

MICROBIOLOGY ELECTIVES 2023 BATCH
LIST OF ELECTIVES - DEPARTMENT OF MICROBIOLOGY (Block 1)
Number of students accommodated per elective- 2 at a time

SI No:	ELECTIVE TOPIC	PRECEPTOR
M1	Laboratory diagnosis and prevention of HIV infection	Dr. Anu P. John
M2	Laboratory diagnosis of Tuberculosis-conventional and newer methods; IGRA, LPA	Dr. Ann Mary Alex
M3	Molecular and serological diagnosis of viral hepatitis	Dr. Aiswarya Mukundan
M4	Laboratory diagnosis of fungal infections	Dr. Smina K. I
M5	Bacterial sepsis and Enteric fever	Dr. Remya P. V.
M6	Antibiotic sensitivity pattern of bacterial isolates from urinary tract infection	Dr. Anitha T. R.
M7	Hand hygiene audit in Intensive care units	Dr. Lekshmi Sankar K.

M1

Name of Block	Block I
Name of Elective	Lab diagnosis and prevention of HIV infection (M1)
Location of hospital lab/research facility	ICTC(integrated counselling and testing centre, SRL(State reference laboratory for HIV), VLTL(viral load testing laboratory)
Name of internal preceptor(s)	Dr Anu P John
Name of external preceptor(s) if applicable	NA
Learning objectives of electives	<ol style="list-style-type: none"> 1. To know about HIV virus ,Pathogenesis and diagnosis and management 2. To observe the Psycho- social and behavioural aspect of HIV infection 3. To have a basic knowledge on the modes of Transmission of HIV 4. To understand and learn about the appropriate preventive measures against HIV infection

Number of students that can be accommodated in this elective	2
Prerequisites for elective	<ol style="list-style-type: none"> 1. Training in standard precautions and biosafety 2. Knowledge about the HIV virus, pathogenesis and diagnosis 3. Hepatitis B vaccination 2 doses completed 4. Basic knowledge on the post exposure prophylaxis , prevention and treatment
Learning resources for students	<ol style="list-style-type: none"> 1. National guidelines on HIV testing byNACO 2. Mandell, Douglas and Bennett , s principles and practice of infectious diseases 3. Resource library – Centres for disease control and prevention
List of activities of student participation	<ol style="list-style-type: none"> 1. Training on standard work precautions and biosafety 2. Participate in collection and transport of specimens 3. Observe the pre-test and post-test counselling 4. Observe the procedure and methods followed in ICTC 5. Observe the protocols and steps of viral load testing and interpretation for the management 6. Collect details regarding needle stick injuries and post exposure prophylaxis 7. Record daily observations and activities 8. Conduct case presentations and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> 1. Record details of methods of specimen collection and transport 2. Record details of pre-test and post-testcounselling maintaining confidentiality 3. Record the various diagnostic methods in detection 4. Record of cases of needle stick injuries 5. Record cases of post exposure prophylaxis

	6. Record the details of follow up of positive cases
Log book entry required	<ol style="list-style-type: none"> 1. Details of Specimen collected 2. Details of diagnostic methods , follow up of patients and post exposure prophylaxis 3. Details of cases recorded maintaining confidentiality 4. Case presentations 5. Topic presentations 6. Reflections and feedback 7. Assessment
Assessment	<p>Formative</p> <ol style="list-style-type: none"> 1. specimen collection and transport- DOPS 2. Interpretation of HIV laboratory results – charts 3. Needle stick injury and post exposure prophylaxis - applied question 4. Confidentiality - assessed as AETCOM question 5. Review the records of daily activities
Other comments	

Name of block	Block 1
Name of elective M2	Laboratory diagnosis of Tuberculosis- conventional and newer methods; IGRA, LPA (M2)
Location of hospital lab/research facility	Central lab, Molecular Lab for TB diagnosis, RNTCP lab
Name of internal preceptor	Dr. Ann Mary Alex
Name of external preceptor if applicable	N/A
Learning objectives of elective	<ol style="list-style-type: none"> 1. To observe and understand the principle, procedure and functioning of TrueNat 2. To observe and understand the principle, procedure and functioning of CBNAAT 3. To observe and understand the principle, procedure and functioning of Interferon Gamma Release Assay (IGRA), understand about LPA 4. To understand the applications of each in different clinical settings 5. To observe the various procedures in RNTCP lab including Fluorescent microscopy for TB diagnosis
Number of students that can be accommodated in this elective	2
Prerequisites for elective	<p>Should have basic knowledge about standard precautions, biosafety</p> <p>Should have completed immunisation against Hepatitis B</p> <p>SDL – To read and understand the NTEP guidelines*</p>
Learning Resources for students	<p>NTEP manual</p> <p>Standard operating procedure manuals of TrueNAT, CBNAAT, IGRA</p>
List of activities of student participation	<ol style="list-style-type: none"> 1. Training in standard precautions followed in diagnostic microbiology laboratory 2. Training in collection and transport of different samples including sputum, other respiratory specimens, pus aspirates, CSF, urine for routine TB diagnosis 3. Participate in collection and transport of samples including writing a proper request form for TrueNAT, CBNAAT 4. Collect clinical details, investigation details management and follow up of atleast 2 positive cases each for TrueNAT, CBNAAT, IGRA

	5. Present these cases in the Microbiology laboratory and participate in the discussions
Portfolio entries required	<ol style="list-style-type: none"> 1. Record details of sample collection and transport of cases observed 2. Various steps involved in the procedures of TrueNAT, CBNAAT, IGRA 3. Methods of reporting
Log book entry required	<ol style="list-style-type: none"> 1. Details of specimen collection and transport 2. Procedures observed 3. Case presentations 4. Reflections and feedback 5. Assessment
Assessment	<p>Formative</p> <ol style="list-style-type: none"> 1. DOAP – specimen collection, transport, proper filling of a request form for microbiology diagnostic lab 2. Case presentations (atleast 1 each of TrueNAT, CBNAAT) 3. Review of records of daily activities 4. Objective test
Other comments	

Elective in Department of Microbiology- Block I (M3)

Name of Block	Block I
Name of Elective	Molecular and serological diagnosis of viral hepatitis (M 3)
Location of hospital lab/research facility	VRDL(Virus Research and Diagnostic laboratory), Serology lab (Central lab), Dept of Microbiology
Name of internal preceptor(s)	Dr. Aiswarya Mukundan
Name of external preceptor(s) if applicable	Nil
Learning objectives of electives	<ol style="list-style-type: none"> 1. To obtain experience in serological techniques (ELISA and immuchromatograhic tests) for diagnosis of Hepatitis A, B, C and E

	<ol style="list-style-type: none"> To understand the principles and observe the molecular diagnostic methods for viral hepatitis (PCR techniques for viral load testing of Hepatitis B and C)
Number of students that can be accommodated in this elective	2
Prerequisites for elective	<ol style="list-style-type: none"> Knowledge on standard precautions and biosafety Hepatitis B vaccination 2 doses completed Basic knowledge about the serological markers and laboratory diagnosis of Hepatitis B
Learning resources for students	<ol style="list-style-type: none"> National Viral Hepatitis Control Programme- operational guidelines, Textbook of Microbiology- Ananthanarayan and Panicker
List of activities of student participation	<ol style="list-style-type: none"> Training on standard work precautions and biosafety Training in serological techniques for Viral hepatitis (ELISA and Rapid tests for Hepatitis A,B,C and E) Observe the various steps involved in PCR (Viral load testing of Hepatitis B and C) and reporting of results Collect clinical details, investigation reports and management of 2 cases each of Hepatitis B and C Record daily observations and activities Conduct case presentations and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> Record details of various steps involved in ELISA Record details of various steps involved in molecular diagnostic methods Record Clinical case history , diagnostic work up and management of 2 cases each of Hepatitis B and C
Log book entry required	<ol style="list-style-type: none"> Laboratory procedures observed Details of cases recorded Topic presentations Reflections and feedback

	5. Assessment
Assessment	Formative <ol style="list-style-type: none">1. Presentation on molecular diagnostics2. Presentation of clinical cases in department3. Review the records of daily activities4. Objective test
Other comments	

Name of Block	Block I
Name of Elective (M4)	Diagnostic methods in mycology (M4)
Location of hospital lab/research facility	Central lab and Dept. of Microbiology
Name of internal preceptor(s)	Dr Smina K.I.
Name of external preceptor(s) if applicable	NA
Learning objectives of electives	<ol style="list-style-type: none"> 1. To understand the diagnostic methods and techniques in mycology 2. To obtain knowledge in various fungal infections 3. To participate in collection and transport of various specimen for fungal infections
Number of students that can be accommodated in this elective	2
Prerequisites for elective	<ol style="list-style-type: none"> 1. Training in standard precautions and biosafety 2. Hepatitis B vaccination 2 doses 3. Basic knowledge about different fungal infections of public health importance.
Learning resources for students	<ol style="list-style-type: none"> 1. Larone, Apurba shasthry 2. Jagadish Chandra.

List of activities of student participation	<ol style="list-style-type: none"> 1. Training on standard work precautions and biosafety 2. Participate in collection and transport of specimens like skin scrapings,nail, hair etc for diagnosis of fungal infections,under supervision (minimum 2 cases per week) 3. Observe the different steps involved in the processing and culture of specimen 4. Collect clinical details, investigation details and management of cases of -fungal infections candidiasis, dermatophytes etc 5. Record daily observations and activities 6. Conduct case presentations and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> 1. Record details of methods of specimen collection and transport of 4 cases assisted 2. Record details of various steps involved in fungal culture and identification 3. Record Clinical case history , diagnostic work up and management of 4 different clinical cases of fungal infections
Log book entry required	<ol style="list-style-type: none"> 1. Details of Specimen collected 2. Laboratory procedures observed 3. Details of cases recorded 4. Case presentations 5. Topic presentations 6. Reflections and feedback 7. Assessment
Assessment	<p>Formative</p> <ol style="list-style-type: none"> 1. DOPS- specimen collection and transport 2. Presentation on mycology 3. Presentation of clinical cases (at least 2) in department 4. Review the records of daily activities 5. Objective test

Other comments	
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Elective in Department of Microbiology- Block I (M5)

Name of Block	Block I
Name of Elective	Bacterial sepsis and Enteric fever (M 5)
Location of hospital lab/research facility	Central Lab- Microbiology
Name of internal preceptor(s)	Dr Remya P V
Name of external preceptor(s) if applicable	NA
Learning objectives of electives	<ol style="list-style-type: none"> 1. To understand the aetiological agents and causes of bacterial sepsis and enteric fever 2. To obtain knowledge in sample collection, culture of isolate causing sepsis. 3. To obtain knowledge on antibiotic sensitivity pattern by Kirby bauer disk diffusion test and its interpretation 4. To know about various sepsis markers. 5. To obtain knowledge on the serological diagnosis of Enteric fever 6. To know about the various vaccines available for Enteric fever
Number of students that can be accommodated in this elective	4
Prerequisites for elective	<ol style="list-style-type: none"> 1. Training in standard precautions and knowledge on lab etiquette. 2. Hepatitis B vaccination 2 doses completed
Learning resources for students	<ol style="list-style-type: none"> 1. Related journals from indexed journals. 2. Hospital infection control manual

	<ol style="list-style-type: none"> Mandell, Douglas and Bennett's principles and practice of infectious diseases
List of activities of student participation	<ol style="list-style-type: none"> Training on standard work precautions. Participate in collection and transport of specimens. Observe the sample processing, culture of isolates and antibiotic sensitivity pattern, participate in reporting. Take detailed clinical history, laboratory investigation details and antibiotic escalation and de-escalation in response to treatment of at least 3 different cases . Record daily observations and activities Conduct case presentations and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> Record details of methods of specimen collection and transport of 3 cases assisted Record Clinical case history, diagnostic work up and management of 2 different clinical cases of sepsis – Eg urosepsis, Catheter Related Blood stream Infection (CRBSI), Hospital acquired (following SSI, VAP , CRBSI), meningitis and other causes and 1 case of enteric fever. Microbiological profile of isolates causing bacterial sepsis and antibiogram from ICU in a fixed time period.
Log book entry required	<ol style="list-style-type: none"> Details of Specimen collected Laboratory procedures observed Details of cases recorded Case presentations Topic presentations Reflections and feedback Assessment
Assessment	<p>Formative</p> <ol style="list-style-type: none"> DOPS- specimen collection and transport.

	<ol style="list-style-type: none"> 2. Presentation of clinical cases (at least 2) in department 3. Review the records of daily activities
Other comments	

Elective learning experience in Block I (M6)

Name of Block	Block 1
Name of Elective	Antibiotic sensitivity pattern of bacterial isolates from urinary tract infection (M6)
Location of hospital lab/research facility	Microbiology lab in central lab, NMCH Thrissur
Name of internal preceptor(s)	Dr Anitha T R
Name of external preceptor(s) if applicable	N/A
Learning objectives of electives	<ol style="list-style-type: none"> 1. To enumerate different agents causing urinary tract infection 2. To demonstrate the method of culture and identification bacterial pathogens from urine 3. To identify the various methods of antibiotic sensitivity testing (invitro) of bacterial isolates 4. To demonstrate the Kirby-Bauer disc diffusion method of antibiotic sensitivity testing for bacterial isolate from urine. 5. To demonstrate how to interpret the results of Disc diffusion testing 6. To evaluate this results for selecting an antibiotic at clinical side.
Number of students that can be accommodated in this elective	2
Prerequisites for elective	Training on standard precautions, biosafety and immunisation
Learning resources for students	<ol style="list-style-type: none"> 1. Hand book of clinical microbiology

	2. Sop for different methods of Antibiotic sensitivity testing from CLSI
List of activities of student participation	<ol style="list-style-type: none"> 1. Report to Microbiology Lab In Central lab and observe, assist and perform the plating of urine sample for obtaining the bacterial growth. 2. Observe the antibiotic sensitivity testing for the same isolate as done in Microbiology lab 3. Report the results for the antibiotic sensitivity testing done. 4. Interpret the test results under guidance. 5. Collect clinical details and management of minimum 3 cases of urinary tract infections 6. Conduct case presentations and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> 1. Details of procedure and testing of Isolates processed in the lab 2. CLSI criteria for interpretation 3. Clinical details and management of cases
Log book entry required	<ol style="list-style-type: none"> 1. Procedures-culture & antibiotic sensitivity testing conducted in lab 2. Details of patient work up and management 3. Completion of the work signed by the Internal preceptor with meets expectation (M) grade
Assessment	<p style="text-align: center;">Formative</p> <ol style="list-style-type: none"> 1. Attendance 2. day to day participation in activities . 3. Performance of assigned tasks and presentation of finished task in department 4. Documentation in Logbook 5. Objective test
Other comments	

Elective in Department of Microbiology- Block I (M7)

Name of Block	Block I
Name of Elective	Hand Hygiene audit in Intensive care units (M7)
Location of hospital lab/research facility	Medical ICU

Name of internal preceptor(s)	Dr Lekshmi Sankar K
Name of external preceptor(s) if applicable	NA
Learning objectives of electives	<ol style="list-style-type: none"> 1. To understand the principle and obtain experience executing hand hygiene audit in ICUs 2. To obtain knowledge about hand hygiene. 3. To participate in hand hygiene audit conducted as a part of HIC surveillance
Number of students that can be accommodated in this elective	2
Prerequisites for elective	<ol style="list-style-type: none"> 1. Training on standard work precautions 2. Know the steps of hand hygiene. 3. Know the moments of hand hygiene. 4. Hand hygiene audit form.
Learning resources for students	<ol style="list-style-type: none"> 1. WHO manual for Hand hygiene practices. 2. Hospital infection control manual.
List of activities of student participation	<ol style="list-style-type: none"> 1. Training on standard work precautions. 2. Participate in observation of hand hygiene practices going on in medical ICU (minimum 20 hand hygiene moments per week) 3. Participate in documentation of hand hygiene practices going on in medical ICU (minimum 20 hand hygiene moments per week) 4. Participate in analysis of hand hygiene practices going on in medical ICU 5. Record daily observations and activities 6. Conduct hand hygiene training and participate in academic discussions
Portfolio entries required	<ol style="list-style-type: none"> 1. Record details of steps of hand hygiene 2. Record details of moments of hand hygiene

	<ol style="list-style-type: none"> 3. Record hand hygiene audit and analysis done in medical ICU over 4 weeks
Log book entry required	<ol style="list-style-type: none"> 1. Details of moments observed 2. Hand hygiene audit 3. Topic presentations 4. Reflections and feedback 5. Assessment
Assessment	<p>Formative</p> <ol style="list-style-type: none"> 1. DOPS- hand hygiene moments documentation 2. Presentation on hand hygiene 3. Presentation of hand hygiene audit 4. Review the records of daily activities 5. Objective test
Other comments	

