**In the Name of God**

**Hamadan University of Medical Sciences and Health Services**
**Educational Deputy of the University**
**Center for Studies and Development of Medical Sciences Education**

# Lesson Plan: Theory of Clinical Immunology

**Dear Colleagues,**

As the teaching-learning process is one that cannot achieve its objectives without planning, it is essential to develop a lesson plan at the beginning of the educational process (as a roadmap and guide for instructors and students). Therefore, it is requested that esteemed instructors exercise utmost care in completing the lesson plan.

## Course and Instructor Details (Completion of all items in this section is mandatory)

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|---|---|
| **Course Title** | **Clinical Immunology** |
| **Instructor Name** | Dr. Alireza Zamani |
| **Course Coordinator Name** | Dr. Alireza Zamani |
| **Department Head Name** | Dr. Mahdi Behzad |
| **Course Type and Credits** | ☒ Theoretical 1 Credit, ☐ Practical ... Credits |
| **Student Major and Level** | Medicine - Physiopathology |
| **Academic Semester** | First Semester ☐ Second Semester ☒ |

| Session | Topic | Behavioral Objectives | Learning Domain | Teaching Method | Duration | Teaching Aids | Evaluation Method |
|---|---|---|---|---|---|---|---|
| 1 | Safety Against Infectious Diseases | 1. Identify various defensive barriers against infectious agents.<br>2. Explain types of defense against extracellular bacteria, intracellular bacteria, and viruses. | 1. Cognitive (Knowledge)<br>2. Cognitive (Comprehension) | Lecture | 90 minutes | Video projector | Q&A |
| 2 | Vaccination | 1. Describe the history of vaccination in the world and Iran.<br>2. Name types of immunity and classify vaccines based on application and types of antigens. | 1. Cognitive (Knowledge)<br>2. Cognitive (Knowledge & Synthesis) | Lecture & Discussion | 90 minutes | Video projector | Q&A |
| 3 | Hypersensitivity | 1. Explain definitions and various types of hypersensitivity, allergens, IgE production, and cells involved in sensitivity, including the production of immediate and delayed mediators.<br>2. Describe in vivo and in vitro allergy | 1. Cognitive (Comprehension)<br>2. Cognitive (Knowledge) | Lecture & Discussion | 90 minutes | Video projector | Q&A |

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| | | diagnoses and treatments. | | | | | |
| 4 | Autoimmune Diseases | Explain types of autoimmune diseases and their treatment methods. | Cognitive (Comprehension) | Lecture | 90 minutes | Video projector | Q&A |
| 5 | Immunodeficiency Diseases | 1. Classify primary and secondary immunodeficiencies, including humoral, cellular, phagocytic, and complement deficiencies, with examples.<br>2. Explain immunopathogenesis mechanisms of various immunodeficiencies and available treatment options. | 1. Cognitive (Synthesis)<br>2. Cognitive (Comprehension) | Lecture | 90 minutes | Video projector | Q&A |
| 6 | Immunology of Hepatitis and AIDS | 1. Explain viral hepatitis and defenses against them.<br>2. Describe how the immune system is weakened due to HIV infection and the mechanisms the body employs to eliminate the virus. | 1. Cognitive (Comprehension)<br>2. Cognitive (Comprehension) | Lecture & Discussion | 90 minutes | Video projector | Q&A |
| 7 | Cancer Immunology | 1. Explain the immunological surveillance | 1. Cognitive (Comprehension) | Lecture | 90 minutes | Video projector | Q&A |

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| | | hypothesis.<br>2. Accurately classify various tumor markers with examples.<br>3. Describe immune responses to cancer cells. | 2. Cognitive (Synthesis)<br>3. Cognitive (Comprehension) | | | | |
| 8 | Immunology of Pregnancy and Transplantation | 1. Explain pregnancy immunology and mechanisms preventing fetal rejection.<br>2. Describe the importance of organ transplantation and its requirements.<br>3. Illustrate types of transplant rejection and how to control or prevent them. | 1. Cognitive (Comprehension)<br>2. Cognitive (Comprehension)<br>3. Cognitive (Analysis) | Lecture | 90 minutes | Video projector | Q&A |

## Grading Scheme

| Evaluation Type | Evaluation Tool | Points from Total |
|---|---|---|
| Quiz | ---- | ---- |
| Project Presentation | ---- | ---- |
| Midterm Exam | √ | 5 points |
| Final Exam | √ | 13 points |
| Other | In-class questions, regular attendance | 2 points |
| **Total** | | **20 points** |

## Reference

1- Cellular and molecular Immunology by: Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai (latest edition)

۲- ایمونولوژی (تالیف دکتر محمد وجگانی)