Course Specifications

Course Title:	**Clinical Virology and Mycology**
Course Code:	**373410-3**
Program:	**Bachelor's in Clinical Laboratory Sciences (Level-7)**
Department:	**Clinical Laboratory Sciences**
College:	**Applied Medical Sciences**
Institution:	**Taif University**

Table of Contents

A. Course Identification

1. Credit hours: 3 hours
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Level 7 / Fourth Year
4. Pre-requisites for this course (if any)**:** Basic of Medical Microbiology (373228-3)
5. Co-requisites for this course (if any)**:** None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	4 hours /week= 60 hours/semester	100%
2	**Blended**	None	0%
3	**E-learning**	None	0%
4	**Correspondence**	None	0%
5	**Other**	None	0%

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	30
3	**Tutorial**	None
4	**Others** (specify)	None
	Total	60
Other Learning Hours*		
1	**Study**	45
2	**Assignments**	5
3	**Library**	None
4	**Projects/Research Essays/Theses**	None
5	**Others**(specify)	None
	Total	50

*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

The course covers studying of the major viral human pathogens regarding: their properties, the diseases they cause to humans, their pathogenicity and the different laboratory methods for diagnosis of these diseases. The course also covers studying of the different groups of mycoses regarding the causative fungi and their morphological features, pathogenicity and different laboratory diagnostic methods.

2. Course Main Objective

By the end of this course, the students will gain adequate knowledge about different classes of viruses and fungi that infect human regarding their pathogenicity, laboratory characteristics and different methods for laboratory diagnosis of infections caused by these organisms, select and interpret the different diagnostic tests for viral and fungal infections. will be able to perform the different laboratory tests for diagnosing viral and fungal infections in a safe and effective manner both independently and within a team work.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Identify the classification, structure and morphological features of the different common human viral and fungal pathogens.	K1
1.2	Recognize the pathogenicity, virulence factors and mode of transmission of the different common human viral and fungal pathogens.	K1
1.3	Identify the different methods for laboratory diagnosis of infections caused by the common human viral and fungal pathogens.	K2
2	**Skills :**	
2.1	Select the proper laboratory diagnostic tests for the different suspected human viral and fungal infections.	S1
2.2	Interpret correctly the results of the various laboratory viral and fungal diagnostic tests and evaluate these results in correlation with the clinical condition of the patient.	S2
3	**Competence:**	
3.1	Perform the different laboratory tests for diagnosing viral and fungal infections in a safe and effective manner.	C1

C (a) Course Content (Theory)

No	List of Topics	Contact Hours
1	- Picornaviruses - Reoviruses - Calciviruses - Astroviruses	2

2	- Orthomyxoviruses - Paramyxoviruses - Rubella virus	3
3	- Coronaviruses - Rabies virus - Yellow fever virus - Dengue fever virus	3
4	- Human immunodeficiency virus	3
5	- Herpes Viruses - Poxviruses - Adenovirus - Parvovirus - Human papilloma virus	4
6	- Hepatitis viruses - Oncogenic viruses	4
7	- General Properties and classification of fungi - Superficial mycoses	2
8	- Cutaneous Mycoses	2
9	- Subcutaneous Mycoses - Actinomycetes	2
10	- Systemic Mycoses - Opportunistic Mycoses	5
Total		30

(b) Course Content (Practical)

No	List of Topics	Contact Hours
1	Introduction to virology diagnostic techniques Electron microscope	2
2	Cell culture	2
3	Introduction to serological tests used in diagnosis of viral infections Agglutination and haemagglutination	2
4	Immunofluorescence	2
5	Enzyme Linked Immune-sorbent Assay (ELISA)	4
6	Other serological tests (complement fixation, radioimmunoassay (RIA), Western blot)	2
7	Molecular diagnosis of viral infection.	2
8	Specimen Collection & Direct Microscopic Examination for Fungal Infection.	2
9	Culture & Identification of Fungi	4
10	Laboratory diagnosis of superficial mycoses Laboratory diagnosis of cutaneous mycoses	2
11	Laboratory diagnosis of subcutaneous Mycoses Laboratory diagnosis of Actinomycetes	2
12	Laboratory diagnosis of systemic mycoses Laboratory diagnosis of opportunistic mycoses	4
Total		30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Identify the classification, structure and morphological features of the different common human viral and fungal pathogens.	• Lectures	• Exams
1.2	Recognize the pathogenicity, virulence factors and mode of transmission of the different common human viral and fungal pathogens.	• Lectures	• Exams
1.3	Identify the different methods for laboratory diagnosis of infections caused by the common human viral and fungal pathogens.	• Lectures • Practical sessions	• Exams • Lab reports
2.0	**Skills**		
2.1	Select the proper laboratory diagnostic tests for the different suspected human viral and fungal infections.	• Lectures • Practical sessions	• Exams • Assignments. • Lab reports
2.2	Interpret correctly the results of the various laboratory viral and fungal diagnostic tests and evaluate these results in correlation with the clinical condition of the patient.	• Lectures • Practical sessions • Problem based learning	• Exams • OSPE
3.0	**Competence**		
3.1	Perform the different laboratory tests for diagnosing viral and fungal infections in a safe and effective manner.	• Practical sessions	• Lab reports • Exams

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-term Exam	8th Week	15%
2	Activity	Throughout the semester	5%
3	Practical Report	Throughout the semester	10%
4	Final Practical Exam	16th Week	20%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
5	Final Exam	17th/18th Week	50%
	Total		**100%**

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Course instructors are available for individual consultation in their free time. They are usually full-time permanent members present on-campus from 8:00 am to 2:30 pm on all working days. Appointments can be made in person with the instructor through email etc. Days and time availability of each instructor are posted on their doors. Course instructors provide a range of academic and course management advice including course planning and its progression.

- Each student at the department of Clinical Laboratory Sciences has an academic adviser who is available for individual consultation and guidance. Appointments can be made in person with the instructor through email etc. Days and time availability of each adviser are posted on their doors. The academic adviser can provide support with time management, exam preparation, clarification of subject requirements, feedback on performance and dealing with personal issues as well.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Medical Microbiology. Jawetz, Melnick, &Adelberg**,** Latest edition. • Review of Medical Microbiology & Immunology. Warren Levinson, Latest edition. • Bailey and Scott's Diagnostic Microbiology. Baron and Finegold. Latest Edition. • Practical Medical Microbiology. Mackie and McCartney, Latest edition.
Essential References Materials	None
Electronic Materials	Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
Other Learning Materials	• Journal of clinical microbiology • Journal of Medical microbiology • Journal of microbiology and biotechnology

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	• Biological safety cabinet. • Kits & reagents for the different serological reactions for diagnosing viral infections. • Autoclave. • Hot air oven. • Incubator. • Stains for detection of fungi & media suitable for the growth of fungi.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student's feedback on effectiveness of teaching and quality of courses.	Students	Indirect: Questionnaire Survey at the end of each semester.
Alignment map of course ILOs with that of program ILOs.	Development and accreditation committee	Direct: Student's Performance.
Availability of learning resources, facilities and equipments related to each course.	Students and faculty	Indirect: Questionnaire Survey at the end of each semester.
Evaluation of teaching	Peer evaluators	Direct: Peer evaluation
Standard of student achievement	Examination Committee	Direct: Students grades
Periodical review of course effectiveness and planning for its improvement.	Teaching staff/ Development and accreditation committee	Indirect: Review by Department Committee

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes,Quality oflearning resources, etc.)
Evaluators (Students,Faculty, Program Leaders,Peer Reviewer, Others (specify)
Assessment Methods(Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Meeting
Reference No.	Meeting No.10
Date	10-9-1440