Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIEED

SCIENCES

Faculty of Laboratory medicine..

Department of MICROBIOLOGY & IMMUNOLOGY

Course Specification of Clinical Immunology
Course No. (03.02.325)
2022/2023

I. Course Identification and General Information:

1	**Course Title:**	Clinical Immunology			
2	**Course Code & Number:**	03.02.325			
3	**Credit Hours:**	**Theory Hours**			
		Lecture	**Exercise**	Practical	**Credit Hours**
		2	0	2	3
4	**Study Level/ Semester at which this Course is offered:**	2nd Level / 2nd Semester			
5	**Pre –Requisite (if any):**	**Basic of Immunology**			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Bachelor in laboratory medicine			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	semester			
10	**Mode of Delivery:**	Presentations and exercises			
11	**Location of Teaching the Course:**	University Campus			
12	**Prepared by:**	Dr\Gamil taher abdul mughni			
13	**Date of Approval:**				

II. Course Description:

The course will describe the immune response of the host to different types of infections eg .bacterial, viral and parasitic, the immune damage mediated in the different immune mediated disease eg. immunodeficiency disorders, autoimmune diseases and allergic conditions and the important mechanisms of immune damage so that students can form a sensible approach to the diagnosis, investigation and treatment of patients.

III. Alignment Course Intended Learning Outcomes with program outcomes			
III. Course Intended Learning Outcomes (CILOs)		**Referenced PILOs**	
A. Knowledge and Understanding: ***Upon successful completion of the course, students will be able to:***			
a1	**Recognize** the different mechanism of the immune system functions in health and disease.	**A1**	**Explain** all quality assurance measures and participate in performance improvement activities in the clinical laboratory
B. Intellectual Skills: ***Upon successful completion of the course, students will be able to:***			
b1	**Describe** common medical conditions affecting various human body organs based on immunological procedures in accurate and precise testing and data analysis.	**B2**	Diagnose common medical conditions affecting various organs of the human body.
C. Professional and Practical Skills: ***Upon successful completion of the course, students will be able to:***			
c2	-**Apply** quality control laboratory standards.	**C3**	Take responsibility in analysis and clinical decision-making such as recognizing and resolving issues related to pre-analytical. analytical. and post-analytical steps of the testing process
D. Transferable Skills: ***Upon successful completion of the course, students will be able to:***			
d1	**Demonstrate** responsibility for professional Laboratory Medicine practice including the essential values of ethics, self-respect, honesty, autonomy, humanity and social justice.	**D3**	**Collaborate** with patients. communities. organizations. and with members of the health team.

III. Alignment Course Intended Learning Outcomes with Teaching Strategies and Assessment methods :			
(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
A1	**Recognize** the different mechanism of the immune system functions in health and	Interactive lectures Self-learning	Written exam (mid and final terms and

	disease.	Discussion	quizzes) Final oral exam

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
B1	**Describe** common medical conditions affecting various human body organs based the immunological procedures in accurate and precise testing and data analysis.	• Practical session • Discussion • Self-learning	• Written exam (mid and final terms and quizzes). • Final practical exam • Final oral exam

C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
C1	-**Apply** quality control laboratory standards.	• Practical session • Self-learning	• Final practical exam • Assignment:

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
D1	**Demonstrate** responsibility for professional Laboratory Medicine practice including the essential values of ethics, self-respect, honesty, autonomy, humanity and social justice.	• Seminars • Self-learning • Presentation Case study (CBL)	• Written exam (mid and final terms and quizzes). Assignment:

Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Sub Topics List	Number of Weeks	contact hours	Learning Outcomes
1,2	An overview	Types of Immunity	2	4	a1

	about clinical immunology Infection and immunity	(bacterial, viral , fungal and parasitic)			
3	**Hypersensitivity reactions types I Immediate (Anaphylactic) Hypersensitivity**	Clinical cases of infectious diseases I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention	1	2	a1,b1
4	**A-Type II Cytotoxix Hypersensitivity** **B-Type III Immune - Complex Hypersensitivity**	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention	1	2	b1
5	Type IV Delayed (Cell-Mediated) Hypersensitivity	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention	1	2	a1,b1
6	Immunodeficiency 1	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention	1	2	a1,d1
7	-Primary and Secondary Defects	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features	1	2	b1,d1

		V)Diagnosis VI)Treatment VII)Prevention			
8	Med tem exam		1	2	a1,b1
9,10,11	Autoimmune disorders Tolerance and autoimmunity	I) Definitions II) Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention	3	4	d1
12	transplantation immunology,	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention		2	a1,b1,d1
13	Tumor immunology	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention Prevention		2	b1
14	Immunotherapy	I)Definitions II)Classifications III)Pathogenesis IV)Clinical features V)Diagnosis VI)Treatment VII)Prevention		2	a1
16	Final exam			2	b1
Number of Weeks /and Units Per Semester			**16**	**32**	

B - Practical Aspect: (if any)				
Order	**Tasks/ Experiments**	**Number of Weeks**	**contact hours**	**Learning Outcomes**
1	**Lab safety and Sample collection, preparation, preservation and handling**	**1**	**2**	c2
2	**Immunology Lab apparatus, quality control and sources of error.**	**1**	**2**	c2
3	**Inflammatory markers (CRP, PCT) 1**	**1**	**2**	c2
4	**Sandwich ELISA for detection of microbial antigens (HAV, HBV, H. pylori etc.,)**	**1**	**2**	c2
5	**TORCH 1**	**1**	**2**	c2
6	**ASO, serological test for diagnosis typhoid, and malta-fever. 1**	**1**	**2**	c2
7	**Diagnosis of allergy (atopic & non-atopic types), skin tests for identify allergen, measuring IgE level.**	**1**	**2**	c2
8	**Tumor markers 2**	**1**	**2**	c1
9	**Immuno-diffusion testing for diagnosis of various infectious diseases**	**1**	**2**	c1
10	**immuno-fluorescence microscopy for anti-nuclear antibody testing 1**	**1**	**2**	c1
11	**Western blotting for HIV confirmatory testing 1**	**1**	**2**	c1
12	**Flowcytometry technique for diagnosis of Immunodeficiency 1**	**1**	**2**	c1
Number of Weeks /and Units Per Semester				

V. Teaching Strategies of the Course:	
1-	• Lectures
2-	• Practical session
3-	• Self leaning
4-	• Discussion

5	• Presentation
6	• **Seminar**

VI. Assessment Methods of the Course:

No	Assignment	
1	**Written Exams (Short Essays) and Quizzes**	a1,b1
2	Written Exams(MCQ)	a1,b1,
3	Structured Oral Exams	a1,b1,d1
4	Practical Exams	c1
5	Student presentation	d1

VII. Assignments:

No.	Assignments	Week Due	Mark	Proportion of Final Assessment	Aligned CILOs (symbols)
1	**Midterm Exam**	7	15	15%	a1,b1
2	**Activity**	Throughout the semester	5	5%	d1
3	Practical Report	Throughout the semester	10	10 %	C
4	**Practical exam**	12	20	20%	C
5	**Final Exam**	14	50	50%	A4,B2,
Total					

Learning Resources:
• *Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).*
1- Required Textbook(s) (maximum two).
1- lecture note 2- Kuby Immunology, 10th Edition,2019:Jenni Punt; Sharon Stranford; Patricia Jones; Judy Owen
2- Essential References.
1-Roitt's Essential Immunology, 13th Edition. 13thEdition, Peter J. Delves et al., Wiley-Blackwell, 2017. **2-Cellular and Molecular Immunology 10th edition, Abul K. Abbas, ELSVIEVER, 2021.**
3- Electronic Materials and Web Sites *etc*.
1- https://www.youtube.com/results?search_query=Dr.+Saleh+Bahaj 2-https://onlinelearning.hms.harvard.edu/hmx/courses/immunology/ 3- https://www.edx.org/learn/immunology 4- https://onlinelearning.hms.harvard.edu/hmx/courses/hmx-immunology/ -https://immunology.utoronto.ca/online-learning

XI. *Course Policies:*	
1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** -If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment

	or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration