

Course Plan: Medical Bacteriology

General Information

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| Course Title | Medical Bacteriology |
| Level | Undergraduate Medical Students (MD Program) |
| Credit Hours | 3 hours lecture per week |
| Course Description | This course provides students with fundamental knowledge of pathogenic bacteria relevant to human health and disease. Emphasis is on bacterial physiology, virulence, clinical significance, diagnosis, antimicrobial susceptibility, and infection control. |
| Overall Goal | To equip medical students with the knowledge and practical skills necessary to understand, diagnose, and manage bacterial infections, while fostering rational antimicrobial use and infection prevention strategies. |

Specific Learning Objectives

Knowledge-Based Objectives

1. Describe bacterial structure, physiology, and classification.
2. Explain bacterial pathogenicity and host-pathogen interactions.
3. Identify clinical significance of major bacterial groups.
4. Discuss diagnostic methods (microscopy, culture, biochemical, molecular).
5. Outline principles of antimicrobial therapy and resistance.
6. Describe infection prevention and control strategies.

Skill-Based Objectives

1. Demonstrate correct specimen collection and handling.
2. Differentiate bacterial pathogens based on phenotypic/biochemical features.

Attitude/Professionalism Objectives

1. Apply biosafety and aseptic techniques.
2. Recognize the physician's role in rational antibiotic use and resistance control.
3. Develop teamwork and communication in lab/clinical problem-solving.

Teaching & Learning Methods

- Lectures with multimedia presentations
- Case-based discussions
- Small-group tutorials
- Problem-based learning (PBL) exercises

Assessment Methods

- Written examinations (MCQs)
- Continuous assessment (quizzes, participation)

Instructor Information

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| Course Instructor | Dr. Hossein Fazeli |
| Academic Rank | Professor |
| Department | Department of Microbiology |
| Faculty | Faculty of Medicine |
| Educational Background | PhD in Medical Microbiology |
| Teaching Experience | 20 Years of teaching in Medical Bacteriology / Microbiology |
| Research Interests | Antimicrobial resistance, Bacterial pathogenesis, Clinical diagnostics |
| Contact Information | Email: h_fazeli@med.mui.ac.ir |
| Office Address | Department of Microbiology, Faculty of Medicine |
| Office Hours | Days and times for student consultation |
| Responsibilities in Course | Course design, Lecturing Assessment, Student mentoring |

| | Main Topic | Teacher's Name | Time | Date |
|----|--|-----------------------|-------------|-------------|
| 1 | Science of microbiology | Dr A. Mirzaei | 8-9 AM | ۰۴/۱۲/۵ |
| 2 | Bacterial Structure 1 (Prokaryotic cell structure including nucleoid and cytoplasmic structure) | Dr A. Mirzaei | 9-10 AM | ۰۴/۱۲/۵ |
| 3 | Bacterial Structure 2 (Cell wall and cell membrane) | Dr J .Faghri | 8-9 AM | ۰۴/۱۲/۶ |
| 4 | Classification of bacteria | Dr A. Mirzaei | 9-10 AM | ۰۴/۱۲/۶ |
| 5 | Physiology and Metabolism of bacteria | Dr B. Nasr Esfahani | 8-9 AM | ۰۴/۱۲/۱۲ |
| 6 | Physiology and Metabolism of bacteria | Dr B. Nasr Esfahani | 9-10 AM | ۰۴/۱۲/۱۲ |
| 7 | Bacterial growth | Dr J.Faghri | 8-9 AM | ۰۴/۱۲/۱۳ |
| 8 | Pathogenesis | Dr A. Mirzaei | 9-10 AM | ۰۴/۱۲/۱۳ |
| 9 | Disinfection and Sterilization | Dr H. Fazeli | 8-9 AM | ۰۴/۱۲/۱۹ |
| 10 | Disinfection and Sterilization | Dr H. Fazeli | 9-10 AM | ۰۴/۱۲/۱۹ |
| 11 | Bacterial Genetics | Dr A. Mirzaei | 8-9 AM | ۰۴/۱۲/۲۶ |
| 12 | Bacterial Genetics | Dr A. Mirzaei | 9-10 AM | ۰۴/۱۲/۲۶ |
| 13 | Antibiotics; Mechanisms of Action and resistance | Dr H. Fazeli | 8-9 AM | ۰۴/۱۲/۲۷ |
| 14 | Normal flora | Dr J .Faghri | 9-10 AM | ۰۴/۱۲/۲۷ |
| 15 | Gram positive cocci, Staphylococci | Dr. N. Hosseini | 8-9 AM | ۰۵/۱/۱۸ |
| 16 | Gram positive cocci, Staphylococci | Dr. N. Hosseini | 9-10 AM | ۰۵/۱/۱۸ |
| 17 | Streptococci; Enterococcus | Dr B. Nasr Esfahani | 8-9 AM | ۰۵/۱/۱۹ |
| 18 | Streptococci; Enterococcus | Dr B. Nasr Esfahani | 9-10 AM | ۰۵/۱/۱۹ |
| 19 | Neisseria and Branhamella | Dr. N. Hosseini | 8-9 AM | ۰۵/۱/۲۶ |
| 20 | Gram- positive Bacilli; Listeria, Corynebacterium | Dr. N. Hosseini | 9-10 AM | ۰۵/۱/۲۶ |
| 21 | Gram-positive Bacilli, Bacillus anthracis | Dr B. Nasr Esfahani | 8-9 AM | ۰۵/۲/۱ |

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| 22 | Gram-positive Bacilli, Clostridia | Dr. N. Hosseini | 9-10 AM | ۰۵/۲/۱ |
| 23 | Enterobacteriaceae and E. coli | Dr H. Fazeli | 8-9 AM | ۰۵/۲/۲ |
| 24 | Shigella and Salmonella | Dr H. Fazeli | 9-10 AM | ۰۵/۲/۲ |
| 25 | Pseudomonas and non-fermentive bacteria | Dr H. Fazeli | 8-9 AM | ۰۵/۲/۸ |
| 26 | Hemophilus and other fastidious Gram-negatives | Dr J. Faghri | 9-10 AM | ۰۵/۲/۸ |
| 27 | Vibrio | Dr. N. Hosseini | 8-9 AM | ۰۵/۲/۹ |
| 28 | Mycobacterium tuberculosis | Dr B. Nasr Esfahani | 9-10 AM | ۰۵/۲/۹ |
| 29 | Atypical Mycobacteria and leprosy | Dr B. Nasr Esfahani | 8-9 AM | ۰۵/۲/۱۵ |
| 30 | Legionella, Yersinia and Miscellaneous organisms | Dr J. Faghri | 9-10 AM | ۰۵/۲/۱۵ |
| 31 | Brucella | Dr. N. Hosseini | 8-9 AM | ۰۵/۲/۱۶ |
| 32 | Campylobacter | Dr A. Mirzaei | 9-10 AM | ۰۵/۲/۱۶ |
| 33 | Helicobacter | Dr A. Mirzaei | 8-9 AM | ۰۵/۲/۲۲ |
| 34 | Spirochetes: Treponema, | Dr J. Faghri | 9-10 AM | ۰۵/۲/۲۲ |
| 35 | Spirochetes: Borellia | Dr J. Faghri | 8-9 AM | ۰۵/۲/۲۳ |
| 36 | Chlamydia | Dr H. Fazeli | 9-10 AM | ۰۵/۲/۲۳ |
| 37 | Bordetella, and Francisella | Dr J. Faghri | 8-9 AM | ۰۵/۲/۲۹ |
| 38 | Actinomyces | Dr J. Faghri | 9-10 AM | ۰۵/۲/۲۹ |
| 39 | Nocardia | Dr J. Faghri | 8-9 AM | ۰۵/۲/۳۰ |
| 40 | Bacteroides and Gram-negative Anaerobes | Dr J. Faghri | 9-10 AM | ۰۵/۲/۳۰ |
| 41 | Rickettsia's | Dr A. Mirzaei | 8-9 AM | ۰۵/۳/۵ |
| 42 | Mycoplasma | Dr. N. Hosseini | 9-10 AM | ۰۵/۳/۵ |