



**AMRITA**  
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**PROGRAM**  
**DM Nephrology**  
(Revised with effect from 2016-2017 onwards)

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## **Goals and general objectives of postgraduate Medical education program in Nephrology**

### **Goal**

The goal of postgraduate medical education shall be to produce competent specialist and/or Medical teacher:

- ✓ Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
- ✓ Who shall have mastered most of the competencies, pertaining to the specialty, those are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- ✓ Who shall be aware of the contemporary advances and developments in the discipline concerned
- ✓ Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology; and
- ✓ Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

### **General Objectives**

- ★ Recognize the importance of the concerned speciality in the context of the health need of the community and the national priorities in the health sector.
- ★ Practice the speciality concerned ethically and in step with the principles of primary healthcare.
- ★ Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality.
- ★ Diagnose and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriate selected and conducted investigations.
- ★ Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the speciality.

- ★ Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.
- ★ Function as an effective leader of a health team engaged in healthcare, research or training.

## Program Outcomes

PO1: Competence to practice the speciality in the community with the training obtained in the scientific and clinical aspects of the speciality of Nephrology

PO2: The competence to practice the speciality with care and comparison thereby delivering the highest standard of Nephrology care to the community

PO3: Competency in the academic and research aspects of Nephrology.

## Program Specific Outcomes

PSO1. Possession of the current, latest, scientific and evidence-based knowledge pertaining to the speciality of Nephrology.

PSO2. The skills required to undertake independent clinical practice in Nephrology.

PSO3. The Attitude of punctuality, reliability, responsibility, accountability and caring.

PSO4: A good and sound foundation of Ethical Values in the practice of Nephrology.

PSO5: Competence to be an effective teacher and communicator in Nephrology.

PSO6: The ability to effectively Communicate with patients, peers and the community in the discharge of his/her clinical role.

### **Components of the curriculum for DM programme In Nephrology**

The major components of the curriculum shall be:

- Theoretical Knowledge
- Practical/ clinical skills
- Attitudes, including communication
- Training in research methodology

Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000.

#### **Goals**

1. To train doctors in the scientific and clinical aspects of the speciality of Nephrology
2. To empower them to practice the speciality of Nephrology with competence, care, and comparison thereby delivering the highest standard of Nephrology care to the community
3. To empower the trainee in academic and research aspects of Nephrology; to empower the trainee to become an effective teacher and communicator in Nephrology.

4. To establish the required training methods, evaluation methodology, and qualifying norms for the successful completion of the DM Programme in Nephrology.

### **Statement of Objectives**

1. To provide the candidate with the current, latest, scientific and evidence-based **knowledge** pertaining to the above mentioned areas in Nephrology.
2. To impart the **skills** to undertake independent clinical practice in the above areas of Nephrology and to provide opportunities to the practice of these skills in a graded manner and under suitable supervision to a point where the candidate is capable of practicing these skills independently.
3. To inculcate in the candidate an **Attitude** of punctuality, reliability, responsibility, accountability and caring; to empower the candidate with a good and sound foundation of **Ethical Values** in the practice of Nephrology; and to develop in the candidate the ability to effectively **Communicate** with patients, peers, superiors, and the community in the discharge of his/her clinical role.

## Selection of candidates

### **Eligibility**

Candidate seeking admission for D.M Programme in Nephrology must possess a recognized postgraduate degree of MD in the subject specified in the regulations of the Medical Council in India from time to time. (or its equivalent recognized degree). Candidates who have completed 35 years of age cannot apply.

### **Intake of Students**

The intake of students to the Programme shall be in accordance with the permission from the University and MCI.

### **Duration of the study**

The Programme shall be for a period of 3 years.

### **Mode of selection**

Written test and Interview

## Method of training

The training of postgraduates for DM degree shall be of a residency pattern with graded responsibilities in the management and treatment of patients entrusted to his/her

care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journals review meetings, CPC and clinical meetings. Every candidate should be required to participate in the teaching programme of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. The students would be posted to allied speciality departments or institutions, if indicated.

### **Attendance, Progress and Conduct**

- A candidate pursuing the programme should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while doing the postgraduate programme.
- Each year shall be taken as a unit for the purpose of calculating attendance.
- Every DM student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentations, clinics and lectures during each year as academic term without prejudice to minimum 90% attendance of training period every year.
- Any student who fails to complete the programme in the manner stated above shall not be permitted to appear for the University Examinations.

### **Monitoring Progress of Studies**

1. **Work diary/ Log Book:** Every candidate shall maintain a work diary record (in the attached format) of his/her participation in the training programmes conducted by the department such as journal reviews, seminars and other teaching learning activities. Special mention may be made of the presentations by the candidate as well as details of clinical or diagnostic/ therapeutic procedures, conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.
2. **Periodic tests:-** The concerned department would conduct tests every six months; annual tests would be conducted at the end of first year and the other at the end of second year. The final test may be held three months before the final examination. The tests would include written papers, practicals/ clinicals and for viva voce. Records and marks obtained in such tests will be maintained by the head of the department and sent to the university, when called for.

### **3. Dissertation**

- The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

- Every candidate shall submit to the Registrar (Academic) of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within three months from the date of commencement of the programme on or before the dates notified by the University. The synopsis shall be sent through the proper channel.
- Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.
- The dissertation should be written under the following headings:
 

1. Introduction	7. Conclusions
2. Aims or Objectives of study	8. Summary
3. Review of Literature	9. References
4. Material and Methods	10. Tables
5. Results	11. Annexures
6. Discussion	

The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size,) and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation), six months before final examination or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

**Guide:** The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per Medical Council Of India Minimum Qualifications for Teachers in Medical Institutions Regulations. Teachers in a medical college / institution having a total of eight years teaching experience out of which at least five years teaching experience as Lecturer or Assistant Professor are recognized post graduate teachers.

## Schedule of examination

The examination for D.M programme shall be held at the end of three academic years. The university shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

The examination shall consist of theory, clinical/practical and viva voce examination.

**Theory (written examination):** The theory examination shall consist of three question papers, each of three hours duration. Each paper shall carry 100 marks. Out of the three papers, one paper will be on basic sciences as applied to Nephrology. Recent advances may be asked in any or all the papers.

**Practical /Clinical Examination:**

Practical examination /Clinical examination should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine one long case, two short cases and take part in ward rounds.

The maximum marks for Practical/ Clinical examination shall be 150.

**Viva Voce:** Viva Voce examination shall aim at assessing thoroughly the depth of knowledge logical reasoning, confidence and oral communication skills. The maximum marks shall be 50.

**Examiners:** There shall be at least four examiners. Out of them, two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment, as an examiner shall be as laid down by the Medical Council Of India.

**Criteria for declaring as pass in University Examination:** A candidate shall secure not less than 50% marks in each head, which shall include (A) Theory, (B) practical including clinical and viva voce examination.

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fees to the Registrar.

**Declaration of Distinction:** A successful candidate passing the University examination will be declared to have passed the examination with First Class if he scores 65% marks or above (aggregate); the candidate would be declared to have passed with distinction, if the grand total aggregate marks are 75 percent or above.

**Number of Candidates per day.** The maximum number of candidates for practical/clinical and viva-voce examination per day shall be three.

**Courses:**

**Course I Basic science as applied to Nephrology (Code: DMNP1)**

CO1: Knowledge of anatomy and developmental biology of the kidney.

CO2: Knowledge of renal circulations, glomerular filtration, renal transport of various electrolytes and solutes, renal acidification mechanism, urine concentration and dilution etc.

CO3: Knowledge of control of body fluid components and Extra cellular Fluid Volume, Pathophysiology of fluids & electrolyte disorders, Pathophysiology of Edema Formation



CO4: Knowledge of the pathophysiology of renal diseases.

**Normal Renal Structure and Function:**

Anatomy of the Kidney

**Developmental Biology of the Kidney**

Biology of Renal Cells in Culture

Cell-Cell and Cell-Matrix Interactions

The Metabolic Basis of Solute Transport

The Molecular Basis of Solute Transport

The renal Circulations

Glomerular Filtration

Renal handling of water

**Renal transport of various electrolytes and solutes**

**Renal Acidification Mechanisms**

Cell Biology of Vasopressin Action

**Urine Concentration and Dilution**

Renal Handling of Organic Anions and Cations

Vasoactive agents, peptides and the kidney

Arachidonic Acid Metabolites and the Kidney

Control of body fluid components and Extra cellular Fluid Volume,  
Pathophysiology of fluids & electrolyte disorders, Pathophysiology of Edema  
Formation

Pathophysiology of Water Metabolism

**Course II Principles and Practice of Nephrology (Code: DMNP2)**

CO1: Knowledge of fluid and electrolyte disorders.

CO2: Knowledge of renal diseases.

CO3: Competency in intensive care in nephrology.

**Fluid and electrolyte disorders:**

Acid-Base Disorders

**Disorders of Sodium, Potassium Balance**

Disorders of Calcium, Magnesium, Urate and Phosphate Metabolism

**Disorders of water balance**

Drugs associated with renal failure

**Renal Diseases**

Epidemiology of renal disease and approach to a patient with renal disease

Renal disease and genetics

Laboratory Assessment of Kidney Disease: Clearance, Urinalysis and Kidney Biopsy

Interpretation of Urine Electrolyte and Acid-Base Parameters

Radiologic Assessment of the Kidney

Acute Renal Failure and chronic renal failure

**Primary Glomerular Diseases**

Secondary Glomerular Diseases

Tubulointerstitial Diseases  
**Urinary Tract Infection, Polynephritis, and Reflux Nephropathy**  
Disorders of the Renal Arteries and Veins  
**Micro vascular Diseases of the Kidney**  
**Management of non-urologic causes of total hematuria**  
Toxic Nephrology  
The Kidney and Hypertension in Pregnancy  
Inherited Disorders of the Renal Tubule  
Cystic Diseases of the Kidney  
Diabetic Nephropathy  
Nephrolithiasis  
Principles of renal transplant  
Urinary Tract Obstruction  
Renal Neoplasia  
**Glomerular diseases in the tropics**  
Renal diseases in children

### **Course III Clinical Nephrology and Dialysis (DMNP3)**

CO1: Competency to manage a patient with renal failure.  
CO2: Skill in procedures such as femoral, subclavian and internal jugular catheterisation.  
CO3: Skill in hemodialysis, PD catheter insertion, Plasmapheresis and CRRT.  
CO4: Skill in Kidney Biopsy.  
CO5: Skill in peritoneal dialysis.

#### **Management of a patient with Renal Failure**

Diuretics  
Antihypertensive Drugs  
**Specific Pharmacological Approaches to clinical renoprotection**  
**Nutritional therapy in renal disease**  
Erythropoetin Therapy in renal disease and renal failure  
Hemodialysis  
Management of anaphylaxis and hypotension during or post dialysis  
**Peritoneal Dialysis**  
**Intensive Care Nephrology**  
Extracorporeal Treatment of Poisoning  
Transplantation Immunobiology  
Post transplant care of patients  
Donor and Receptient Issues in Renal Transplantation  
Judicial use of antibiotics in post transplant patients  
Clinical Aspects of Renal Transplantation  
Prescribing Drugs in Renal Disease

### **Course IV Renal Tranplantation and Recent advances (Code: DMNP4)**

CO1: Competency to be a part of Renal Transplantation team.  
CO2: Knowledge of donor and recipient issues in renal transplantation.  
CO3: Uptodate knowledge about recent publications in nephrology.

CO4: Knowledge about the recent advances in the practice of the speciality.

**A detailed knowledge about Renal Transplantation including complications and team work. Knowledge on most recent publications and advancements in the field of Nephrology**

**Soft Skills (Code: DMNP5) – Elective Course**

CO1: Competency to conduct a clinical research.

CO2: Acquisition of pedagogical skills for students (MBBS, Specialities)

CO3: Ability to work as a member of a healthcare team.

CO4: Communication skills with patients, caregivers and colleagues including non medical staff and an understanding of economics in disease management.

CO5: Attitude to be a lifelong learner.

## SCHEME OF EXAMINATION

The examination shall consist of the following parts:

- A) Theory
- B) Clinical examination & Viva voce

### A) Theory:

**Marks: 100 X 4 papers=400 marks**

The theory examination shall consist of three papers of 100 marks each. Each paper in turn shall consist of two long questions of 20 marks each and six short questions of 10 marks each. All questions shall be compulsory. Each theory paper shall be for 3 hours.

- Paper I : Basic Sciences as applied to Nephrology**
- Paper II : Principles and practice of Nephrology**
- Paper III : Clinical Nephrology & Dialysis**
- Paper IV : Renal transplantation & Recent advances**

### B) Clinical examination:

**Total=300 marks**

**Part I : Clinical Cases ( 300 marks)**

- ◆ One long case : 150 marks
- ◆ Two short cases : 50 mark each (50x2=100 marks)

### Clinical cases

This segment shall carry a total of 300 marks (150 marks for the long case and 50 marks for each of the 2 short cases). The purpose of this segment of examination will be to assess the candidate's skill and competence in diagnosing the patient's disease and formulating a sound plan for management. In addition, the candidate's ability to elicit history, carry out the relevant physical examination, and present all these in a cohesive and logical order will also be assessed.

For this purpose, one long case and two short cases will be chosen. These will be representative of the variety of renal diseases with which patients commonly present to the hospital. All examiners through a process of consultation shall select the cases and reach a consensus on the probable diagnostic possibilities that can be considered on history and physical examination. If more than one candidate is appearing for the exam, all efforts shall be made to avoid more than one candidate getting the same set of cases.

The examiners shall do the marking for this segment independently, in order to give the candidate the fairest chance of success. The marks for each case shall be granted under the following headings: History 30%, Clinical findings 10%, diagnosis 10%, plan of investigations 10%, discussion of differential diagnosis & reasoning 20%, adequacy of response to questions & clarity 10%, management plans 10%.  
(Total: 100%)

### **Ward Rounds ( 50 marks)**

The marks for this segment shall be 50. This segment of the examination is intended to assess the candidate's ability to pick up everyday problems in the management of Nephrology patients. The candidate's ability to correlate the clinical symptoms of the patient with the different investigations, and the ability to suggest management measures will be assessed. The stress here will be on the candidate's ability to logically device the best option as well as to formulate alternatives. Ward rounds should include four patients. The history/ physical findings /investigations would be narrated to the candidate and he would be asked questions by the examiners.

### **Part III : Viva Voce (200 marks)**

This segment shall carry a total of 200 marks. This segment is meant to assess the candidate's overall understanding of Nephrology. In a sense, this segment will evaluate the candidate and assess whether the candidate fulfils the requirements of training, skill and competence as set out in the objective of the programme. This segment may also feature histopathology slides, radiographs and reports of diagnostic tests.

## **Programme Content**

1. The predominant programme related activity would involve working in the hospital outpatient department in patient wards, affiliated laboratories and diagnostic facilities.
2. Didactic teaching activities will include lectures, seminars, clinical presentations, journal clubs, and topic discussions.

3. Practical teaching and learning activities will involve case presentations, demonstrations, imaging, diagnostic and therapeutic procedures and such other related activities.
4. Additional teaching and learning activities will include:
  - ★ Visits to other Institution of excellence as and when needed.
  - ★ Visit to laboratories, diagnostic facilities, affiliated clinical units and other areas, as may be deemed necessary from time to time.
  - ★ Attending Continuing Education Programmes, Seminars, Conferences, and Workshop in furtherance of programme objectives.
  - ★ Presenting papers, Topics, Lectures, Posters and similar activities to peer groups in furtherance of the learning and objectives of the programme.

## Program syllabus

### **Normal Renal Structure and Function:**

1. Anatomy of the Kidney
2. Developmental Biology of the Kidney
3. Biology of Renal Cells in Culture
4. Cell-Cell and Cell-Matrix Interactions
5. The Metabolic Basis of Solute Transport
6. The Molecular Basis of Solute Transport
7. The renal Circulations
8. Glomerular Filtration
9. Renal handling of water
10. Renal transport of various electrolytes and solutes
11. Renal Acidification Mechanisms
12. Cell Biology of Vasopressin Action
13. Urine Concentration and Dilution
14. Renal Handling of Organic Anions and Cations
15. Vasoactive agents, peptides and the kidney
16. Arachidonic Acid Metabolites and the Kidney
17. Control of body fluid components and Extra cellular Fluid Volume, Pathophysiology of fluids & electrolyte disorders, Pathophysiology of Edema Formation
18. Pathophysiology of Water Metabolism

### **Fluid and electrolyte disorders:**

1. Acid-Base Disorders
2. Disorders of Sodium, Potassium Balance

3. Disorders of Calcium, Magnesium, Urate and Phosphate Metabolism
4. Disorders of water balance

### **Renal Diseases**

1. Epidemiology of renal disease and approach to a patient with renal disease
2. Laboratory Assessment of Kidney Disease: Clearance, Urinalysis and Kidney Biopsy
3. Interpretation of Urine Electrolyte and Acid-Base Parameters
4. Radiologic Assessment of the Kidney
5. Acute Renal Failure and chronic renal failure
6. Primary Glomerular Diseases
7. Secondary Glomerular Diseases
8. Tubulointerstitial Diseases
9. Urinary Tract Infection, Pyelonephritis, and Reflux Nephropathy
10. Disorders of the Renal Arteries and Veins
11. Micro vascular Diseases of the Kidney
12. Toxic Nephrology
13. The Kidney and Hypertension in Pregnancy
14. Inherited Disorders of the Renal Tubule
15. Cystic Diseases of the Kidney
16. Diabetic Nephropathy
17. Nephrolithiasis
18. Urinary Tract Obstruction
19. Renal Neoplasia
20. Glomerular diseases in the tropics
21. Renal diseases in children

### **Pathophysiology of Renal Disease**

1. Renal and systemic Manifestations of Glomerular Disease
2. Adaptation to Nephron Loss
3. Vascular Wall in Hypertension
4. Essential Hypertension
5. Renovascular Hypertension and Ischemic Nephropathy
6. Hypertension and Renal Disease
7. Pathophysiology of Uremia
8. Hematologic Consequences of Renal Failure
9. Cardiovascular aspects of Chronic kidney Disease
10. Neurological Complications of Renal Insufficiency
11. Renal Osteodystrophy
12. Effects of Ageing on Renal Function and Disease
13. Renal function in the newborn infant and children

### **Management of a patient with Renal Failure**

1. Diuretics

2. Antihypertensive Drugs
3. Specific Pharmacological Approaches to clinical renoprotection
4. Nutritional therapy in renal disease
5. Erythropoetin Therapy in renal disease and renal failure
6. Hemodialysis
7. Peritoneal Dialysis
8. Intensive Care Nephrology
9. Extracorporeal Treatment of Poisoning
10. Transplantation Immunobiology
11. Donor and Receptient Issues in Renal Transplantation
12. Clinical Aspects of Renal Transplantation
13. Prescribing Drugs in Renal Disease

**List of procedures to be performed**

Procedure	Under Supervision	Independently
Femoral catheterisation	10	20
Subclavian and Internal jugular Catheterisation	10	20
Hemodialysis	10	30
PD Catheter insertion	3	5
Plasmapheresis	3	5
CRRT	3	5
Kidney biopsy	10	20

**Schedule of Departmental teaching Activities**

**Topic Discussion (Basic Sciences related to Nephrology)**

**Topic Discussion (General Nephrology)**

**Topic Discussion (Drugs)**

**Topic Discussion (Dialysis)**

**Topic Discussion (Transplantation)**

**Seminar**

**Journal club**

**Nephro-Pathology meeting**

**Nephro- Urology seminars**

**Case presentation**

**Ward Rounds**

**Consultations**

### **Orientation to information**

#### **1. Library**

The postgraduate students need to become familiar with the books, periodicals, and other publications pertaining to Nephrology that are available in the Institution. A list of such books will be on record in the department. In addition to this, department will develop and maintain *Departmental Library*, which will contain highly specialized books and publications from which the postgraduate can benefit.

#### **2. Research**

The component of research shall be promoted by encouraging candidates to undertake projects during the first two years of their programme.

This objective may be achieved either through an intramural programme or by enrolling postgraduates in an extramural programme providing the necessary training.

#### **3. Monitoring of Teaching/ Learning Activities**

<b><i>Activity</i></b>	<b><i>Periodicity of Assessment</i></b>	<b><i>Method</i></b>
Journal clubs	Monthly	Faculty and Peer review
Seminars	Monthly	Faculty and Peer review
Theory Knowledge	Six monthly	Written tests
Clinical performance	Six monthly	Clinical exam
Procedures	Six monthly	Log book
Research & Presentation	Six monthly	Logbook & Faculty peer view



**TEXT BOOKS FOR REFERENCE**

The following textbooks are recommended for reference:

1	Brenner & Rector's The Kidney Vol.1 & Vol.2	Brenner, Barry M etal
2	Critical Care Nephrology	Ronco, Claudio
3	Comprehensive Clinical Nephrology	Johnson, Richard J
4	Diseases of the Kidney Vol.1, 2 & 3	Schrier, Robert W
5	Heptinstall's Pathology of the Kidney Vol.1 & 2	Jennette, J Charles
6	Oxford Textbook of Clinical Nephrology Vol.1, 2 & 3	Davison, Alex M
7	Renal Physiology	Vander, Arthur J
8	Kidney Disease in Primary Care	Mandal, Anil K
9	Therapy in Nephrology and Hypertension: Companion to Brenner and Rector's The Kidney	Brady, Hugh R
10	Kidney Transplantation: Principles and Practice	Morris, Peter J
11	Interpretation of Renal Biopsies	Chitale, Arun
12	Recent Advances in Nephrology	
13	Review of Hemodialysis for Nurses and Dialysis Personnel	Gutch, C F
14	Clinical Dialysis	Nissenson, Allen R
15	Replacement of Renal Function by Dialysis	Jacobs, C
16	Textbook of Peritoneal Dialysis	Gokal, R
17	Principles and Practice of Dialysis	Henrich, William L
18	Manual of Nephrology	Schrier, Robert W
19	Workshops in Fluid and Electrolyte Disorders	Szerlip, Harold M
20	Handbook of Dialysis	Daugirdas, John T
21	Nephrology and Urology in the Aged Patient	Oreopoulos, D G
22	Clinical Physiology of Acid-Base and Electrolyte Disorders	Rose, Burton David
23	Fluid, Electrolyte, and Acid-Base Physiology : A Problem -Based Approach	Halperin, Mitchell L
24	The Spectrum of Renal Osteodystrophy	Drueke, Tilman B
25	Sepsis and Multiple Organ Dysfunction	Deitch, Edwin A
26	The Yearbook of Nephrology & Hypertension	
27	Kopple and Massry's Nutritional Management of Renal Disease	Kopple, Joel D
28	Manual of Hypertension	Mancia, Giuseppe
29	Hypertension:An International Monograph	Anand, Paul M
30	Hypertension	Egan, Brent M
31		
32	Renal Pathophysiology- The Essentials	Rose, Burton David
33	Kaplan's Clinical Hypertension	Kaplan
34	Hypertension Principles and Practice	Battegay
35	Diagnostic Atlas of Renal Pathology	Fogo
36	Primer on Kidney Diseases	Greenberg
37	Transplantation	Forsythe
38	Imaging and Urodynamics of the Urinary Tract	Patel

39	Intensive Care Nephrology	Murray
40	Medical Management of Kidney Transplantation	Weir
41	Atlas of Hypertension	Hollenberg
42	Nephrology Secrets	Hrick
43	Hyperperntention Secrets	Harik
44	Pediatric Nephrology and Urology	Kaplan
45	Paediatric Nephrology	Edelmann

## List of Recommended Journals

- ❖ Kidney International
- ❖ American Journal of Kidney Diseases
- ❖ Nephrology, Dialysis & Transplantation
- ❖ Transplantation
- ❖ Dialysis & Transplantation
- ❖ Current Opinion in Nephrology & Hypertension
- ❖ New England Journal of Medicine
- ❖ Indian Journal of Nephrology
- ❖ Indian Journal of Critical Care Medicine
- ❖ Journal of Association of Physicians of India
- ❖ Journal of American Society of Nephrology

### Log Book for DM Nephrology

Name of candidate :

Date of joining :

Period of the programme :

Name of the Institution :

Name of the Department :

I hereby state that this is a true record of the teaching-learning activities and procedures done by me (under supervision and independently) during my DM programme.

Date:

Signature of the candidate

May be accepted by the University.

Signature of the Head of Dept.

Seal:

**Academic activities attended**

<i>Date</i>	<i>Topics</i>	<i>Speaker</i>

Signature of the student

Signature of the HOD

**Academic presentations made by the candidate**

Date	Topic	Type of presentation Journal club/Seminar/ Topic presentation/ case Presentation/ UG teaching	Assessment

Signature of the student

Signature of the HOD

**LIST OF PROCEDURES DONE BY CANDIDATE**

**1.Femoral Catheterization**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:

**2.Subclavian & Internal Jugular Catheterization**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:


**3. Hemodialysis**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:

**4. Peritoneal dialysis catheter insertion**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:


**5. Plasmapheresis**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:

**6. CRRT**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:


**7. Kidney Biopsy**

*Done under supervision*

Date	Name of the patient	Hospital No:

*Done Independently*

Date	Name of the patient	Hospital No:

Signature of the student

Signature of the HOD

