

FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)

DEPARTMENT OF MICROBIOLOGY

COURSE CURRICULUM

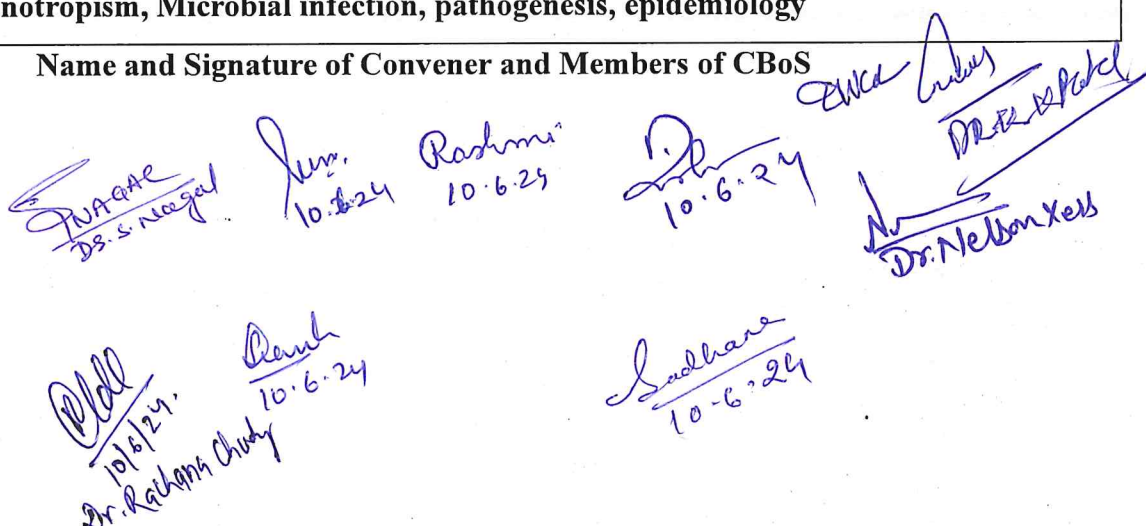
PART – A: Introduction			
Program: Bachelor in Life Science (Honors/ Honors with Research)		Semester - VII	
		Session: 2024-25	
1	Course Code	MBSE-05 T	
2	Course Title	Medical Microbiology	
3	Course Type	Discipline Specific Elective (DSE)	
4	Prerequisite (If Any)	As per Program	
5	Course Learning Outcomes (CLO)	At the end of this course, the students will be able to – <ul style="list-style-type: none"> ➤ define the history of medical microbiology ➤ identify medically important microorganisms ➤ explain the mechanism of infection ➤ examine bacterial diseases ➤ examine fungal diseases 	
6	Credit Value	03 Credits	Credit = 15 Hours - Learning & Observation
7	Total Marks	Max. Marks: 100	Minimum Passing marks: 40

PART – B: Content of the Course

Total No. of Teaching-Learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

Unit	Topics (Course contents)	No. of Period
I	Introduction of medical microbiology and concept of infection: Historical development, Koch & River's postulates, role of microbiology in medicine of medically important microbes; microbial flora of human body.	12
II	Pathogenesis: Microbial infection-types, stages and process. Mechanism of bacterial adhesion, colonization and invasion of mucous membranes of respiratory, enteric and urogenital tracts. Role of agresins, depolymerizing enzymes, organotropism, variation and virulence.	11
III	Clinical Bacteriology: Pathogenic bacteria-morphological characteristics, epidemiology, pathogenesis, laboratory diagnosis and treatment of pathogenic bacteria; <i>Staphylococcus aureus</i> , group A <i>Streptococcus</i> , <i>Pneumococci</i> , <i>E. coli</i> , <i>Salmonella</i> , <i>Corynebacterium Mycobacterium</i> and drug resistance.	11
IV	Clinical Mycology: Superficial, subcutaneous, cutaneous and systemic mycoses. General description of mycotic pathogens, the diagnosis and prevention. Pathogenic fungi: <i>Microsporium</i> , <i>Trichophyton</i> , <i>Histoplasma capsulatum</i> , <i>Blastomyces dermatitidis</i> , <i>Candida albicans</i> , <i>Cryptococcus neoformans</i> .	11
Key Words	Organotropism, Microbial infection, pathogenesis, epidemiology	

Name and Signature of Convener and Members of CBoS



 Dr. S. Nagal 10.6.24
 Roshmi 10.6.24
 Dr. Nelson Xes
 Dr. Rajendra Choudhary 10.6.24
 Sudhakar 10.6.24

Part – C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

1. Text book of Microbiology; R. Anantharayanan, C. K. Jayaram Panikar, Orient Longman, Mumbai.
2. Medical microbiology; P. Chakraborty
3. A Text Book of Microbiology: R. C. Dubey & D. K. Maheshwari

Reference Books:

1. Medical Microbiology; N. C. Dey and T. K. Dey, Allied agency, Calcutta.
2. Microbiology; Davis, Dulbecco, Eisen Harper and Row Maryland.

Online Resources – e-Resources/ e-Books and e- learning portals

- <https://microbiologysociety.org/static/uploaded/23cbf9c5-f8c8-4f91-b092a4ad819e6357.pdf>
- https://books.google.co.in/books?id=RLpEDwAAQBAJ&pg=PA46&source=gbs_toc_r&cad=2#v=onepage&q&f=false
- https://sist.sathyabama.ac.in/sist_coursematerial/uploads/SMB3101.pdf
- <https://repository.poltekkes-kaltim.ac.id/1153/1/medical%20microbiology.pdf>

Part – D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: **100 Marks**
Continuous Internal Assessment (CIA): **30 Marks**
End Semester Exam (ESE): **70 Marks**

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz – (2): 20+20	Better marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 30 Marks
	Assignment/ Seminar – 10	
	Total Marks – 30	

End Semester Exam (ESE):	Two Section – A & B Section A: Q1. Objective 10 X 1 = 10 Mark; Q2. Short answer type – 5X4= 20 Marks Section B: Descriptive answer type qts., 1 out of 2 from each unit – 4X10 = 40 Marks
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Name and Signature of Convener and Members of CBoS

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FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)

DEPARTMENT OF MICROBIOLOGY

COURSE CURRICULUM

PART – A: Introduction	
Program: Bachelor in Life Science (Honors/ Honors with Research)	Semester -VII
	Session: 2024-25
1	Course Code MBSE-05 P
2	Course Title Lab. Course MBSE-05
3	Course Type Laboratory Course
4	Prerequisite (If Any) As per Program
5	Course Learning Outcomes (CLO) At the end of this course, the students will be able to – ➤ prepare culture media and examine of different pathological samples ➤ compare various staining techniques ➤ relate serological tests for disease diagnosis ➤ justify antibiotic sensitivity tests
6	Credit Value 1 Credit <i>Credit = 30 Hours. Laboratory or Field learning/ Training</i>
7	Total Marks Max. Marks: 50 Min. Passing marks: 20

PART: B CONTENT OF THE COURSE

Total No. of Teaching-Learning Periods: 30Hours

Module	Topics (Course contents)	No. of Period
Lab./ Field Training/ Experiment contents of Course	1. Preparation of culture media: Blood agar, Chocolate agar, MacConkey agar. 2. Isolation of bacteria from tooth crevices. 3. Staining techniques: Gram staining, Acid fast staining, metachromatic granule staining. 4. Demonstration of hemolysis on blood agar. 5. Perform microscopic examination of urine. 6. Isolation and identification of bacteria from pathological samples. 7. Perform serological tests: WIDAL, VDRL. 8. Perform antibiotic sensitivity test by disc diffusion method.	30
Key Words	Culture media, Staining Techniques, Pathological samples, Antibiotic sensitivity test	

PART – C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

- Laboratory Manual of Microbiology and Biotechnology: Aneja K. R
- Practical Microbiology: R. C. Dubey and D. K. Maheshwari.
- Laboratory Manual in Microbiology: P. Gunasekaran.

Online Resources:

- <https://books.google.co.in/books?id=Wh9OTbjcsfUC&printsec=age&q&f=false>
- <https://microbiologysociety.org/static/uploaded/23cbf9c5-f8c8-4f91-b092a4ad819e6357.pdf>
- https://books.google.co.in/books?id=RLpEDwAAQBAJ&pg=PA46&source=gbs_toc_r&cad=2#v=onepage&q&f=false

PART – D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test/ Quiz – (2): 10 & 10 Assignment/ Seminar + Attendance: 05 Total Marks: 15	Better Marks out of the two Test/ Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory/ Field Skill Performance: On spot Assessment A. Performed the Task based on lab. work – 20 Marks B. Spotting based on tools & technology (written) - 10 Marks Viva-voce (based on principle/ technology) – 05 Marks	Managed by course teacher as per lab. status

Name and Signature of Convener and Members of CBoS

The bottom of the page contains several handwritten signatures in blue ink, each accompanied by a date. From left to right, the signatures are: 1. A signature with the date 10/6/24. 2. A signature with the date 10/6/24. 3. A signature with the date 10.6.24. 4. A signature with the date 10.6.24. 5. A signature with the date 10.6.24. 6. A signature with the date 10.6.24. 7. A signature with the date 10.6.24.