



Gyanmanjari
Innovative University

Course Syllabus
Gyanmanjari institute of medical sciences
and Health care
Semester-I

Subject: Principles of Medical Microbiology-PGDMT11502

Type of course: Major

Prerequisite: Basic knowledge and identification of etiology of disease

Rationale: The key values of medical microbiology are rapid and accurate diagnosis of microbial diseases, as well as understanding of microbial pathogenesis.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		C	Theory Marks		Practical Marks		
			ESE		MSE	V	P	ALA	
4	0	2	5	60	30	10	20	30	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	Quiz Faculty will conduct quiz session in the classroom per unit of the respected subject and marks will be uploaded in the Moodle.	10
2	Assignment Students make assignments individually and upload on Moodle.	10
3	Presentation Students need to prepare presentation individually and upload on Moodle.	10
Total		30



Course Content:

Sr. No	Course content	Hrs	% Weightage
1	Chapter:1 Diagnostic Bacteriology <ul style="list-style-type: none"> • Collection, Transportation and Examination of Clinical specimen: Urine, Sputum, Pus, Feces, Blood, CSF • Antimicrobial Sensitivity Test: Disc Diffusion and MIC • Causative agent, Pathogenesis and Laboratory diagnosis of Bacterial Diseases: Diphtheria; Cholera; Syphilis; Typhoid; Tuberculosis; Food poisoning; Urinary Tract Infection. • Hospital Acquired Infection. 	15	25
2	Chapter:2 Diagnostic Virology <ul style="list-style-type: none"> • General Structure, Morphology & Characteristics of Viruses • Classification of Virus. • Collection, Transportation and Examination of specimen. • Causative agent, Pathogenesis and Laboratory diagnosis of Viral Diseases: Dengue; Chikungunya; Common Cold; SARS; Hepatitis; AIDS. 	15	25
3	Chapter:3 Diagnostic Mycology <ul style="list-style-type: none"> • General Properties of Fungi. • Classification of Fungi. • Mycoses: Cutaneous, Sub Cutaneous and Superficial Mycosis. • Laboratory Diagnosis of Mycotic Infections. 	15	25



4	<p>Chapter:4 Diagnostic Parasitology</p> <ul style="list-style-type: none"> • Types of Parasites and Host, Host –Parasite Relationship • Sources of Infection and Portal of Entry into the human body. • General Laboratory Diagnosis • Examination of stool for Intestinal Parasitic Infection and Examination of blood for Parasitic Infection. 	15	25
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Suggested Specification table with Marks (Theory):60

Distribution of Theory Marks (Revised Bloom’s Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	40%	30%	10%	-	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:	
CO1	The conceptual basis for understanding pathogenic microorganisms and the mechanisms
CO2	Explain viruses with respect to syndrome, laboratory diagnosis and disease prevention measures
CO3	Provides the conceptual basis for understanding pathogenic fungi and the mechanisms by which they cause disease in the human body .
CO4	Explain the diagnosis of parasites present into the host and its relationship with human body.



List of Practical:

Sr no.	Description	Unit no.	Hrs.
1	Pure culture study	1	4
2	Isolation and identification of fungi (Aspergillus)	3	3
3	Isolation and identification of fungi (Penicillium)	3	3
4	Isolation and identification of fungi (Mucor)	3	3
5	Isolation and identification of fungi (Rhizopus)	3	3
6	Special staining	1	3
7	Differential staining Part 1 (capsule staining)	1	1
8	Differential staining part 2 (cell wall staining)	1	2
9	Hanging drop method	4	2
10	Biochemical reactions	1	6
	Total		30



Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, ecourses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- 1) Ananthnarayan R. and JayramPaniker C K. Text book of Medical Microbiology, 5th Edn. Orient Longman, Madras. (ISBN: 9788173718892).
- 2) Prescott M, Harley John P., Microbiology, 8th edition, Lansing, Donald A. Klein, McGraw Hill. (ISBN: 9780077467890)
- 3) Cheesbrough Monica, District laboratory practice in tropical countries VOL-1 & 2, , Cambridge University Press. (ISBN: 9780521665476)
- 4) Godkar P.B., (2005), Textbook of Medical Laboratory Technology Vol 1 & 2, Bhalani Publications.
- 5) Atlas R M, (1997), Principles of Microbiology. 2nd edn. Wm. C. Brown Pub., Iowa, USA.

