



Course Specifications

Course Title:	Medical Mycology
Course Code:	MBIO 470
Program:	Microbiology (B.SC)
Department:	Botany and Microbiology
College:	Science
Institution:	King Saud University

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A. Course Identification

1. Credit hours: 3(2+0+2)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 7 th (Seventh)
4. Pre-requisites for this course (if any): MBIO-270
5. Co-requisites for this course (if any): MBIO- 140

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	0
4	Others (specify)	0
	Total	45

B. Course Objectives and Learning Outcomes

<p>1. Course Description Pathogenic Fungi for Human or Animals -Their Habitats - Mechanisms of Infection - Identification in infected tissues - Treatment and Protection.</p>
<p>2. Course Main Objective</p> <ul style="list-style-type: none"> * The course aims to provide, theoretical knowledge and practical skills needed to work with and identify the fungi and some filamentous actinomycetes that most commonly cause disease in humans and animals. * The course will impart basic scientific understanding of the role of fungi in causing different types of mycoses, their habitat, pathogenesis, mode of infection, transmission, protection and the emerging pathogens in patients with weak immunity. * Further this course will enable students to master the practical skills of diagnosis and identification of medically important fungi, some of the research and more advanced techniques being developed in this area.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	At the end of the course, the students will have knowledge about the ubiquitous nature of fungi, habitats favored by fungi, and substrates harboring fungal pathogens.	K1
1.2	At the end of the course, the students will be able to list the types of fungal infections and fungal structures associated with human mycosis	K2
1.3	At the end of the course, the students will be able to recognize the causative agents, symptoms, disease/clinical presentation, of several types of mycoses.	K3
1.4.	At the end of the course, the students will be able to demonstrate an understanding of different types of antifungal agents and their mode of action.	K4
2	Skills:	
2.1	At the end of the course, the students will develop the skill to collect the sample, isolate fungi, prepare slides, and identify them macro and microscopically.	S1
2.2	At the end of the course, the students will be able to write a scientific report/project, compile data, and present it in a scientific manner, and discuss it with the peers and instructors.	S2
2.3.	At the end of the course, the students will be able to keep up with the current discoveries in medical medical mycology and related advances throughout the world.	S3
3	Values:	
3.1	At the end of the course, the students will be able to work in a team, communicate, present and express themselves clearly, cheerfully, and effectively using proper voice tone.	V1
3.2	At the end of the course, the students will be able to demonstrate tolerance, respect for each other, and commitment to the scientific ethics.	V2

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to mycology with special reference to medical mycology.	3(2+0+2)
2	Classification of fungi and diagnosis of fungal infections.	3(2+0+2)
3	Mycosis –types of mycotic infections, disease presentations, modes of transmission, difference between unicellular, filamentous and dimorphic fungi.	3(2+0+2)
4	Superficial mycosis- <i>Tinea versicolor</i> <i>Tinea nigra</i> Black Piedra White piedra	6(4+0+4)
	Cutaneous mycoses (Dermatophytosis)	6(4+0+4)

	General characteristics Dermatophytes <i>Tinea capitis</i> <i>Tinea barbae</i> <i>Tinea corporis</i> <i>Tinea cruris</i> <i>Tinea pedis</i> <i>Tinea unguium</i> <i>Tinea manuum</i>	
	Keratomycosis Otomycosis	3(2+0+2)
5	Subcutaneous mycosis: General characteristics • Sporotrichosis • Mycetoma • Chromoblastomycosis • Rhinosporidiosis • Phaeohyphomycosis	6(4+0+4)
6	Systemic or Deep mycosis: General characteristics Blastomycosis Paracoccidioidomycosis Coccidioidomycosis Histoplasmosis	6(4+0+4)
7	Opportunistic infections: General characteristics Candidiasis Cryptococcosis Aspergillosis Penicilliosis Zygomycosis	
8	Antifungal agents: Types of antifungal drugs, classification and mode of action and target sites.	3(2+0+2)
Total		45

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 and Understanding		
1.1	At the end of the course, the students will have knowledge about the ubiquitous nature of fungi, habitats favored by fungi, and substrates harboring fungal pathogens.	❖ Lectures ❖ Practical laboratory	Midterms, final written exam, Practical exam and quizzes.
1.2	At the end of the course, the students will be able to list the types of fungal		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	infections and fungal structures associated with human mycosis	❖ Group discussion	Performance based assessment using rubrics
1.3	At the end of the course, the students will be able to recognize the causative agents, symptoms, disease/clinical presentation, of several types of mycoses		
1.4	At the end of the course, the students will be able to demonstrate an understanding of different types of antifungal agents and their mode of action.		
2.0	Skills		
2.1	At the end of the course, the students will develop the skill to collect the sample, isolate fungi, prepare slides, and identify them macro and microscopically.	❖ Lectures ❖ Laboratory	Midterms, final written exam, Practical exam and quizzes.
2.2	At the end of the course, the students will be able to write a scientific report/project, compile data, and present it in a scientific manner, and discuss it with the peers and instructors.		
2.3	At the end of the course, the students will be able to keep up with the current discoveries in medical mycology and related advances throughout the world.		
3.0	Values		
3.1	At the end of the course, the students will be able to work in a team, communicate, present and express themselves clearly, cheerfully, and effectively using proper voice tone.	❖ Group discussions ❖ Data collection and presentation on scientific and learning ethics ❖ Home assignments.	Performance based assessment using rubrics
3.2	At the end of the course, the students will be able to demonstrate tolerance, respect for each other, and commitment to the scientific ethics.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	1 st midterm exam	5	15%
2	2 nd midterm exam	9	15%
3	Practical lab exam	13	20%
4	Assignments and Lab reports	Periodically	10%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
		(during the entire semester).	
5	Final exam	15	40%
6			

*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:

- E-mail
- Blackboard
- Faculty personal website
- Office hours
- Practical support

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<p>Fundamental Medical Mycology 1st Edition by Erol Reiss, H. Jean Shadomy, G.Marshall Lyon Wiley & Sons, Inc., Hoboken, New Jersey USA, 2011 ISBN: 978-0-470-17791-4, Pages: 656.</p> <p>Medical Mycology: A Self-Instructional Text by Martha E Kern, MD and Kathleen S Blevins, PhD, Cls(nca), 1997 ISBN: 0803600364.</p> <p>Campbell M, Stewart J (1980). The medical mycology handbook. Wiley & Sons, Inc., Hoboken, New Jersey. SBN 10: 0471047287 ISBN 13: 9780471047285</p>
Essential References Materials	Laboratory Handbook of Medical Mycology by Michael R Mc Ginnis, 2012-ISBN-9780323138864
Electronic Materials	https://mycology.adelaide.edu.au/virtual/
Other Learning Materials	Medically Important Fungi: A Guide to Identification by Davish Larone.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Smart board classes (50 students per class) Lab. (25 students per lab) Blackboard

Item	Resources
<p>Technology Resources (AV, data show, Smart Board, software, etc.)</p>	Computer Printer Scanner Offer head projector Smart Board Interment access
<p>Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)</p>	Chemicals Disinfectant chemicals Cultural Media Protective gears Petri dishes Incubators Microscopically slides

G. Course Quality Evaluation


Evaluation Areas/Issues	Evaluators	Evaluation Methods
Achievement of students and learning outcomes	Teaching staff and students	<ul style="list-style-type: none"> indirect (Course evaluation questioner by students) indirect (faculty meetings)
Curriculum and learning resources	Faculty member	<ul style="list-style-type: none"> Indirect (Preparation of course report) Peer consultation on teaching Departmental council discussions
Effectiveness of teaching & assessment, learning resources	Faculty member	Student and teaching staff questionnaires. Self-study report final exam and quizzes-direct
Quality of learning resources	Student, Teaching staff, internal and external auditors	Student's questionnaires and Reports

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Academic Accreditation and Evaluation Committee 
Reference No.	Update-1443
Date	17/09/1443 H