

## SYLLABUS FOR "PDCC INFECTIOUS DISEASES (CLINICAL MICROBIOLOGY)"

**Total: One year (12months)**

### Supervision:

Initially, the trainee will be fully supervised by the Faculty posted in the area. In the course of training, the level of supervision will be tapered according to the experience and confidence gained.

Clinical knowledge will be acquired by a variety of means, including close liaison with appropriate medical and surgical and radiological meetings. Fellows are expected to develop an understanding of the infectious diseases of the patients from bed to bench. The following inter-relationships will be maintained through multidisciplinary meetings in form of short clinics and regular bench work in the microbiology dept under supervision of clinicians and microbiologist.

A. Microbiology Course

B. Clinical Course: Medicine, Pediatrics, Gastroenterology, General surgery, Neurology, Oncology and Hematology, Critical care medicine, Pulmonary Medicine, Rheumatology & Immunology, Urology & Dermatology, venerology & Leprology.

C. Eligibility: MD (Microbiology)

### **A] Microbiology Course:**

Infectious diseases Fellow (IDF) are expected to be available in the department during routine working hours. They would be participating in routine teaching and training programmes. They will be posted and trained under following specialized areas;

1. Basic laboratory techniques in bacteriology
  - 1.1 Culture techniques
  - 1.2 Maintenance of stock culture.
  - 1.3 Storage of chemotherapeutic agents and antibiotic assays
  - 1.4 Techniques of Air and OT samples surveillance
2. Basic laboratory techniques in Virology
3. Basic laboratory techniques in Mycology
  - 3.1 Culture isolation and identification techniques for fungus.
4. Basic laboratory techniques in Parasitology
  - 4.1 Smear examination and culture techniques
  - 4.2 Newer rapid diagnostic techniques
5. Basic laboratory techniques in Immunology
6. Culture isolation and identification techniques for Mycobacteria.
7. Fundamentals of Microbiology including molecular biology
  - 7.1 Safety measures and use of bio-safety cabinets
  - 7.2 Quality control, quality assurance
  - 7.3 Sterilization and disinfections in the laboratory and wards
  - 7.4 Epidemiological surveillance of diseases
  - 7.5 Pathogenesis of infectious diseases
  - 7.6 Biological standardization
  - 7.7 Bio-statistics for analysis of lab results
  - 7.8 Computerization of lab data and reporting

8. Automation in Microbiology e.g. BACTEC, VITEK, MALDITOF, REAL TIME PCR, WHOLE GENOME SEQUENCING , CD4 ESTIMATION, CHEMILUMINESCENCE, FULLY AUTOMATED ELISA ETC.

**B. Clinical Course:**

The trainee during the clinical experiences will have opportunity to observe and manage patients with wide variety of infectious diseases. The trainee will be taking In patient rotation to various clinical department during the course tenure under supervision of respective clinician incharges. The trainee will take complete history and examination of the patient with appropriate sample collection. The samples will be processed in the department of microbiology under specialized sections. Fellow will be able to diagnose and manage the following cases;

- i. Diagnosis & management of Acute febrile illnesses(AFI)
- ii. Diagnosis & management of Acute encephalitis syndrome(AES)
- iii. Diagnosis & management of Acute and chronic hepatitis.
- iv. Diagnosis & management of pyrexia of unknown origin (PUO)
- v. Diagnosis & management of acquired immunodeficiency syndrome AIDS).
- vi. Diagnosis & management of opportunistic Parasitic infections related to HIV.
- vii. Antifungal/ antimicrobial prophylaxis during neutropenia & immunodeficiency.
- viii. Diagnosis & management of bacteremia & fungemia.
- ix. Pathogenesis of infections related to intravascular catheterization & their management.
- x. Pathogenesis, pathophysiology diagnosis & management of CNS infections.
- xi. Management & diagnosis of Subacute sclerosing Panencephalitis(SSPE)
- xii. Diagnosis & management of acute rashes and eruptions.
- xiii. Diagnosis & management of acute respiratory infection.
- xiv. Diagnosis & management of ventilator associated respiratory infection.
- xv. Diagnosis & management of upper gastrointestinal tract infection.
- xvi. Diagnosis & management of acute and chronic diarrhea, gastroenteritis.
- xvii. Diagnosis and Management of deep seated chronic infections.
- xviii. Diagnosis and Management of infection in comatose patients/ infected road accidents.
- xix. Diagnosis and Management of sexually transmitted and pelvic inflammatory diseases.
- xx. Diagnosis and management of all post-operative infection.
- xxi. Diagnosis & management of infection in cancer patients.
- xxii. Infection acquired directly or indirectly from animals or from arthropod vectors.
- xxiii. Immunology of infectious disease.

**Routine schedule of the trainees:**

- i. The trainee would be attending hospital OPD and IPD consultation in the first half of the day and during second half he/she will be posted in microbiology department.
- ii. The trainee would be encouraged and given the opportunity to attend and lead appropriate clinical correlation of infectious diseases in multidisciplinary meetings.
- iii. The trainee would be encouraged to attend appropriate educational meetings and courses.
- iv. The trainee would participate in and initiate relevant clinical audit.
- v. Trainees will be expected to be familiar with recent advances in infectious disease and follow the guidelines for diagnosis & management of diseases.
- vi. The trainee would be encouraged to participate in research, and to pursue one or more projects up

to and including publication. An understanding of the principles and techniques used in research, including the value of clinical trials and basic biostatistics, should be acquired. Presentation of research and audit results at state and national meetings would be encouraged.

vii. The trainee would continue to participate in the on-call rotation duties as per department duty roster.

viii. Procedural competence will need to be reviewed at intervals, and this regular review should also assess the number of cases required in order to ensure competence.


**The academic activities of the program in the hospital would include:-**

1. Regular academic sessions
2. Case discussion and seminars
2. Clinical Case presentations
4. Audit / Project / Research
5. Journal club

Conferences / CMEs / Live workshops

**Assessment of training: -**

1. Internal Assessment: The candidates are expected to maintain a logbook of minimum fifty (4X12 specialty) clinical cases reports of the patients diagnosed and treated for infectious diseases in the hospital. In addition, each candidate will undergo laboratory assessment periodically by the faculty of the department following Institute procedure in this regard. The result of the internal assessment will be made available to the examiners at the time of examination. At the end of 12 calendar months there will be a certifying examination both theory as well as practical as per Institute guidelines.
2. Examination: The trainers would be undergoing theory and practical examination at the end of course tenure. Theory examination will consist of two papers
  - i) Basics of Microbiology and applied.
  - ii) Syndromic approach to infectious diseases.

  
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Microbiology  
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Lucknow.

iii) Rotation Postings:

Semester	Rotation posting	Duration	Supervisor
1 <sup>st</sup> Semester /four months	Orientation to course; Microbiology lab & IPD & OPD hospital dept to liaison departments.	15 days	Microbiologist
	Infectious diseases with Bacteriology lab; OPD, IPD & consultations	1.5 months	Microbiologist/ Clinician
	Respiratory Medicine with Tuberculosis lab;	1 month	Microbiologist/ Clinician
	Neuromedicine with virology lab:	1month	Microbiologist/ Clinician
2 <sup>nd</sup> Semester/ 4months	Rheumatology with HIV /ICTC	1month	Microbiologist
	Gastromedicine with virology and parasitology lab.	1month	Microbiologist/ Clinician
	Dermatology, venerology & Leprology with Mycology lab.	1month	Microbiologist/ Clinician
	Pediatric infectious diseases/malignancy cases with bacteriology lab	1month	Microbiologist/ Clinician
3 <sup>rd</sup> Semester/ 4months	Pediatric ICU's with Bacteriology lab.	1month	Microbiologist/ Clinician
	Critical Care Medicine with Hospital infection control.	1month	Microbiologist/ Clinician
	Oncology & hematology with virology lab.	15days	Microbiologist/ Clinician
	Biostatistics, research methodology and evidence based medicine with Research cell.	15days	
	Examination and assessment	1month	

*[Signature]*  
 Head of the Department of  
 Microbiology  
 K. G.'s. Medical University U. P.  
 Lucknow.

### Recommended Books and Journals:

S.No	Name of Books/Publisher	Author/Edited by
1.	Principles and Practice of Infectious Diseases	Mandell, Douglas, and Bennett's
2.	Principles of Internal Medicine	Harrison's
3.	National and internal guidelines of laboratory diagnosis and management of infectious diseases	WHO/CDC/MOFHW/ICMR/NCDC/RNTCP/HISHAM/HICSI/IAP/ Various clinical guidelines.
4.	Medical Mycology, a practical approach, IRL Press	E G V Evans and M D Richardson
5.	Anaerobic microbiology, A practical approach, IRL press	P N Levett
6.	Bacterial Pathogenesis, a molecular approach, ASM press	Abigail A Salyers and Dixie D. Whitt
7.	Bailey Scott's Diagnostic Microbiology	Ellen Jo Baron lance R Peterson and Sidney M Finegold
8.	Molecular Cloning, a laboratory manual 2nd edition CSH press	J Sambrook, E F Fritsch and T Maniatis
9.	AIDS causes and prevention, Mittal publications	T B L Jaiswal
10.	Medial Mycology 3rd edition, W B Saunders Company	John W Rippon
11.	Mackie & McCartney, Practical Medical Microbiology 13th edition, Churchill Livingstone	J G Collee, J P Duguid, A G Fraser and B P Marmion
12.	Topley & Wilson, Principles of Bacteriology, Virology and immunity 8th edition, Edward Arnold	M Tom Parker and Leslie H Collier
13.	Current protocol immunology, Current Protocols	J E Coligan, A M Kruisbeek, A H Margulies, E M Shevach and W Strober
14.	Gradwohl's Clinical Laboratory methods and Diagnosis 8th edition, B I Publications Ltd	A C Sonnenwirth and L Jarett
15.	Clinical Mircobiology procedures hand book, ASM press	H D Isenberg
16.	Manual of Clinical Microbiology , ASM press	A Balwos, W J Hausler, K L Herrmann, H D isenberg and H J Shadomy

### List of Journals:

<p><b>Infection &amp; Immunity.</b></p> <p><b>Bull WHO</b></p> <p><b>Nature Medicine.</b></p> <p><b>Am J Epidemiology.</b></p> <p><b>J Infection Disease.</b></p> <p><b>J Virological Method.</b></p> <p><b>J Clin Microbiology (Virology).</b></p>	<p><b>Antimicrobial Agents &amp; Chemotherapy.</b></p> <p><b>J. Immunology.</b></p> <p><b>New England J Med.</b></p> <p><b>J Clin Microbiology.</b></p> <p><b>JAMA.</b></p> <p><b>American J ClinPathol.</b></p> <p><b>Lancet.</b></p> <p><b>J Med Virology.</b></p>
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# KING GEORGE'S MEDICAL UNIVERSITY UP, LUCKNOW

## DEPARTMENT OF MICROBIOLOGY

Ref. No. 404/19

Date. 02/09/19

To,  
Prof. Vinita Das,  
Dean Medical Sciences  
KGMU, Lucknow



Subject: PDCC Infectious diseases; syllabus, exit and entry exam

Dear Madam,

Kindly refer to the meeting held on 21-8-19 regarding the above in your office and attended by Prof. Prashant Gupta of Department of Microbiology. Following the inputs from the meeting, I had a discussion with Dr. Himanshu Reddy of Department of Medicine and Prof A K Singh, controller of examination, KGMU, Lucknow.

Following the suggestions made by the committee and discussion held with Dr. Himanshu and COE, we wish to submit the following justification;

- Name of the course:** Since to begin with both the departments of Medicine and Microbiology proposed the course, academic council suggested to merge the course and run it on the lines of similar course being run in Sanjai Gandhi PGI of Medical Sciences (copy attached). Therefore this was merged. The course is approved by academic council. Now since there is a suggestion to run it separately, we may run it as "PDCC Infectious Diseases (Clinical Microbiology)" to be operational from department of Microbiology. The remaining three seats may be named "PDCC Infectious Diseases (Clinical Medicine)" and will be operational from department of Medicine.
- Number of seats:** will be total six seats; three for Microbiology and three for Medicine, as proposed in common program and approved by academic council.
- Entrance Examination:** Will be conducted by university as for other such courses, as suggested in common program. The examination paper for Microbiology seats will be prepared by Department of Microbiology and examination paper for Medicine seats will be prepared by Department of Medicine.
- Exit Examination:** Will be conducted by university as for other such courses, as suggested in common program. There will be an internal and an external examiner. Examiners for Microbiology seats will be from Department of Microbiology, while Examiners for Medicine seats will be from Department of medicine.

5. **Course syllabus:** This has to be an integrated course and training will be provided by both the Departments of Medicine and Microbiology. This consensus has already been reached by both the departments.

6. **Eligibility:** For microbiology seats: MD (Microbiology) for three seats

For medicine seats: MD in clinical subjects as approved by academic council.

7. **Payment to these Fellows:** Department of Microbiology does not have a senior residency program, at this point of time; however, we have moved our application for the same. Therefore, as suggested in the common program these fellows may be paid stipend from the common pool of senior residents of GM&AH, in case there are some unfilled positions (every year some positions go vacant). Department of Pulmonary Critical care has already agreed to share.

These fellows can also be paid from the common pool of junior residents in case there are vacant posts of sanctioned MD residents in the University (many sanctioned positions in some departments go vacant). In case none of these positions are vacant, some of the seats may remain unpaid. Similar model has been approved for Department of Physiology by academic council.

Department of Medicine have a residency program and their fellows may be paid through the residency program.

8. We would like to bring to your attention that similar course is already being conducted by the three reputed Institutes:

- a) Department of Microbiology, SGPGIMS, Lucknow
- b) Department of Microbiology, AIIMS, Jodhpur
- c) Department of Microbiology, AIIMS, Rishikesh

**Here, we request you to kindly allow us to start the program in current year.**

Thanking you

With kind regards

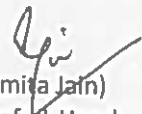
Yours faithfully,

(Amita Jain)  
Prof. & Head

Copy to:

1. PA to Hon. Vice-Chancellor, K.G. Medical University UP, Lucknow for his kind perusal.
2. Pro-Vice-Chancellor, K.G. Medical University UP, Lucknow.
3. Controller of Examinations, K.G. Medical University UP, Lucknow.
4. Head of the Department of Medicine, K.G. Medical University UP, Lucknow.

5. Dr. D. Himanshu, Department of Medicine, K.G. Medical University UP, Lucknow.
  6. Chief Medical Superintendent, G.M. & Associated Hospitals, K.G.M.U., Lucknow.
- The Registrar, K.G. Medical University UP, Lucknow.

  
(Amrita Jain)  
Prof. & Head