MICROBIOLOGY					
competency	**DOMAINS K/S/A/C**	**levels K/KH/SH/P**	**Specific Learning Objective (K/S/a- c)**	**T-L method**	**Assessment**
MI1.1	K	KH	1. At the end of session phase 2nd MBBS student must be be able to classify various infectious agents 2. Must be able to enumerate diseases causes by various infectious agents 3. Must be able to describe morphology of bacteria 4. Must be able to describe the morphology of viruses 5. must be able to describe morphology of fungus 6. Must be able to describe the morphology of parasite 7.must be able to describe the disease caused by bacteria 8. must be able to describe the disease caused by viruses. 9.must be able to describe the disease caused by fungus. 10. must be able to describe the methods of detectionof bacteria 11.must be able to describe the methods of detectionof viruses. 12.must be able to describe the methods of detectionof fungus 13.must be able to describe the methods of detectionof parasite 14. must be able to discuss the role of bacteria in health and disease. 15.must be able to discuss the role of viruses in health and disease. 16 must be able to discuss the role of fungus in health and disease. 17.must be able to discuss the role of parasite in health and disease.	lecture, small group discussion	written/viva voce
MI 1.2	S	P	1. At the end of session the phase 2nd MBBS student Must be able to perform Gram stain 2. Must be able to perform ZN stain 3. Must be able to perform Stool routine microscopy 4. must be able to Identify the different causative agents of infectious diseaes by Gram stain 5.Identify the different causative agents of infectious diseaes by ZN stain 6. must be able to Identify the different causative agents of infectious diseaes by Stool routine microscopy	Demonstration	Practical exam/viva voice
MI1.3	K	KH	At the end of session the phase 2nd MBBS student Must be able to Describe the epidemiological basis of comman infectious diseases.	lecture, small group discussion	written/viva voce
MI1.4	K	KH	1. At the end of session the phase 2nd MBBS student Must be able to Define Sterilization and disinfection 2. Must be able to differentiate Sterilization and disinfection 3. Must be able to classify different methods of Sterilization 4.Must be able to classify different methods of disinfection 5. Must be able to Describe Principle, Working and Use of Autoclave. 6.Must be able to Describe Principle, Working and Use of Hot air oven. 7.Must be able to Describe Principle, Working and Use of Pasteurization.	lecture, small group discussion	written/viva voce

			8. Must be able to Describe Principle, Working and Use of Inspissation. 9.Must be able to Describe Principle, Working and Use of Tyndalization. 10. Must be able to Discuss application of different methods in the laboratory in clinical and surgical practice 11.Must be able to Discuss newer methods of sterilization. 12. Must be able to Discuss nrewer methods used for testing of Disinfectants.		
MI1.5	K	KH	1At the end of session the phase 2nd MBBS student .Must be able to enumerate various appropiate disinfectants and methods used for Sterilization specific situations in the lab appropaility 2.Must be able to enumerate disinfectants used in the clinical practice appropiately. 3.Must be able to enumerate appropiate sterlization used in the surgical practice	lecture, small group discussion	written/viva voce
MI1.6	K	K	1. At the end of session the phase 2nd MBBS student must be able to describe the mechanism of drug resistance. 2. Must be able to eneumerate methods of antimicribial susceptibility testing. 3. Must be able to describe monitering of antimicrobial therapy.	lecture, small group discussion	written/viva voce
MI1.7	K	KH	1. At the end of session the phase 2nd MBBS student must be able to Describe the immunological mechanism in health.	lecture, small group discussion	written/viva voce
MI1.8	K	KH	1. At the end of session the phase 2nd MBBS student must be able to describe the mechanism of immunity. 2. Must be able to describe the respose of the host immune . system to infections	lecture, small group discussion	written/viva voce
MI1.9	K	KH	1. At the end of session the phase 2nd MBBS student must be able to describe classify vaccines. 2. Must be able to describe the immunological basis of vaccines. 3. Must be able to describe the universal immunisation schedule.	lecture, small group discussion	written/viva voce
MI1.10	K	KH	1. At the end of session the phase 2nd MBBS student must be able to define hypersenstivity. 2. Must be able to classify hypersenstivity 3. Must be able to describe mechanism of hypersenstivity 4. Must be able to discuss lab methods used in detection of hypersenstivity 5. Must be able to define autoimmunity 6. Must be able to Classify autoimmunity 7. Must be able to describe mechanism of autoimmunity 8. Must be able to discuss lab methods used in detection of autoimmunity 9. Must be able to define Immunodeficiency states. 10. Must be able to classify Immunodeficiency diseases 11. Must be able to describe mechanism of Immunodeficiency diseases 12. Must be able to discuss lab methods used in detection of immunodefeciency states	lecture, small group discussion	written/viva voce

MI1.11	K	KH	1. At the end of session the phase 2nd MBBS student must be able to Define transplant. 2.Must be able to Classify types of transplant 3. Must be able to Describe the immunological mechanism of transplant 4.Must be able to Describe the immunological mechanism of Tumor immunity.	lecture, small group discussion	written/viva voce
MI2.1	K	KH	1. At the end of the session phase II MBBS student must be able to define rheumatic fever . 2. Must be able to describe etiological agents of rhuematic fever. 3. must be able to describe diagnosis of rhuematic fevaer	lecture, small group discussion	written/viva voce
MI2.2	K	KH	1. At the end of session the phase 2nd MBBS student must be able to eneumerate etiological agents of rheumatic fever 2. Must be able to Describe symptoms of rheumatic fever 3. Must be able to Discuss the clinical feactures of rheumatic fever 4.Must be able to describe etio pathogenesis of rhuematic fever. 5. Must be able to Discuss the diagnosis modalities ofRheumatic fever 6. must be able to discuss presentstion of rheumatic fever 7.. must be able to discuss treatment of Rheumatic fever	lecture, small group discussion	written/viva voce
MI2.3	S	SH	1.At the end of session the phase 2nd MBBS student must be able to diffine infective endocarditis. 2.must be able to classify infective endocarditis 3..must be able to describe eitiopathogenesis of infective endocarditis 4..must be able to describe clinical features of infective endocarditis 5.must be able to discuss diagnostic modalities of infective endocarditis 6.must be able to discuss treatment of infective endocarditis 7.must be able to discuss presentation of infective endocarditis 8. must be able to identify the micribial agents causing rheumatic heart disease	demonstration	skill assesment
MI2.4	K	KH	1.At the end of session the phase 2nd MBBS student must be able to the microbial agents causing Rheumatic Heart Disease using gram's stain Must be able to define anemia 2.must be able to list the common microbial agents causing anemia 3.must be able to describe the morphology of microbial agent causing anemia 4.must be able to describe the mode of infection of microbial agent causingn anemia 5.must be able to describe the pathogenesis of microbial agent causing anemia 6.must be able to describe the clinical course of microbial agent causing anemia 7.must be able to discuss the diagnosis of microbial agent causing anemia 8.must be able to discuss the prevention of microbial agent causing anemia 9.must be able to discuss the tretment of microbial agent causing anemia	lecture, small group discussion	written/viva voce
			1.At the end of session the phase 2nd MBBS student enumerate common blood parasites prevalent in india		

MI2.5	K	KH	2.must be able to describe the kala azar 3.must be able to discuss the etiopathogenesis of kala azar 4.must be able to discuss the clinical evaluation of kala azar 5.must be able to discuss Laboratory diagnosis of kala azar 6.must be able to discuss treatment of kala azar 7.must be able to define malaria 8.must be able to classify malaria 9.must be able to discuss the etiopathogenesis of malaria 10.must be able to discuss the clinical evaluation of malaria 11.must be able to discuss the laboratory diagnosis of malaria 12.must be able to discuss the treatment of malaria 13.must be able to difine microfilaria 14.must be able to classify microfilaria 15.must be able to etiopathogenesis of microfilaria 16.must be able to discuss lab diagnosis of microfilaria 17.must be able to discuss treatment of microfilaria	lecture, small group discussion	written/viva voce
MI2.6	K/S	SH	1. At the end of session the phase 2nd MBBS student must be able to identify the causautive agent of malaria using blood film must be able to identify causautive agent of microfilaria using blood film	Demonstration	skill assesment
MI2.7	K	KH	1 At the end of session the phase 2nd MBBS student must be able to describe the morphology of HIV 2.must be able to describe epidemology of HIV 3.must be able to describe etiopathogenesis of HIV including mode of transmission 4.must be able to describe evolution of HIV 5.must be able to enumerate the complication of HIV 6.must be able to describe the complication of HIV 7.must be able to enumerate opportunistic infections of HIV 8.must be able to describe opportunistic infections of HIV 9.must be able to describe the diagnosis of HIV 10.must be able to describe the prevention of HIV 11.must be able to describe principal and management of HIV	lecture,small group discussion	written/viva voce
MI 3.1	K	KH	1. At the end of session the phase 2nd MBBS student must be able to Define diarrhoea 2.must be able to define dysentery 3.must be able to enumerate agents causing diarrhoea 4.must be able to enumerate agents causing dysentery 5.must be able to differentiate between diarrhoea and dysentery 6.must be able to discuss epidemiology of agents of diarrhoea 7.must be able to discuss epidemiology of agents of dysentery 8.must be able to describe the morphology of agents of diarrhoea 9.must be able to describe the pathogenesies of agents of diarrhoea 10.must be able to describe the clinical features ofagents of diarrhoea	e,small group disc	written/viva voce

			11.must be able to describe the diagnostic modalities agents of diarrhoea 12.must be able to describe the morphology of agents of dysentery 13.must be able to describe the pathogenesies of agents of dysentery 14.must be able to describe the clinical features of agents of dysentery 15.must be able to describe the diagnostic modalities agents of dysentery 16.must be able to differentiate between amoebic and bacillary dysentery		
MI3.2	S	SH	1.At the end of session the phase 2nd MBBS student must be able to identify common etiological agent of diarrhoea by various tests available must be able to identify common etiological agent of dysentery by various tests available	Demonstration	skill assesment
MI3.3	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define enteric fever 2.must be able to describe etiopathogenesis of enteric fever 3.must be able to describe the clinical course of enteric fever 4.must be able to describe the morphology of agents causing enteric fever 5.must be able to discuss the lab diagnosis of enteric fever 6.must be able to discuss the treatment of enteric fever 7.must be able to discuss prophylaxis of enteric fever	lecture,small group discussion	written/viva voce
MI3.4	S	KH	1.At the end of session the phase 2nd MBBS student must be able to identify different modalities of diagnosis of emteric fever must be able to choose appropriate tests releated to duration of illness	Demonstration	skill assesment
MI3.5	K	KH	1.At the end of session the phase 2nd MBBS student must be able to enumerate the agents of food poisioning 2.must be able to discuss the pathogenesies of agents of food poisioning must be able to discss the clinical course of agents of food poisioning 3.must be able to discuss the lab diagnosis of agents of food poisioning	lecture,small group discussion	written/viva voce
MI3.6	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define acid peptic disease 2.must be able to describe the etiopathogenesies of peptic disease 3.must be able to describe the clinical course of acid peptic disease 4.must be able to discuss the diagnosis of agents of acid peptic disease 5.must be able to discuss the management causative agent of acid peptic disease	lecture,small group discussion	written/viva voce
MI3.7	K	KH	1.At the end of session the phase 2nd MBBS student must be able to enumerate agents of viral hepatitis 2.must be able to describe epidemmiology of viral hepatitis 3.must be able to describe the etiopathogenesies of viral hepatitis 4.must be able to discuss the viral markers of viral hepatitis 5.must be able to diagnosis of viral hepatitis 6.must be able to discuss the prevention of viral hepatitis 7.must be able to choose appropriate laboratory tests in the diagnosis of viral hepatitis with emphasis on viral marker	lecture,small group discussion	written/viva voce
			1.At the end of session the phase 2nd MBBS student must be able to.	lecture,small	

Mi3.8	K	KH	describe the laboratory test in the diagnosis of viral hepatatis with emphasis on viral markers	lecture,small group discussion	written/viva voce
MI4.1	K	KH	1.At the end of session the phase 2nd MBBS student must be able to enumerate the microbiological agent causing anaerobic infection. must be able to describe the etiopathogeneis of anaerobic infection 2.must be able to describe the clinical course of anaerobic infection 3.must be able to discuss the lab diagnosis of anaerobic infection	lecture,small group discussion	written/viva voce
MI4.2	K	KH	1.At the end of session the phase 2nd MBBS student must be able to describe the etiopathogeneis of bone and joint infection 2.must be able to describe the clinical course of bone and joint infection 3.must be able to discuss the lab diagnosis of bone and joint infection	lecture,small group discussion	written/viva voce
MI4.3	K	KH	1.At the end of session the phase 2nd MBBS student must be able to must be able to discuus the clinical course of skin and soft tissue infection 2.must be able to discuss the laboratory diagnosis of skin and soft tissue 3.must be able to discuss the etiopathogenesis of skin and soft tissue infection	lecture,small group discussion	written/viva voce
MI5.1	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define meningitis 2.must be able to classfy meningitis 3.must be able to enumerate agents of meningitis 4.must be able to differentiate between various types of meningitis 5.must be able to describe etiopathogenesis of meningitis 6.must be able to describe clinical course of meningitis 7.must be able to discuss lab diagnosis o meningitis	lecture,small group discussion	written/viva voce
MI5.2	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define encephalities 2.must be able to enumerate the agents of encephalities 3.must be able to describe the etiopathogenesis of encephalities 4.must be able to describe the clinical course of encephalities 5.must be able to describe the lab diagnosis of encephalities	lecture,small group discussion	written/viva voce
MI5.3	S	SH	1.At the end of session the phase 2nd MBBS student must be able to identify the microbiological agents causing meningitis	Demonstration	skill assesment
MI6.1	K	KH	1.At the end of session the phase 2nd MBBS student must be able to enumerate the upper and lower tract respiratory infections 2.must be able to describe the etiopathogenesis of upper and lower respiratory tact infections 3.must be able to describe the lab diagnosis of upper and lower respiratory tact infection 4.must be able to describe the prevention of upper and lower respiratory tact infection	lecture,small group discussion	written/viva voce
MI6.2	S	P	1.At the end of session the phase 2nd MBBS student must be able to identify the common etiological agents of upper respiratory tract	Demonstration	skill assesment

			infections using gram's stain correctly.		
MI6.3	S	P	1.At the end of session the phase 2nd MBBS student must be able to identify the common etiological agents of upper respiratory tract infections using acid fast stain must able to identify the common etiological agents of lower respiratory tract infections using acid fast stain	Demonstration	skill assesment
MI7.1	K	KH	1.At the end of session the phase 2nd MBBS student must be able to enumerate causing genetial urinary tract infections must be able to describe the etiopathogenes agents of genital urinary system 2.must be able to discuss the lab diagnosis of agents causing geneitourinary infections.	lecture,small group discussion	written/viva voce
MI7.2	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define sexually transmitted infection 2.must be able to classify sexually transmitted infection 3.must be able to enumerate agents of sexually transmitted infection 4.must be able to describe the etiopathogenes of sexually transmitted infection 5.must be able to discuss laboratory diagnosis of sexually transmitted infection 6.must be able to discuss the prevention of sexually transmitted infection	lecture,small group discussion	written/viva voce
MI7.3	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define genital urinary tract infection must be able to enumerate agents of genital urinary tract infections 2. must be able to enumerate agents of UTI 3. must be able to describe the etiopathogenesis of UTI 4. must be able to discuss clinial features of UTI 5. must be able to describe methods of specimen collection appropioralety 6. must be able to describe laboratory diagnosis of UTI	lecture,small group discussion	written/viva voce
MI8.1	K	KH	1. At the end of session the phase 2nd MBBS student must be able to enumerate micribial agents for zoonotic disease. 2. must be able to enumerate their vectors causing zoonotic diseases 3. must be able to describe morphology microbial agents causing zoonotic disease 4. must be able to decribe mode of transmission of zoonotic diseases 5. must be able to pathogenesis of zoonotic diseases 6. must be able to classify zoonoses on the basis of aetiology agents. 7. must be able to discuss the clinical course of zoonotic diseases 8. must be able to describe laboratory diagnosis of zoonoses. 9. must be able to describe the prevension of zoonotic diseases	lecture,small group discussion	written/viva voce
			1.At the end of session the phase 2nd MBBS student must be able to describe the etio pathogenesis of oppertunistic infections and discuss the factors contributing of OT an the laborratory diagnosis. 2. must be able to discuss the factorss contributing to the occurance of OT.		

MI8.2	K	KH	3.must be able to enumerate various bacteria as the aetiological agents of opportunistic infection. 4. must be able to enumerate various fungus as the aetiological agents of opportunistic infection. 5. must be able to enumerate the various parasites as the aetiological agents of opportunistic infection. 6.must be able to enumerate the various viruses as the aetiological agents of opportunistic infection. 7.must be able to describe the laboratory diagnosis of opportunistic infectiom	lecture,small group discussion	written/viva voce
MI8.3	K	KH	1. At the end of session the phase 2nd MBBS student must be able to describe the role of oncogenic viruses in the evolutionof viruses associated malignancy. 2. must be able to define oncogenenesis 3. must be able to enumerate the viruses for causing oncigenesis	lecture,small group discussion	written
MI8.4	K	KH	1. At the end of session the phase 2nd MBBS student must be able to describe the etiologic agents of emerging infectious diseases. 2. must be able to enumerate the etiologic agents emerging infectious diseases. 3. must be able to desribe the etiologic agents of emerging infectious diseases. 4. must be able to discuss the clinical course of emerging infectious diseases. 5. must be able to discuss the laboratory diagnosis emerging infectious diseases.	lecture,small group discussion	written/viva voce
MI8.5	K	KH	1.At the end of session the phase 2nd MBBS student must be able to define health care associated infection HAI and enumerate the type of hospital acquried infection. 2. must br able to discuss that contribute to the development of HAI nd the methods for prevention 2. must be able to define th HAI 3. must be able to describe the factors that predispose to development of HAI 4. must be able to describe the souce of HAI. 5. must be able to enumerate the common types of HAI. 6. must be able to describe the methods of prevention for HAI.	lecture,small group discussion	written/viva voce
MI8.6	K	KH	1. At the end of session the phase 2nd MBBS student must be able to describe the basics of infection control.	lecture,small group discussion	written/viva voce
MI8.7	S	P	1. At the end of session the phase 2nd MBBS student must be able to demonstrate the infection control practices. 2. must be able to describe the use of personal protective equipments PPE	Demonstration	skill assesment
			1. At the end of session the phase 2nd MBBS student must be able to enumerate agents causing contamination of food. 2. must be able to describe methods used for assessing the mirobial		

MI8.8	K	KH	contamination of food. 3. must be able to describe significance of assessing the mirobial contamination of food. 4. must be able to enumerate agents causing contamination of water. 6. must be able to describe methods used for assessing the mirobial contamination of water. 7. must be able to enumerate agents causing contamination of water. 8. must be able to describe methods of causing contamination of water. 9. must be able to describe significance causing contamination of water. 10.must be able to enumerate agents causing contamination of air. 11.must be able to describe methods of causing contamination of air. 12.must be able to describe significance causing contamination of air.	lecture,small group discussion	written/viva voce
MI8.9	K	KH	1.At the end of session the phase 2nd MBBS student must be able to discuss the appropiate methods of collection of samples in the performance of laboratory test in the detection of microbial agents causing infectious diseases. 2. must be able to describe the appropiate methods of collection of samples in the performance of laboratory test in the detection of microbial agents causing infectious diseases.	lecture,small group discussion	written/viva voce
MI8.10	S	SH	1..At the end of session the phase 2nd MBBS student must be able to demonstrate the appropiate methods of collection of samples in performance of laboratory test in detection of microbial agents causing infectious diseases.	emonstration	skill assesment
MI8.11	A	SH	1. At the end of session the phase 2nd MBBS student . must be able to demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in detection of microbial agents causing infectious diseases.	lecture,small group discussion	skill assesment
MI8.12	A	KH	1. At the end of session the phase 2nd MBBS student must be able to discuss confidentiality pertaining to patient identity in laboratory results.	lecture,small group discussion	viva voce
MI8.13	K	KH	1. .At the end of session the phase 2nd MBBS student must be able to choose the appropiate laboratory test in the diagnosis of the infectious disease.	lecture,small group discussion	written/viva voce/OSPE
MI8.14	A	SH	1. .At the end of session the phase 2nd MBBS student must be able to demonstrate confidentiality pertaining to patient identify in laboratory results.	lecture,small group discussion	skill assesment
MI8.15	K/S	SH	1. At the end of session the phase 2nd MBBS student . must be able to choose the laboratory tests used in the diagnosis of infectious disease. 2. . must be able to interpret the results of laboratory tests used in the diagnosis of infectious disease.	lecture,small group discussion	written/viva voce

MI8.16	K	K	1. At the end of session the phase 2nd MBBS student must be able to describe the national health programs in the prevention of comman infectious disease.	lecture,small group discussion	written/viva voce