Rawalpindi Medical University

Log Book
MD Microbiology

Table of content

SECTION-I

SECTION - I

CERTIFICATE

This is to certify that, to the best of my knowledge, all the entries in the

Log Book of _____
(Name of Trainee)

having the Registration No. _____ are correct.

Signature of Head of the Department_____

Signature of Head of the Institution_____

SECTION - I

STUDENT'S PROFILE

Name:_____

Father's Name: _____

Date of Birth: _____ CNIC NO._____

Address: _____

Phone No: Office_____ Res: _____ Mobile:_____

E-Mail:_____

University registration #:_____

Program (Discipline):_____

Mode of Study:_____ Full Time / Part Time _____

SECTION - I

SUPERVISOR/CO-SUPERVISOR'S DETAILS

Main Supervisor:

Name_____

Qualification_____

Designation_____

Registration #:_____

Email_____

Co-Supervisor 1

Name_____

Designation_____

Email_____

Co-Supervisor 2

Name_____

Designation_____

Email_____

SECTION - I

GRADUATION HISTORY (MBBS)

Institution_____

University_____

Year of Passing_____

ANY OTHER COURSE (S) COMPLETED AFTER M.B.B.S. BEFORE JOINING MD Mology

S #	Name and Details of Course/Degree

SECTION - I

INSTITUTION'S DETAILS

Name: _____

Address: _____

Vice Chancellor: _____

Training Department: _____

CHAIRPERSON/HEAD OF THE DEPARTMENT:

Name: _____

Academic and professional details _____

Designation: _____

RELEVANT TEACHING/RESEARCH EXPERIENCE

S. No.	INSTITUTION	DESIGNATION	FROM	Till

Section II

SECTION II

ASSESSMENT PROCEDURE

Formative assessment

Summative assessment

Semester Examination marks

Examination marks will have following components:

- 1st In Training Assessment (ITA) 300 marks
- Mid-Term Assessment (MTA) 500 marks
- 2nd Internal Assessment (ITA) 300 marks
- Final-Term Assessment (FTA) 800 marks
- Thesis 200 marks

In Training Assessment (ITA) **Max marks 300**

Written Paper	
MCQs:	50 marks
SAQs: 6x5	30 marks
LEQs: 2x10	20 marks
Practical Exam	
Lab Techniques	40 marks
OSPE: 6x5	30 marks
Viva Voce	30 marks
Log Book (Internal Assessment)	100 marks

Mid Term Assessment (MTA) — **Max marks 500**

Written Paper	
Paper A	
MCQs:	100 marks
Paper B	
SAQs: 14x5	70 marks
LEQs: 3x10	30 marks
Practical Exam	
Lab Techniques	70 marks
OSPE: 6x5	30 marks
Viva Voce:	100 marks
Log Book (Internal Assessment)	100 marks

Final Term Assessment (FTA)-Comprehensive Qualifying Exam — **Max marks 800**

Written Paper	
Paper A	
MCQs	100 marks
Paper B	
SAQs: 14x5	70 marks
LEQs: 3x10	30 marks
Practical Exam	
Lab Techniques	100 marks
OSPE: 10x5	50 marks
Viva Voce:	150 marks
Log Book (Internal Assessment)	100 marks
(75% marks -for legibility to sit in FTA)	
Thesis Defense	200 marks

SECTION - II

DEPARTMENT OF MICROBIOLOGY RAWALPINDI MEDICAL UNIVERSITY, RWP
PGT EVULATION PROFORMA BY SUPERVISOR

NAME: _____ SESSION: _____

PROGRAM_____ COURSE TITLE: _____

CIA CRITERIA	**1st ITA**	**MTA**	**2nd ITA**	**FTA**
Attendance				
Presentations				
Lecturers				
SGD				
Tutorials/Guided self-study				
Practical				
Professionalism				
Conduct				

TEST RESULTS	**1st ITA**	**MTA**	**2nd ITA**	**FTA**
Written				
Viva Voce				
OSPE				
Practical				
Presentation				
Total				
REMARKS				

SUPERVISOR SIGNATURE: _____

Section III

DETAILS OF LEAVE FROM THE MAIN TRAINING INSTITUTION

S. No.	Nature of Leave	Period		Number of Days	Reason for Leave
		From	To		

CALENDAR YEAR _____

NUMBER OF DAYS OF LEAVE_____

Signature of the Supervisor_____

ROTATIONS IN OTHER RELATED DEPARTMENTS

S. No	Department/Institute	Head of Department	Duration	Specific Task performed

SECTION-IV

Content to be Covered

MD MICROBIOLOGY

LAB WORK

YEAR 1

General Bacteriology, Systemic Bacteriology and Applied Microbiology

1. Introduction to microbiology laboratory work set up, equipment and consumables.
2. Handling of laboratory equipment.
3. Maintenance of record of all consumables and equipment being used in microbiology laboratory.
4. Purchase of laboratory equipment and consumables.
5. Critical values in microbiology laboratory and their timely information to attending physician.
6. Collection / transport of specimens for microbiological investigations.
7. Preparation, examination & interpretation of direct smears from clinical specimens.
8. Plating clinical specimens on media for isolation, purification, identification and quantification purposes.
9. Preparation of stains viz., Gram, Albert's, capsules, spores, Ziehl Neelsen (ZN) Silver impregnation stain and special stains, etc.
10. Preparation and pouring of media.
11. Preparation of reagents
12. Quality control of media, reagents, etc.
13. Operation of autoclave, hot air oven, distillation plant, filters like sietz and membrane filters.
14. Infection prevention and control in clinical laboratories and hospitals.
15. Standard and expanded precautions in clinical laboratories and hospital settings.
16. Physical and biological containment
17. Hospital waste management
18. Disposal of Infectious waste in clinical laboratory.
19. Disinfection of contaminated materials like cultures.
20. CLSI guidelines; interpretation and implementation.
21. Quality control and quality assurance.
22. Microscopy techniques used in clinical and microbiology laboratory
23. Care and operation of microscopes.
24. Washing and sterilization of glassware (plugging and packing).
25. Care and maintenance of common laboratory equipment like water bath, centrifuge, refrigerators, incubators, etc.

26. Aseptic practices in laboratory and safety precautions.
27. Sterilization and disinfection of consumables and equipment and surfaces in laboratory.
28. Biosafety and biosecurity in microbiology laboratory.
29. Biosafety levels for clinical laboratories.
30. Use of various types of Biosafety cabinets and their maintenance.
31. Aseptic practices in laboratory and safety precautions.
32. Sterility tests.
33. Sample collection and handling.
34. Sample processing.
35. Plating clinical specimens on media for isolation, purification, identification, and quantification purposes.
36. Sample collection from different sites of the human body.
37. Sample transportation within hospital and outside the hospital.
38. Sample labelling, sample receiving criteria, timeline for sample reporting.
39. Sample inoculation on different culture media, biochemical reaction testing.
40. Antimicrobial sensitivity testing techniques.
41. Reporting of culture and sensitivity tests.
42. Interpretation of microbiological laboratory reports.
43. Test for Beta-lactamase production.
44. Introduction of semiautomated and automated methods used in microbiological laboratory.
45. Long term and short-term preservation of microbiological cultures. Maintenance & preservation of bacterial cultures.
46. Preparation, examination & interpretation of direct smears from clinical specimens.
47. Identification of bacteria of medical importance up to species level (except anaerobes which could be up to generic level).
48. Introduction to the techniques of anaerobiosis.
49. Tests for Motility: hanging drop, Cragie's tube, dark ground microscopy for spirochaetes.
50. In-vitro toxigenicity tests – Elek test, Naegler's reaction.
51. Special tests – Bile solubility, chick cell agglutination, sheep cell hemolysis, niacin and
52. catalase tests for Mycobacterium, Satellitism, CAMP test, catalase, slide & tube Coagulase test.
53. Test for Beta-lactamase production.
54. Testing of disinfectants – Phenol coefficient and "in use" tests.
55. Quantitative analysis of urine by pour plate method and semiquantitative analysis by standard loop tests for finding significant bacteriuria.
56. Disposal of contaminated materials like cultures.
57. Disposal of infectious waste.
58. Bacteriological tests for water, food and air.
59. Maintenance & preservation of bacterial cultures.
60. Intradermal test like Mantoux.

Immunology

1. Collection of blood by venipuncture, separation of serum and preservation of serum for short and long periods. Preparation of antigens and their standardization.
2. Performance of serological tests.
3. ELISA.
4. Latex and staphylococcal co-agglutination test separation of lymphocyte.
5. Separation of Lymphocyte and T cell rosette.
6. Immunoelectrophoretic techniques.

Virology

1. Preparation of glassware for tissue cultures (washing, sterilization).
2. Preparation of media used for viruses.
3. Preparation of clinical specimens for isolation of viruses.
4. Serological tests – Elisa for HIV, HBsAg, Hemagglutination inhibition and Hemadsorption for influenza virus.
5. Introduction to molecular techniques.
6. Sample collection for PCR.
7. Sampe processing steps of Polymerase chain reaction techniques.
8. Pipetting techniques.

Mycology

1. Collection of Specimen.
2. Direct Examination of Specimen.
3. Examination of Histopathology slides.
4. Isolation and identification of fungi & slide culture.
5. Special techniques.

Parasitology

1. Collection of Specimen.
2. Examination of faeces for parasitic ova and cyst by direct and concentration method.
3. Egg counting techniques for helminths.
4. Examination of blood smears for protozoa.
5. Histopathology sections – Examination and identification of parasites.
6. Leishman and Giemsa staining.
7. Identification of common arthropods and vectors.

8. Preservation of parasites – mounting fixing & staining Maintenance of stock cultures.

YEAR 2

Rotations in Related Specialties

Histopathology: 3 months
Hematology: 3 months
Chemical Pathology: 3 months
Molecular Biology: 2 months

YEAR 3

Bacteriology

1. Multidrug resistant organism detection and reporting.
2. Isolation precautions for specific infections.
3. MRSA isolation and AST reporting
4. Preparation of antibiotic discs; performance of antimicrobial susceptibility testing e.g., Kirby-Bauer, Stoke's method, Estimation of Minimal Inhibitory / Bactericidal concentrations by tube /plate dilution methods.
5. Performance and interpretation of bacteriological tests for water, air and milk.
6. Performance of anaerobic Culture.
7. Performance and reporting of Antimicrobial Susceptibility Testing. M.I.C., M.B.C.
8. Reporting and interpretation of Automated blood culture techniques and their interpretation.
9. Reporting and Identification of various microorganisms using API techniques on different samples.

Clinical Microbiology and Infectious Disease

1. Diagnostic techniques for various infectious diseases.
2. Respiratory sample collection, processing, and reporting.
3. Genitourinary sample collection, processing, and reporting.
4. Gastrointestinal sample collection, processing, and reporting.
5. Cerebrospinal fluid sample collection, processing, and reporting.
6. Multiple fluid sample collection, processing, and reporting.
7. Visit in Multiple wards and ICU of hospital.
8. Follow up of various infectious disease reports.
9. Infection control protocol applications in hospital.

Virology

1. Preparation of clinical specimens for isolation of viruses.
2. Preparation of monkey kidney cells (Primary) and maintenance of continuous cell lines by subcultures. Preservation in -70°C and liquid nitrogen.
3. Preparation of monkey kidney cells (Primary) and maintenance of continuous cell lines by subcultures. Preservation in -70°C and liquid nitrogen.
4. Recognition of CPE producing viruses.
5. Performance of hemadsorption for Parainfluenza Hemagglutination for influenzas, Immunofluorescence, neutralization for Enteroviruses and Respiratory viruses' identification tests on tissue cultures and supernatants etc.
6. Performance of Serological tests – Elisa for HIV, HBsAg, Hemagglutination inhibition and Hemadsorption for influenza virus of CPE producing viruses.

Mycology

1. Collection of Specimen for Mycology and their direct Examination of Specimen with their examination of Histopathology slides.
2. Isolation and identification of fungi & slide culture
3. AST for fungal species.
4. Special techniques used in mycology.
5. Maintenance of fungal stock cultures.
6. Mycobacteriology (Tuberculosis) sampling, processing and identification of Mycobacteria and their antibiotic resistance testing using various culture methods and molecular techniques like LJ medium, MGIT, and Gene expert.
7. Anaerobic culture methods.

Serology and Immunology

1. Collection of blood for serological tests by venipuncture, separation of serum and preservation of serum for short and long periods.
2. Preparation and use of antigens and antisera in laboratory.
3. Performance of serological tests like Brucella agglutination, Weil Felix, cold agglutination, VDRL, Paul Bunnel, Rose Waaler, IFA, ELISA.
4. Latex and staphylococcal co-agglutination test separation of lymphocytes.
5. Immunoelectrophoretic techniques.
6. Performance and independent reporting of ELISA technique performance for Hepatitis viruses.
7. Performance of serological techniques for common pathogens independently.

Molecular Biology

1. Performance of PCR method.
2. Extraction of Nucleic acid from samples.
3. Interpretation of results of real time PCR.
4. Trouble shooting in PCR.

LECTURES/PRESENTATIONS

Sr. No.	Date	Topic	Attended/ conducted	Teacher	Teacher's Signature	Signature of supervisor

Signature of the Supervisor_____

PROBLEM BASED LEARNING (PBL)

Sr. No.	Date	Topic	Attended/ conducted	Teacher	Teacher's Signature	Signature of supervisor

Signature of the Supervisor_____

SMALL GROUP DISCUSSION (SGD)

Sr. No.	Date	Topic	Attended/ conducted	Teacher	Teacher's Signature	Signature of supervisor

Signature of the Supervisor_____

PRACTICAL LABORATORY BENCH WORK

Sr. No.	Date	Practical Topic	Attended/ conducted	Supervised by	Signature	Signature of supervisor

Signature of the Supervisor_____

SECTION-V

RESEARCH PROPOSAL SYNOPSIS

Proposed Topic: _____

_____

Proposed Place of Study_____

APPROVAL BY DRB

Date of presentation: _____ Date of Approval by DRB: _____

Approval status: Approved as such Approved with minor changes Approved with minor changes Rejected

APPROVAL BY ERB

Date of presentation: _____ Date of Approval by DRB: _____

Approval status: Approved as such Approved with minor changes Approved with minor changes Rejected

APPROVAL BY BASAR

Date of presentation: _____ Date of Approval by BASAR: _____

Approval status: Approved as such Approved with minor changes Approved with minor changes Rejected

Final Topic Approved: _____

_____

RESEARCH/THESIS:

Title: _____

Date of commencement: _____

Place of research work: _____

Duration: _____

Supervised by: _____

Data compilation date: _____

Thesis compilation date: _____

SECTION-VI

MISCELLANEOUS ACADEMIC ACTIVITIES:

JOURNAL CLUB MEETINGS

Sr. No.	Date	Topic	Attended/ conducted	Signature of supervisor

Signature of the Supervisor_____

RESEARCH PUBLICATIONS

Sr. No.	Date	Topic	Attended/ conducted	Signature of supervisor

Signature of the Supervisor_____

SEMINARS

Sr. No.	Date	Topic	Attended/ conducted	Signature of supervisor

Signature of the Supervisor_____

WORKSHOPS

Sr. No.	Date	Topic	Attended/ conducted	Signature of supervisor

Signature of the Supervisor_____

Clinico Pathological Conference

S. No.	**TOPIC**	DATE

Signature of the Supervisor_____

LIBRARY RESEARCH

S. No.	**RESEARCH TOPIC**	DATE

Signature of the Supervisor_____

BIOSTATISTICS

S. No.	**TOPIC**	DATE

Signature of the Supervisor_____

RESEARCH METHODOLOGY

S. No.	**TOPIC**	DATE

Signature of the Supervisor_____

MEDICAL WRITING & EDITING

S. No.	**TOPIC**	DATE

Signature of the Supervisor_____