



Jordan University
Faculty of Science
Department of Biological Sciences

Course Syllabus and Grading Policy Fall 2010-2011

Course code and name: 0344443 Immunology

Credit hours: 3 (2 theory and 1 practical)

Prerequisite: 0304321

Classrooms: Biology Auditorium

Practical Biology 316

Instructors' information:

Mona R. Hassuneh, PhD.

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Course Objectives:

This course aims to introduce students to basic concepts of immunology. Also, we wish to acquaint students with immunological implications in medicine, research and pharmaceutical industry. The theoretical part of the course will deal with the basic component of the immune system, mechanisms of immune response both humoral and cell mediated. In addition, we will discuss adverse effects of the immune response and what occurs in case of immune system dysfunction. The practical part of the course aims to give the student as much as possible hands on experience in assessing various immunological reactions and their use in diagnostic medicine as well as in biomedical research. Certain assays, which are long-term or too expensive, will only be demonstrated to familiarize the students.

GRADING POLICY:

Midterm Hour Exam:	20%	Lab Midterm	10%
Second Hour Exam:	20%	Lab Reports and Conduct.	10%
Final Exam:	30%	Lab Final	10%
Total = 100%			

REFERENCES:

➤ **Text Book:**

- Benjamini E., Sunshine G. and Leskowitz S. **Immunology: A short course**. 6th Ed 2009. Wiley-Liss, Inc New York U.S.A.

➤ **Extra Readings:**

- Charles A. Janeway, Paul Travers, Mark Walport and Mark Shlomchik **Immunobiology: The Immune System in Health & Disease**, 5th Ed 2001.
- Roitt, I., Brostoff, J. and Male, D. **Immunology**. 6th Edition 2002 Mosby Elsevier Science Limited, printed in Spain.
- Coico, R. Editor. **Current Protocols in Immunology** Volumes I, II, and III. 1997. John Wiley & Sons Inc. USA.

COURSE DESCRIPTION:

<u>Week 1.</u>	Chapter 1. INTRODUCTION AND OVERVIEW
<u>Week 2.</u>	Chapter 2. ELEMENTS OF INNATE AND ACQUIRED IMMUNITY
<u>Week 3.</u>	Chapter 3. IMMUNOGENS AND ANTIGENS
<u>Week 4-5.</u>	Chapter 4. ANTIBODY STRUCTURE AND FUNCTION

Midterm: Thursday, 28th of October 2010 9:00 am

Week 6. Chapter 6. THE GENETIC BASIS OF ANTIBODY STRUCTURE

Week 7. Chapter 7. BIOLOGY OF THE B LYMPHOCYTE

Week 8. Chapter 8. THE ROLE OF THE MAJOR HISTOCOMPATIBILITY COMPLEX IN THE IMMUNE RESPONSE

Week 9. Chapter 9.. BIOLOGY OF THE T LYMPHOCYTE

Second Exam: Thursday, 2nd of December 2010 9:00 am

Week 10. Chapter 10. ACTIVATION AND FUNCTION OF T AND B CELLS

Week 11. Chapter 11. CYTOKINES

Week 12. Chapter 13. COMPLEMENT

Week 13-14. IMMUNODEFICIENCY AND OTHER DISORDERS OF THE IMMUNE SYSTEM.

Final Exam: to Be Announced by Registrar & Deanship.

B443 Laboratory Part

COURSE DESCRIPTION:

Lab # 1. The Immune System Organs and Cells (Histology and Anatomy).

Lab # 2. Agglutination Reactions.

Lab # 3. Animal handling and immunization protocols

Lab # 4. Enzyme Linked Immunosorbent Assay (ELISA).

Lab # 5. Serum Protein Electrophoresis.

Lab # 6. Immunodiffusion (Ouchterlony).

Midterm Exam Thursday 11th of November 9:00 am

Lab # 7. Purification of Lymphocytes from Lymphoid Organs.

Lab # 8. Purification of Human Peripheral Lymphocytes

Lab # 9. IgM Plaque Forming Cell Assay.

Lab # 10. Mixed Lymphocyte Reaction.

Lab # 11. Flowcytometry

Lab # 12. Monoclonal Antibody Technology + (DVD Movie).

Lab Final Exam Thursday 6th of January 9:00 am.