, Projects	30 %
Total	100%

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Course/module academic calendar

week	Basic and support material to be covered
(1)	Introduction to the immune system
(2)	WBCs Count
(3)	Differential Blood Count
(4)	Isolation of human peripheral blood mononuclear cells using Ficoll paque
(5)	Agglutination reactions
(6)	Precipitation reactions: Double Diffusion Assay
(7)	Midterm Exam
(8)	Precipitation reactions: Single Radial Immunodiffusion(SRID), Immunoelectrophoresis
(9)	Enzyme-linked immunosorbent assay 1
(10)	Enzyme-linked immunosorbent assay 2
(11)	Handling of experimental animals And blood collection, Immunization of mice
(12)	Immunophenotyping by Flow cytometry
(13)	Final Exam

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.