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Department of Biology

College of Education

Salahaddin University-Erbil

Subject: **Practical** **Immunology**

Course Book – (Year: 4)

Lecturer's name: **Lawin A. Omar**

Academic Year: **2022/2023**

**Course Book**

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| **1. Course name** | Practical Immunology  |
| **2. Lecturer in charge** |  Lawin A. Omar |
| **3. Department/ College** | Biology/College of Education |
| **4. Contact** | **E-mail**: lawin.omar@su.edu.krd**Tel**: 0750 5830181 |
| **5. Time (in hours) per week**  |  **(6 hrs.)** |
| **6. Office hours** | **PhD student** |
| **7. Course code** | **EdB0402**  |
| **8. Teacher's academic profile**  | I have attended to College of Education, Biology Department/Salahaddin University /Erbil during 2006-2007, and I was at the top students in Biology class and college level with grade 81.296.In October 2009 started working as an official employee in the biology department as an assistant biologist. I got my master’s degree in 2013 with a grade of very good. I am studying for a PhD at the universityin immunology.  |
| **9. Keywords** | **Immunity, Serology, Antibody, Complement** |
| 10. Course overview: The objective of this course is to instil a broad based knowledge of the science of immunology. Immunology is a science that studies immunity. Historically, immunity has been understood as a defense against, or resistance to, contagious (infectious) diseases. It has become apparent, however, that the mechanisms that confer protection against the above diseases also operate when a body mounts a reaction against some innocuous substances. Such a reaction is triggered when certain substances that are not made in the body (‘‘foreign’’ substances) invade the body from outside. The mechanisms of immunity can protect against diseases that might be caused by the foreign agents but, on the other hand, these same mechanisms can themselves injure the body and cause disease. Therefore, immunity was redefined as a reaction against foreign substances, including – but not limited to – infectious microorganisms. This reaction may or may not be protective. This reaction is quite complex, involves many different cells, molecules, and genes (collectively termed the immune system), The response of the immune system to the introduction of foreign substances iscalled the immune response. Immunity is a part of a complex system of defense reactions of the body. These defense reactions can be innate or acquired. Innate (or natural) immunity refers to the work of mechanisms that pre-exist the invasion of foreign substances, while acquired immunity refers to a reaction that is caused by the invasion of a certain foreign substance. The ability of the immune system to ‘‘remember’’ an encounter with an antigen and to develop a qualitatively better response to it is called the immune memory. This feature is a paramount property of specific immunity. |
| **11. Course objective:****The course has two primary objectives:** * The main objectives of this course are, students should know something about the immunity and the arms of immunity ,component of the immune system, how our immune system work in disease and in health, antigen and their types , immunoglobulin and their classes, the different pathway of complement activation, cytokine and the mode of their action ….. and other different subjects.
* We will dissect the particular mechanisms of immunity and characterize the elements of the immune system and the properties of immune responses. The immune system—it is the only thing standing between us and a sea of microbial predators that could send us to an early and ugly death microbes.
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| **12. Student's obligation****The role of students and their obligations throughout the academic year include:****A. Quizzes and daily activities and seminar****B. 1st examination****C. 2nd examination****D. 3rd examination**  |
| **13. Forms of teaching**Different forms of teaching will be used to reach the objectives of the course: Using projectors to view PowerPoint slides and laser pointers for further explanation and using the whiteboard and coloured pens to illustrate the lab notes or slide's preparation. |
| **14. Assessment scheme** **Course grade****The following assignments will determine the grade: Quizzes, activities, and participating in lab works, daily questions, and examinations during the year.****No. Exam (Evaluation) Marks****1. Quizzes and daily activities 10****2. 1st Practical Exam 10****3. 2nd Practical Exam 10****4. Attendance of students 5****6. Total Scores 35/2=17.5** |
| 15. **Student learning outcome:** **After completing this course, students should be able to describe, identify, and/or explain:**Students must have knowledge about the immunological test that have done in practices and labs. Distinguishing between the causative agents of certain diseases and how to avoid them in life. |
| **16-Course Reading List and References‌** Hyde, R.M. (1995). Immunology. 3rd Ed., Williams & Wilkins. Philadelphia, USA. Dubey, R.C. and Maheshwari, D.K. (1999). Textbook of Microbiology. 1st Ed., S. chand & company ltd. Hossain, A. (2003). A short textbook of Immunology .2nd Ed. Jawetz,Melnick, Adelbergs .(2007). Medical Microbiology .24th Ed. Abbas,K.A,Lichtman ,A.H. and Pillai ,SH.(2007).Cellular and Molecular Immunology 6 th Ed. Philadelphia, USA. |
| **17.**  |
| **18. Topics lecturers name** |
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| Topics | Weeks |
| Week 1: Introduction to Immunity  | Lawin A. OmarTime: (4 hrs.) |
| Week 2: Blood group and immunity. | Lawin A. OmarTime: (4 hrs.) |
| Week 3 : CRP test  | Lawin A. OmarTime: (4 hrs.) |
| Week 4: ASO TEST | Lawin A. OmarTime: (4 hrs.) |
| Week 5: WIDAL TEST | Lawin A. OmarTime: (4 hrs.) |
| Week 6: Phagocytosis | Lawin A. OmarTime: (4 hrs.) |
| Week 7:ROSE BENGAL TEST  | Lawin A. OmarTime: (4 hrs.) |
| Week 8 – Rheumatoid factor test  | Lawin A. OmarTime: (4 hrs.) |
| Week 9: ELISA  | Lawin A. OmarTime: (4 hrs.) |
| Week 10:Complement  | Lawin A. OmarTime: (4 hrs.) |

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| **19. Extra notes:** |
| **20. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**   |