



**A- COURSE TITLE, CODE, ACADEMIC YEAR:**

**Medical Mycology, MLT 321, 6<sup>th</sup> level**

**B- COURSE INFORMATION:**

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT 321	Medical Mycology	3	2	2	6 <sup>th</sup> level	MLT 222
<b>Course Coordinator</b>		<b>Extension</b>		<b>Email Address</b>		
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**C- COURSE DESCRIPTION:**

**The course gives important tuition about:**

- Skills in achieving the proper cultural, serological, immunological, and histopathological diagnosis of various clinical specimens.
- Skills in achieving the proper molecular techniques used in (yeast & fungal) characterization in clinical specimens.
- Skills in the diagnosis, prevention and treatment of toxicological aspects of various yeast & fungal infections of the human body systems (cutaneous & mucocutaneous, digestive, pulmonary, urinogenital, heart & circulatory and brain & cerebral systems).

**D- COURSE OBJECTIVES:**

**Brief summary of the knowledge or skill the course is intended to develop:**

- List factors leading to establishment, pathogenesis and complications of fungal infection.
- Discuss identification and diagnoses of various groups of yeast and fungal infection using conventional & molecular techniques.
- List skills in achieving the proper cultural, immunological, pathological, histopathological and Molecular laboratory diagnostic technique.
- Cite transmission, pathogenesis, treatment and prophylaxis of yeast & fungal human infection.
- Recall effective pathological interaction between fungi, viruses bacteria and parasites in the human body infection.
- Clarify effective pathological interaction between fungi and other microbial groups.



E- THEORY TOPICS:		
Week	Theory Topic	Contact Hours
1	Medically important fungi groups characteristic morphology and structure and its medical significance	2
2	Superficial fungal infection, causal organisms	2
3	Serological, immunological and histopathological and molecular characteristics and diagnostic procedures	2
4	Immunological, molecular and cultural differentiation between fungal and bacterial and viral skin diseases	2
5	Subcutaneous fungal infection serological immunological and histopathological and molecular characteristics	2
6	Maduromycosis characteristics immunological, histopathological and molecular diagnosis.	2
7	Chromoblastomycosis, and Sporotrichosis infection immunological and histopathological and molecular diagnostic procedures	2
8	Systemic fungal infection, aetiological agents immunological, histopathological and molecular diagnostic procedures	2
9	True pathogenic infection .Histoplasmosis, Blastomycosis and Coccidioidomycosis	2
10	Opportunistic systemic fungal infection immunological, Histopathological, and molecular diagnostic procedures	2
11	Medically important yeast infection diagnosis in various body systems (Immunological, Hstopathological, Molecular)	2
12	Miscellaneous fungal pathogen diagnostic procedures	2
13	Fungal antibiotic action, synergistic and antagonistic effect in regard to bacterial antibiotics.	2
14	Comparison of efficiency of various Molecular Techniques generally used in disease diagnosis.	2
15	Revision (General discussion and brain storming)	2

F- PRACTICAL SESSIONS:		
Week	Practical Session	Contact Hours
1	General characters of human pathogenic fungi, isolation , culturing , subculturing and microscopical examination from clinical specimens	2
2	Diagnosis of fungal infection in various infected clinical specimens	2
3	Diagnostic pathological examination of superficial fungal infection	2
4	Diagnostic immunological & pathological examination of dermatological fungal infection	2
5	Serological and immunological diagnosis of medical fungal agents from various lesions	2
6	Enzymatic activity of dermatophytes and relation to pathogenicity, diagnosis & prophylaxis	2
7	Diagnostic Serological Immunological, Histopathological examination of subcutaneous fungal infection	2
8	Pathological diagnosis of systemic fungal infection	2



9	Serological and immunological , Histopathological diagnosis of the group	2
10	Effect of fungal pathogens on living cells	2
11	Extraction of fungal toxins and its effect on living tissues	2
12	Detection of fungal antibodies in blood serum	2
13	Diagnosis of human Candidiasis, Cryptococcosis and other yeast infections	2
14	Molecular diagnosis of human pathogenic fungi	2
15	Molecular diagnosis of human pathogenic yeasts	2

#### G- ASSESSMENT TASKS:

#	Type of assessment task	Week	Total Grades
1	Continuous assessment	Weeks 1-13	10%
2	Midterm examination (written)	Week 8	15%
3	Assignment submission	Week 10	5%
4	Final practical exam	Week 16	30%
5	Final written examination	Week 17-18	40%

#### H- LEARNING RESOURCES:

##### 1- Required textbook:

- 1- Medical Mycology, K. J. Kwon-Chung and John E. Bennett, 2010.
- 2- Human Pathogenic Fungi: Molecular Biology and Pathogenic Mechanisms, Derek, J.Sullivan and Gary P. Moran 2014.

##### 2- Essential references:

- 1- Medical Mycology - William G. Merz, Roderick J. hay - Hodder Arnold ASM press, 2010.
- 2- Medical Mycology, David Ellis, The University of Adelaide, 2009.
- 3- Atlas of Clinical Fungi, 2008, G. S. de Hoog, J. Guarro, J. Gené, M. J. Figueras.

#### Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).
- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
- Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
- Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.



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- Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.