



King Saud University
College of Medicine
Department of Pathology

COURSE MANUAL

MAC 221 (Medical Microbiology)

1429 H / 2008 G

COURSE MANUAL MAC 221 (Medical Microbiology)

Basic Information:

Course title: Medical Microbiology
Department : Pathology
Symbol: MAC 221
Intended Students: Second Year
Credit Hours: 6 hours

1: Course Description:

This course provides the medical student with the basic knowledge and practical skills in medical microbiology. This includes an introduction to the basic biology of micro-organisms of medical importance. Interaction of these micro-organisms with humans is studied as related to the pathogenesis and management and control of infectious diseases. We hope that you will find this attachment useful and enjoyable. To achieve the maximum benefit of this course; hard work and appropriate methods of learning are the keys for that target.

2: Objectives

2.1 BACTERIOLOGY:

By the end of this course the students should able to:

- 1) Give an account of the different types and diversity of infective agents
 - Bacterial host-parasite relationship
 - Difference between primary and opportunistic bacterial pathogens.
 - Pathogenesis of bacterial diseases, virulence factors of different bacteria and was by which the host defends itself against invading bacteria.
 - Role of normal flora in health and disease (2 hrs).

- 2) Describe the morphology of the bacterial cell and different bacterial structures and their medical importance. Bacterial physiology and genetics methods of gene transfer and the medical importance of gene transfer in pathogenesis and antimicrobial resistance (3 hrs)
- 3) Describe the mechanism of action of antimicrobial agents. Mechanism of bacterial resistance to antimicrobial agents. Introduction to clinical use of antimicrobial agents (2 hrs).
- 4) Define the terms sterilization, disinfection, decontamination, antiseptics and cleaning.
 - Describe different methods of sterilization
 - Describe the different types of disinfectants and their mode of action and factors affecting their activities and where to use different types of disinfectants (1 hr)
- 5) Name the types of gram positive cocci, describe how to differentiate between Streptococci, Staphylococci and Micrococci. Define of coagulase positive and coagulase negative staphylococci and the clinical features, epidemiology and management of diseases caused by each of them.
 - Different types of *Streptococci*, β -haemolytic streptococci, α -haemolytic (viridans) streptococci, *Streptococcus pneumoniae* and enterococci. The clinical features, complications epidemiology and managements of diseases caused by Streptococci.
- 6) Name the different mycobacteria. Define *Mycobacterium tuberculosis* complex, non tuberculosis mycobacteria (NTM). Pathogenesis of tuberculosis, clinical features, epidemiology and management of tuberculosis. Tuberculosis as a world health problem. Disease caused by NTM. Association of mycobacterial infections and HIV infection. Anti-tuberculosis agent(2 hrs).

- 7) Name non-spore forming gram positive bacilli and describe infections caused by these organisms, including. Listeriosis, Diphtheria laboratory diagnosis and management including vaccination (1 hr).
- 8) Name the different types of small gram negative cocobacilli including the genera Haemophilus, Bordetella, Brucella, Acinetobacillus, Francisella.
 - Describe the clinical features epidemiology, management and vaccination for diseases caused by these genera. Epidemiology of brucellosis in Saudi Arabia (2 hrs).
- 9) Name the different bacterial genera included in the family enterobacteriaceae. Name the pathogenic and non-pathogenic genera. Laboratory identification including biochemical tests and serology.
 - Describe the diseases caused by the usually pathogenic genera of enterobacter including Salmonellosis, Food poisoning, typhoid, paratyphoid fever and Shigellosis. The clinical feature epidemiology and management of these diseases, different agents of bacterial food poisoning (3 hrs)
- 11) Name the non fermentative gram –ve bacteria, and describe their laboratory identification, clinical importance, and antimicrobial therapy. Define of the term Multi-drug resistance organism.
- 12) Name gram negative curved, oxidase positive organisms including V.cholerae, Campylobacter and Helicobacter, describe their Medical importance, laboratory diagnosis and management. Clinical features, epidemiology and management of Cholera, Campylobacteriosis, and relation of Helicobacter to the pathogenesis of gastric, duodenal ulcer and gastric cancer.
- 13) Name common anaerobic organisms: spore forming and non-spore forming. Describe Clostridial diseases e.g. Tetanus, botulism and gasgangrene, their clinical features, diagnosis and management. Diseases caused by non-spore forming anaerobic organism (2 hrs).

- 14) Identify members of the genus *Neisseria* and describe the pathogenesis, lab diagnosis and management of bacterial meningitis, epidemiology of meningococcal meningitis and diseases and the clinical features, management and epidemiology of gonorrhoea.
- 15) Describe spirochete infections with special reference to syphilis epidemiology clinical features, serological diagnosis and management (2 hrs)
- 16) Describe Chlamydial infections, their lab diagnosis clinical presentation and management (1 hr).
- 17) Name the common *Mycoplasma* infections, lab diagnosis, epidemiology and management (1 hr).
- 18) Demonstrate competence in outlining laboratory diagnosis of Pyrexia of unknown origin (PUO) cases (1 hr).
- 19) List the common sexually transmitted diseases and describe their etiology, pathogenesis epidemiology and management.
- 20) List the spore forming aerobic bacilli and the diseases they cause, their pathogenesis, clinical features, diagnosis and management, including:
 - Anthrax: Including concept of agents of bioterrorism
 - Food poisoning due to *Bacillus cereus*
 - Describe the medical importance of the genus *Bacillus* in using of their spores to test for sterilization procedures.
- 21) Name the bacteria capable of causing pandemics as exemplified by *Yersinia pestis* and describe the clinical features and the history of plague.
- 22) Practical Skills:
 - Should demonstrate competence in basic microscopy, bacterial staining and identification of bacterial morphology
 - Identify common culture media used in the clinical laboratory.

- Identify instruments and describe methods for sterilization, disinfection and antibiotics sensitivity testing.
- Identify Staphylococci and Streptococci in culture media and gram stained preparations and use laboratory tests to differentiate between them.
- Identify the following organisms in laboratory preparations
 - Mycobacteria.
 - Corynebacteria, Haemophilus and anaerobes.
 - Enterobacteriaceae, vibrios, campylobacter
 - Neisseria, syphilis and chlamydia

2.2 VIROLOGY:

By the end of this course the students should be able to:

- 1) Describe the General characteristics of viruses, Structure of medically important viruses, Symmetry of viruses, Baltimore classification, and steps of viral replication.(1 hr)
- 2) Define the pathogenesis of viral infections, describe the effect of viruses on the host cell, different routes of entry, how virus spreads inside the human body, outcome of viral infection and finally how host defense against viral infection. (1 hr)
- 3) Describe the etiology, pathology and management of viral infection of the respiratory tract, including:
 - Common cold.
 - Pharyngitis
 - Croup.
 - Bronchiolitis.
 - Pneumonia. (1 hr)
- 4) Describe the Viral etiology, structure and classification, epidemiology, clinical features, lab diagnosis, treatment and prevention of Influenza, avian flu, SARS & adenoviruses will be discussed under the above mentioned topics.(1 hr)
- 5) Describe the viral etiology, structure and classification, epidemiology, clinical features, lab diagnosis and prevention of viral gastroenteritis. (½ hr)
- 6) Describe the viral etiology, structure and classification, epidemiology, clinical features, lab diagnosis and prevention of enterically transmitted hepatitis.(1/2 hr)

- 7) Describe the structure and classification, epidemiology, clinical features, complications, lab diagnosis, treatment and prevention of blood-borne hepatitis due to hepatitis B,C,D and G viruses. (1 hr)
- 8) Describe the structure and classification, epidemiology, clinical features, complications, lab diagnosis, treatment and prevention of viral infection of the skin & mucous membrane including measles, rubella, slapped cheek and exanthema subitum, HSV-1 infection, HSV-2 infection, varicella and zoster.(2 hrs)
- 9) Describe the structure and classification, epidemiology, pathogenesis, clinical features, complications, lab diagnosis, treatment and prevention of viral glandular fever, include EBV-infection & CMV- infection and mumps. (1 hr)
- 10) Describe the structure and classification, epidemiology, clinical features, complications, lab diagnosis, treatment and prevention of HIV-1 & 2, HTLV-I&II, will be discussed as above. (1 hr)
- 11) Describe the structure and classification, epidemiology, pathogenesis, clinical features, complications, lab diagnosis and prevention of Enteroviruses: Coxsackie A viruses, Coxsackie B viruses, Echoviruses and Poliomyelitis is discussed in details. (1 hr)
- 12) Describe the structure and classification, epidemiology, clinical features, complications, lab diagnosis, treatment and prevention of viral zoonotic include: Rabies, Lassa virus, Marburg and Ebola infections.
- 13) Describe the structure and classification, epidemiology, clinical features, complications, lab diagnosis, treatment and prevention of Arboviruses. (1 hr)
- 14) Practical skills:

By the end of this course the student should be able to:

- Identify medically important viruses in electron micrographs: Herpesviruses, Adenoviruses, hepadnaviruses,Poxviruses, Influenza viruses, Rhabdoviruses,Filoviruses,Rotaviruses,Astroviruses.
- Describe the inoculation routes of embryonated egg for diagnosis of viruses such as Chorioallantoic membrane, Allantoic membrane, Amniotic cavity, Yolk sac.
- Identify the virus effects on the host cell as follows:
 - Owls eye, CMV infection.
 - Negri bodies , Rabies
 - Atypical lymphocytes, EBV infection.
- Identify the Cytopathic effect in tissue culture.
 - Cytocidal effect.
 - Formation of multinucleated giant cell.

- Formation of intranuclear inclusion bodies.
- Formation of intracytoplasmic inclusion bodies.
- Interpret serologic tests that are used in virology including:
 - CFT, HI and RPHA
- PCR.
- Identify in photographs the clinical presentation of common viral diseases.

2.3 PARSITOLOGY:

By the end of this course the student should be able to:

1. Define the terms “ parasite” ,”host” and “infection” and describe the different types of host-parasite relationships and scientific terms used in this context. (1/2 hr)
2. List common intestinal nematodes and describe their life-cycles, pathogenicity, clinical presentation, prevention and name the drugs used for their treatment, including *Ascaris lumbricoides*, *Entrobilus vermicularis* , *Trichuris trichura* , hookworms *Strongyloides stercoralis*.. (1 hr)
3. Describe the geographic distribution, life-cycles, pathogenicity, clinical presentation, prevention and name the drugs for of the filarial infections of humans, including *Wuchereria bancrofti*, *Brugia malayii*, *loa loa* and *Onchocerca volvulus*. (1/2hr)
4. Describe the life cycle, pathogenicity, clinical picture prevention and case management of non-filarial tissue nematodes that infect humans including *Toxocara canis*, *Dracunculus medinensis* ans *Trichinella spiralis* (1/2 hr).
5. Describe the life cycle, pathogenicity, clinical picture, epidemiology , prevention and case management of schistosomiasis and fascioliasis (1 hr).
6. Describe the life cycle, pathogenicity, clinical picture, epidemiology , prevention and case management of the tapeworm infections caused by *Taenia saginata*, *T solium* , *Hymenolepis nana* and *Echinococcus granulosus*. (1 hr)
7. Explain the role of arthropods as causative agents of disease .
8. Describe the etiology, pathology , case management and control of scabies and myiasis.
9. Name the insect vectors for the main parasitic , bacterial and viral diseases (1hr for 7 ,8 and 9) .

10. Describe the life-cycle pathogenicity of clinical picture and infections with common pathogenic and commensal intestinal protozoa, including *Entamoeba histolytica*, *Giardia lamblia*, *Cryptosporidium parvum* and name the commensal intestinal amoebae. (1 hr)
11. Describe the life cycle, pathology , clinical picture, of infections with opportunistic and free-living amoebae (1/2 hr) .
12. Describe the life cycle, pathology , clinical picture, epidemiology , prevention and control of malaria . (1 hr)
13. Describe the life cycle, pathology , clinical picture, epidemiology , prevention and control of leishmaniasis and trypanosomiasis (1hr) .
14. Describe the life cycle, pathology , clinical picture, epidemiology , prevention and control of Toxoplasmosis (1/2hr) .
15. Practical Skills: Identify the diagnostic stages under the microscope, in gross specimens or in projected slides of the parasites covered in the theoretical sessions.

2.4 MYCOLOGY:

By the end of this course the student should be able to:

- A) Know the characteristics of the fungi, their general structure, basic morphology, reproduction and pathogenesis.
- B) Acquire basic knowledge on main fungal infections with regard to brief clinical presentations, etiologies, laboratory diagnosis, and main drugs used for treatment. The infections covered include:
 1. Pityriasis versicolor and Tinea nigra.
 2. Piedra
 3. Dermatophytosis
 4. Rhinosporidiosis
 5. Mycetoma
 6. Subcutaneous zygomycosis
 7. Phaeohyphomycosis
 8. Sporotrichosis
 9. Candidiasis
 10. Cryptococcosis
 11. Aspergillosis

12. Zygomycosis
 13. Pneumocystosis
 14. Blastomycosis
 15. Histoplasmosis
 16. Coccidioidomycosis
 17. Paracoccidioidomycosis
- C) Include or exclude a fungal infection in the differential diagnosis of a case.
- D) Interpret the received lab. results and make an opinion on the diagnosis and treatment of the infection considered.
- E) Practical Skills:
- 1) Know the structure and size of the medically important yeasts, and recognize them under the microscope and in culture.
 - 2) Know the special media and identification kits used for yeasts and the lab. tests done to identify them.
 - 3) Recognize mold fungi under the microscope and their various morphologies and spores
 - 4) Recognize the fungal structures in patient specimens from the common fungal infections; including, budding yeast cells, Pseudohyphae, Septate hyphae, Non-septate hyphae, and other fungal elements.
 - 5) Know the common media used to culture patient specimens for fungi, and other media to culture the fungi in pure culture.
 - 6) Know the various mounting and staining materials used to examine fungi in patient specimens and in culture.
 - 7) Observe demonstrations on fungal serology and identification kits.

5:Resources:

5.1 Teaching Staff (Microbiology + Immunology)

- 1) Prof. A.M. Kambal (Bacteriology)
- 2) Prof. Hanan Babai (Bacteriology)
- 3) Dr. Fawzia Al-Otaibi (Bacteriology)
- 4) Dr. Abdulaziz Al-Khattaf (Bacteriology)
- 5) Dr. Ali Somily (Bacteriology)
- 6) Dr. Mohd. Arif (Virology)
- 7) Dr. Malak Al-Hazmi (Virology)
- 8) Dr. Mona Badr (Virology +Immunology)
- 9) Prof. Osman Gad-El-Rab (Immunology)
- 10) Dr. Adel Almogren (Immunology)
- 11) Dr. Hazem Abueisha (Immunology)
- 12) Prof. Saleh Al-Hedaithy (Mycology)
- 13) Prof. Ahmad Awad Adeel (Parasitology)
- 14) Dr. Ibrahim Al-Khalaifi (Parasitology)
- 15) Dr Rafiaa Rashad (Parasitology)

5.2 References & Recommended textbooks:

- 1) **Medical Microbiology & Introduction to Infectious Diseases.**
John C. Sherris, Published by Prentice Hall International, U.S.A.
Latest Edition.
- 2) **Medical Microbiology**
David Greenwood, Published By ELST with Churchill Livingstone Latest Ed
- 3) **Microbiology**
Richard A. Harvey and Pamela C. Champe, Lippincott's Illustrated Reviews,
2nd Edition.
- 4) **A Colour Atlas of Infectious Diseases**
R.T.D. Emod, Published by Wolfe Medical, London, Latest Edition.
- 5) **A Colour Atlas of Microbiology**
Olds, Published by Wolfe Medical, London, Latest Edition
- 6) **Medical Parasitology**
Markeyl Voge/ David, Published by W.B. Saunders Company, London, 7th Edition
- 7) **Medical Virology**
David O. Whitel Frank Fenner, Published by Academic Press, Inc.,
London, Latest Edition
- 8) **Medical Mycology Lecture Slides**
Al-Hedaithy, S.S.A., Al-Kheraiji for Printing.2006. Riyadh.
Distributor; Medical Book House, King Abdallah Road (West), Riyadh.
- 9) **Medical Mycology**
J.Kwon Chung and J. Bennettee. Published by Lea & Febiger, Philadelphia,
Latest edition.

5.3 : Websites:

<http://www.cdc.gov>
<http://www.kcom.edu/faculty/chamberlain>
<http://clinicalcases.blogspot.com/2005/07/infectious-diseases-cases.html>
http://www.ccghe.jhmi.edu/CCG/distance/Prerecorded_Grand_rounds#Ped_clin_cases
<http://www.mdchoice.com/phototoc.asp>
<http://www.dpd.cdc.gov/DPDx/HTML/Cases.html>
<http://www.heartlandntbc.org/casestudies.asp>
<http://www.idinchildren.com/wyd.asp>
<http://www.sci.ccny.cuny.edu/~lima/mycology.html>
<http://www.plospathogens.org/home.action>
<http://www.promedmai.org/pls/otn/f?p=2400:1000:>

6: Student performance Evaluation:

Class work will be weighed as follows:

First term	Continuous assessment test 1 (MCQ)	10%	CLASS WORK
	Practical test 1(spots)	10%	
	End of term1 test (MCQ)	30%	
Second term	Continuous assessment test 2(MCQ)	10%	
	Final Practical examination 1(spots)	10%	
	Final written Examination (MCQ)	30%	
=100% TOTAL			Final Exam.

The different subspecialties will be weighed in the total grade as follows :

Bacteriology	50%
Virology	20%
Parasitology	18%
Mycology	12%
Total	100%

7: Management Plan.

Coordinators:

Prof. Ahmed A. Adeel (Group B male students, term1, Group A term 2), Tel 4671013 e-mail aadeel@ksu.edu.sa

Dr Abdul-Aziz Al- Khattaf (Group A male students, term1, Group B term 2)

Dr Malak Al-Hazmi (All female students) Tel 4671010 e-mail:

8: Time Table

**DEPARTMENT OF PATHOLOGY
MICROBIOLOGY COURSE MAC 221 LECTURE SCHEDULE
ANNUAL SYSTEM 1429 -1430 H (2008-2009)**

MALE STUDENTS (GROUP -A)

LECTURES:

WEDNESDAYS ----- 8 – 9 A.M.

WEDNESDAYS 9 – 10 A.M.

PRACTICALS:

WEDNESDAYS -----10 – 12 Noon

**VENUE: 3107 Lecture Theater - E (8-10 A.M.), College of Medicine, Level-3
 236 Lecture Theater -B (10-11 A.M) College of Medicine, Level- 2**

DR. ABDULMALIK ALSHEIKH
Chairman
Department of Pathology

PROF. A.M. KAMBAL
Course Coordinator
Bacteriology Section

**DEPARTMENT OF PATHOLOGY
MICROBIOLOGY COURSE MAC 221 LECTURE SCHEDULE
ANNUAL SYSTEM 1429 -1430 H (2008-2009)**

DAY	DATE	TOPICS		LECTURER
WED	15.10.29 15.10.08	Introduction to the course	8-9 A.M.	Prof. Kambal
WED	15.10.29 15.10.08	Bacterial Morphology	9-10 A.M.	Dr.Khattaf
WED	15.10.29 15.10.08	Bacterial Physiology	10-11 A.M.	Dr.Khattaf
WED	15.10.29 15.10.08	Practical: Bacterial Morphology, Microscopy & Staining	11-12 Noon	Prof. Kambal/ Dr. Khattaf/Dr.Ali
WED	22.10.29 22.10.08	Fungal Structure & Pathogenesis	8 - 9 A.M.	Prof. Al- Hedaithy
WED	22.10.29 22.10.08	Bacterial Culture Media (Lecture)	9 -10 A.M	Dr.Khattaf
WED	22.10.29 22.10.08	Normal flora-host parasite relationship	10-11 A.M.	Prof. Kambal
WED	22.10.29 22.10.08	Bacterial genetics	11 -12 Noon	Dr. Khattaf
WED	29.10.29 29.10.08	Sterilization & Disinfection	8 - 9 A.M	Dr. Khattaf
WED	29.10.29 29.10.08	Antibiotic (1) General principles	9 - 10 A.M	Prof.Kambal
WED	29.10.29 29.10.08	Practical (Culture Media)	10 - 12 Noon	Prof. Kambal/ Dr. Khattaf/Dr.Ali

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ANNUAL SYSTEM 1429 -1430 H (2008-2009)**

DAY	DATE	TOPICS		LECTURER
WED	7.11.29 5.11.08	Staphylococcal infections	8 - 9 A.M.	Prof. Kambal
WED	7.11.29 5.11.08	β- Haemolytic Streptococci	9 -10 A.M	Prof. Kambal
WED	7.11.29 12.11.08	Practical: Sterilization & Disinfection	10 - 12 Noon	Prof.Kambal/ Dr.Khattaf / Dr.Ali
WED	14.11.29 12.11.08	α-haemolytic Streptococci	8 -9 A.M	Dr. Ali
WED	14.11.29 12.11.08	Streptococcus pneumoniae & Enterococci	9-10 A.M.	Dr. Ali
WED	14.11.29 12.11.08	Mycobacterium tuberculosis	10-11 A.M	Prof.Kambal
WED	14.11.29 12.11.08	Practical: Staphylococci & Streptococci	10-12 Noon	Prof.Kambal/ Dr.Khattaf / Dr.Ali
WED	21.11.29 19.11.08	Non-tuberculous mycobacteria	8-9 A.M.	Prof. Kambal
WED	21.11.29 19.11.08	Corynebacteria and Listeria	9-10 A.M.	Dr.Ali
WED	21.11.29 19.11.08	Haemophilus, Bordetella	10-11 A.M	Prof.Kambal
WED	21.11.29 19.11.08	Practical: Mycobacteria and Corynebacteria	11-12 Noon	Prof.Kambal/ Dr.Khattaf / Dr.Ali

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DAY	DATE	TOPICS		LECTURER
WED	28.11.29 26.11.08	Anaerobic infections (sporing anaerobes)	8-9 A.M.	Dr. Ali
WED	28.11.29 26.11.08	Anaerobic infections (non-sporing anaerobes)	9-10 A.M.	Dr. Ali
WED	28.11.29 26.11.08	Tutorial Respiratory tract infections	10 -11 A.M	Prof.Kambal/ Dr.Khattaf / Dr.Ali
WED	28.11.29 26.11.08	Practical: Haemophilus, Bordetella and anaerobes	10 -12 Noon	Prof.Kambal/ Dr.Khattaf / Dr.Ali

E I D H O L I D A Y S & C A T E X A M

WED	26.12.29 24.12.08	Gram-negative organisms (Enterobacteriaceae)	8 - 9 A.M.	Dr. Ali
WED	26.12.29 24.12.08	Gram-negative organisms (non-fermenters)	9 -10 P.M.	Dr. Khattaf
WED	26.12.29 24.12.08	Salmonella Infections	10 -11 A.M.	Prof. Kambal
WED	26.12.29 24.12.08	Shigella and Vibrios	11-12 Noon	Prof. Kambal
WED	03.1.30 31.12.08	Campylobacter, Helicobacter	8-9 A.M.	Dr. Khattaf

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DAY	DATE	TOPICS	LECTURER
WED	03.1.30 31.12.08	Gastroenteritis & Food Poisoning	9-10 A.M Prof. Kambal
WED	03.1.30 31.12.08	Practical: Enterobactericicia, Vibrios, Campylobacter	10-12 Noon Prof. Kambal/ Dr. Khattaf/ Dr.Ali
WED	10.1.30 07.1.08	Neisseria gonorrhoeae & Meringococcal infections	8-9 A.M. Dr. Ali
WED	10.1.30 07.1.09	Syphilis	9-10 A.M. Dr. Ali
WED	10.1.30 07.1.09	Sexually Transmitted Disease	10-11 A.M Dr. Ali
WED	10.1.30 07.1.09	Practical: Neisseria, syphilis & Chlamydia	10-12 Noon Prof. Kambal/ Dr. Khattaf/ /Dr.Ali
WED	17.1.30 14.1.09	PRACTICAL REVISION	9-12 Noon Prof. Kambal/ Dr. Khattaf/ /Dr.Ali
WED	24.1.30 21.1.09	P R A C T I C A L E X A M	
WED	02.2.30 28.1.09	Anthrax & Plague	8-9 A.M Dr. Ali
WED	02.2.30 28.1.09	Leptospirosis / Zoonosis	9-10 A.M Dr. Ali
WED	02.2.30 28.1.09	Antibiotics II (Clinical usage)	10-11 A.M Dr. Ali
WED	09.2.30 4.02.09	Chlamydia & Mycoplasma	8-9 A.M. Dr. Ali
WED	09.2.30 4.02.09	PUO & Brucellosis	9-10 A.M. Dr. Ali
WED	09.2.30 4.02.09	CNS infections	10-11 A.M. Prof. Kambal

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**PRACTICAL
MAC 221**

**MALE STUDENTS (Grp-A)
ANNUAL SYSTEM 1429 -1430 H (2008-2009)**

DAY	DATE	TOPICS
WEDNESDAY	15.10.29 15.10.08	Bacteriology Morphology, Microscopy & Staining
WEDNESDAY	29.10.29 29.10.08	Culture Media
WEDNESDAY	07.11.29 12.11.08	Sterilization, disinfection & antibiotics
WEDNESDAY	14.11.29 12.11.08	Staphylococci and Streptococci
WEDNESDAY	21.11.29 19.11.08	Mycobacteria and Corynebacteria
WEDNESDAY	28.11.29 26.11.08	Haemophilus, Bordetella & Anaerobes
WEDNESDAY	03.1.30 31.12.08	Enterobacteriaceae, Vibrios, Campylobacter
WEDNESDAY	10.1.30 07.1.09	Neisseria, Syphilis and Chlamydia
WEDNESDAY	17.1.30 14.01.09	PRACTICAL REVISION
WEDNESDAY	24.1.30 21.1.09	PRACTICAL EXAMINATION

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**DEPARTMENT OF PATHOLOGY
MICROBIOLOGY COURSE MAC 221 LECTURE SCHEDULE
ANNUAL SYSTEM 1429 -1430 H (2008-2009)**

FEMALE STUDENTS

LECTURES:

SATURDAYS ----- 10 – 11 A.M.

SATURDAYS 11 – 12 Noon

PRACTICALS:

SATURDAYS -----1 – 3 P.M.

VENUE: Malaz Girls College

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**DEPARTMENT OF PATHOLOGY
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ANNUAL SYSTEM, 1429 -1430 H (2008-2009)**

DAY	DATE	TOPICS	LECTURER
SAT	11.10.29 11.10.08	Introduction to the course	10-11 A.M. Prof. Hanan
SAT	11.10.29 11.10.08	Bacterial Morphology & Physiology	11-12 Noon Prof. Hanan
SAT	11.10.29 11.10.08	Practical: Bacterial Morphology, Microscopy & Staining	2 - 3 P.M. Prof. Hanan/ Dr. Fawzia
SAT	18.10.29 18.10.08	Fungal Structure & Pathogenesis	10-11 A.M. Prof. Al-Hedaithy
SAT	18.10.29 18.10.08	Genetics	11-12 Noon Prof. Hanan
SAT	18.10.29 18.10.08	Bacterial Culture Media	1-2 P.M. Prof. Hanan
SAT	18.10.29 18.10.08	Normal Flora -Host Parasite Relationship	2-3 P.M. Prof. Kambal
SAT	25.10.29 25.10.08	Antibiotics (1) General principles	10 -11 A.M. Prof. Hanan
SAT	25.10.29 25.10.08	Sterilization and Disinfection	11-12 Noon Prof. Hanan
SAT	25.10.29 25.10.08	Practical: Culture Media	1 - 2 P.M. Prof. Hanan / Dr.Fawzia
SAT	3.11.29 1.11.08	Staphylococcal infections	10-11 A.M. Prof. Hanan
SAT	3.11.29 1.11.08	β -haemolytic streptococci	11-12 Noon Dr. Fawzia

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**DEPARTMENT OF PATHOLOGY
MICROBIOLOGY COURSE MAC 221 LECTURE SCHEDULE
ANNUAL SYSTEM, 1429 -1430 H(2008 -2009)**

DAY	DATE	TOPICS	LECTURER
SAT	3.11.29 1.11.08	Practical: Sterilization, Disinfection & Antibiotics	1-3 P.M. Prof.Hanan / Dr.Fawzia
SAT	10.11.29 8.11.08	Mycobacterium tuberculosis	10-11 A.M. Prof. Hanan
SAT	10.11.29 8.11.08	Non-tuberculous Mycobacterium	11-12 Noon Prof. Hanan
SAT	10.11.29 8.11.08	Streptococcus pneumoniae & Enterococci	1-2 P.M. Dr. Fawzia
SAT	10.11.29 8.11.08	α -haemolytic streptococci	2-3 P.M. Dr. Fawzia
SAT	17.11.29 15.11.08	Haemophilus, Bordetella	10-11 A.M. Dr. Fawzia
SAT	17.11.29 15.11.08	Corynebacteria & Listeria	11-12 Noon Dr. Fawzia
SAT	17.11.29 15.11.08	Practical: Staphylococci & Streptococci	1-3 P.M. Prof. Hanan /Dr. Fawzia
SAT	24.11.29 22.11.08	Gram Negative Organisms (<i>Enterobacteriaceae</i>)	10-11 A.M. Prof. Hanan

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ANNUAL SYSTEM, 1429 -1430 H(2008 -2009)**

DAY	DATE	TOPICS		LECTURER
SAT	24.11.29 22.11.08	Gram Negative Organisms (Non-fermenters)	11-12 Noon	Prof. Hanan
SAT	24.11.29 22.11.08	Tutorial: Respiratory Tract Infections	1-2 P.M.	Dr. Fawzia
SAT	24.11.29 22.11.08	Practical: Mycobacteria & Corynebacteria	2-3 P.M.	Prof. Hanan Dr. Fawzia
SAT	1.12.29 29.11.08	Non-sporing Anaerobes	10-11 A.M.	Prof. Hanan
SAT	1.12.29 29.11.08	Anaerobic (sporing)	11-12 Noon	Dr. Fawzia
SAT	1.12.29 29.11.08	Salmonella	1 -2 P.M.	Dr. Fawzia
SAT	1.12.29 29.11.08	Practical: Haemophilus & Bordetella	2-3 P.M.	Prof. Hanan Dr. Fawzia
EID ADHA HOLIDAYS				
C A T E X A M				
SAT	29.12.29 27.12.08	Vibrio, Campylobacter, Helicobacter	10-11 P.M.	Dr. Fawzia
SAT	29.12.29 27.12.08	PUO & Brucellosis	11-12 Noon	Dr. Fawzia
SAT	29.12.29 27.12.08	Shigella & Food Poisoning	1-2 P.M.	Dr. Fawzia
SAT	29.12.29 27.12.08	Practical: Enterobacteriaceae, Vibrios, Campylobacter	2-3 P.M.	Prof. Hanan/ Dr. Fawzia

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ANNUAL SYSTEM, 1429 -1430 H(2008 -2009)**

DAY	DATE	TOPICS	LECTURER
SAT	06.1.30 03.1.09	Neisseria gonorrhoeae & Meningococcal infections	10-11 P.M. Prof. Hanan
SAT	06.1.30 03.1.09	Sexually Transmitted Disease	11-12 Noon Prof. Hanan
SAT	06.1.30 03.1.09	Syphilis	1-2 P.M. Dr.Fawzia
SAT	06.1.30 03.1.09	Practical: Neisseria, Syphilis & Chlamydia	2-3 P.M. Prof. Hanan\ Dr.Fawzia
SAT	13.1.30 10.1.09	CNS Infections	10-11 A.M Prof. Hanan
SAT	13.1.30 10.1.09	Chlamydia	11-12 Noon Dr. Fawzia
SAT	13.1.30 10.1.09	Mycoplasma	1-2 P.M. Dr. Fawzia
SAT	13.1.30 10.1.09	Antibiotic (2)	2-3 P.M Prof. Hanan
SAT	20.1.30 17.1.09	Practical Revision	Prof.Hanan / Dr.Fawzia
WED	24.1.30 21.1.09	P R A C T I C A L E X A M I N A T I O N	
SAT	5.2.30 31.1.09	Anthrax & Plague	10-11 A.M. Dr. Fawzia
SAT	5.2.30 31.1.09	Leptospirosis / Zoonosis	1-2 P.M. Dr. Fawzia

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**PRACTICAL
MAC 221
FEMALE STUDENTS
ANNUAL SYSTEM, 1429 -1430 H(2008 -2009)**

DAY	DATE	TOPICS
SATURDAY	11.10.29 11.10.08	Bacterial Morphology, Microscopy & Staining
SATURDAY	25.10.29 25.10.08	Culture Media
SATURDAY	3.11.29 1.11.08	Sterilization, disinfection & antibiotics
SATURDAY	17.11.29 15.11.08	Staphylococci and Streptococci
SATURDAY	24.11.29 22.11.08	Mycobacteria and Corynebacteria
SATURDAY	1.12.29 29.11.08	Haemophilus, Bordetella & Anaerobes
SATURDAY	29.12.29 27.12.08	Enterobacteriaceae, Vibrios & Campylobacter
SATURDAY	06.1.30 03.1.09	Neisseria, Syphilis & Chlamydia
SATURDAY	20.1.30 17.1.09	PRACTICAL REVISION
WEDNESDAY		PRACTICAL EXAMINATION

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