



AMRITA

VISHWA VIDYAPEETHAM

A Multi Campus University with 'A' Grade Accreditation by

AMRITA SCHOOL OF MEDICINE

Amrita Centre for Allied Health Sciences

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PROGRAM

MSc Dialysis Therapy

(Revised with effect from 2017-2018 onwards)



A Super Speciality Tertiary Care Hospital Accredited by ISO 9001-2008, NABL &

Our Chancellor



SPIRITUAL PRINCIPLES IN EDUCATION

“In the gurukulas of ancient rishis, when the master spoke it was love that spoke; and at the receiving end disciple absorbed of nothing but love. Because of their love for their Master, the disciples’ hearts were like a fertile field, ready to receive the knowledge imparted by the Master. Love given and love received. Love made them open to each other. True giving and receiving take place where love is present. Real listening and ‘sraddha’ is possible only where there is love, otherwise the listener will be closed. If you are closed you will be easily dominated by anger and resentment, and nothing can enter into you”.

“Satguru Mata Amritanandamayi Devi”

Introducing AIMS

India is the second most populous nation on earth. This means that India's health problems are the world's health problems. And by the numbers, these problems are staggering 41 million cases of diabetes, nearly half the world's blind population, and 60% of the world's incidences of heart disease. But behind the numbers are human beings, and we believe that every human being has a right to high-quality healthcare.

Since opening its doors in 1998, AIMS, our 1,200 bed tertiary care hospital in Kochi, Kerala, has provided more than 4 billion rupees worth of charitable medical care; more than 3 million patients received completely free treatment. AIMS offers sophisticated and compassionate care in a serene and beautiful atmosphere, and is recognized as one of the premier hospitals in South Asia. Our commitment to serving the poor has attracted a dedicated team of highly qualified medical professionals from around the world.

The Amrita Institute of Medical Sciences is the adjunct to the term "New Universalism" coined by the World Health Organization. This massive healthcare infrastructure with over 3,330,000 sq. ft. of built-up area spread over 125 acres of land, supports a daily patient volume of about 3000 outpatients with 95 percent inpatient occupancy. Annual patient turnover touches an incredible figure of almost 800,000 outpatients and nearly 50,000 inpatients. There are 12 super specialty departments, 45 other departments, 4500 support staff and 670 faculty members.

With extensive facilities comprising 28 modern operating theatres, 230 equipped intensive-care beds, a fully computerized and networked Hospital Information System (HIS), a fully digital radiology department, 17 NABL accredited clinical laboratories and a 24/7 telemedicine service, AIMS offers a total and comprehensive healthcare solution comparable to the best hospitals in the world. The AIMS team comprises physicians, surgeons and other healthcare professionals of the highest caliber and experience.

AIMS features one of the most advanced hospital computer networks in India. The network supports more than 2000 computers and has computerized nearly every aspect of patient care including all patient information, lab testing and radiological imaging. A PET (Positron Emitting Tomography) CT scanner, the first of its kind in the state of Kerala and which is extremely useful for early detection of cancer, has been installed in AIMS and was inaugurated in July 2009 by Dr. A. P. J. Abdul Kalam, former President of India. The most recent addition is a 3 Tesla Silent MRI.

The educational institutions of Amrita Vishwa Vidya Peetham, a University established under section 3 of UGC Act 1956, has at its Health Sciences Campus in Kochi, the Amrita School of Medicine, the Amrita Centre for Nanosciences, the Amrita School of Dentistry, the Amrita College of Nursing, and the Amrita School of Pharmacy, committed to being centres of excellence providing value-based medical education, where the highest human qualities of compassion, dedication, purity and service are instilled in the youth. Amrita School of Ayurveda is located at Amritapuri, in the district of Kollam. Amrita University strives to help all students attain the competence and character to humbly serve humanity in accordance with the highest principles and standards of the healthcare profession.

Table of Contents
Part I – Rules and Regulations

SI No	Contents	Page No.
I	Post Graduate Programs	
	1. Details of Post Graduate Courses	6
	2. Medium of Instruction	7
II	3. Eligibility	7
	General Rules	
	1. Duration of the course	7
	2. Discontinuation of Studies	7
III	3. Educational Methodology	7
	4. Academic Calendar	8
	Examination Regulations	
	1. Attendance	9
	2. Internal Assessment	9
	3. University Examination	10
	4. Eligibility to appear for University Examination	11
5. Valuation of Theory – Written Paper	11	
IV	6. Supplementary Examination	11
	7. Rules regarding Carryover subjects	12
V	Criteria for Pass in University Examination – Regulations	
	1. Eligibility criteria for pass in University Examinations	12
VI	2. Evaluation and Grade	12
	Internship	
VII	1. Eligibility for Internship – Regulations	13
	2. Attendance and leave details during Internship	13
VIII	General considerations and Teaching / Learning Approach	13

Part I

Rules and Regulations

I. Post Graduate Programmes (Master of Sciences)

1. Details of Post Graduate Courses :			
Sl. No.	Course	Duration	Eligibility for admission to the course
1	Medical Laboratory Technology (MLT)	2 years	Pass in B.Sc MLT (4 year regular courses only)
2	Neuro-Electro Physiology	3years + 6 months Internship	First Class in B.Sc with Physics as main subsidiary subject (OR) B.Sc Allied health sciences
3	Swallowing Disorders and Therapy	2 years	BASLP
4	Clinical Research		MBBS.BDS/BAMS/BHMS/B.Pharm/B.Sc Allied Health Sciences/B.Sc Biotechnology/B.Sc Nursing/B.Sc in any Life Sciences
5	Biostatistics		Graduates in Statistics/Mathematics with paper in Statistics
6	Respiratory Therapy		B.Sc Respiratory Therapy
7	M.Sc Diabetes Sciences		B.Sc Diabetes Sciences
8	M.Sc Cardiovascular Technology		B.Sc Cardiovascular Technology
9	M.Sc Trauma and Critical Care		B.Sc Emergency Medical Technology, B.Sc Respiratory Therapy, B.Sc Physician Assistant, B.Sc Anaesthesia Technology
10	M.Sc Physician Assistant – Medical Oncology		B.Sc Physician Assistant
11	M.Sc Dialysis Therapy		B.Sc Dialysis Therapy

Program Outcomes (PO)

1. PO1: Through knowledge on the subject.
2. PO2: Effective communication skills.
3. PO3: Knowledge in professional ethics.
4. PO4: Leadership qualities and team work.
5. PO5: Problem Analysis and solving skills.
6. PO6: Detailed knowledge on research methodology.
7. PO7: Higher Technical skills and competencies.

8. PO8: Specilization in the subject
9. PO9: Employability in various sectors.
10. PO10: Employability in higher positions

Program Specific Outcomes (PSO)

1. POS3: Perform hemodialysis, peritoneal dialysis, continuous renal replacement therapies and plasmapheresis and advanced procedures in dialysis unit
2. POS4: Detailed knowledge to Handle the equipments used for dialysis and water treatment plant and do their day to day maintenance.
3. PSO5: Training to become a consultant to manage complications that may occur during the procedures mentioned above.

I.2. Medium of Instruction:

English shall be the medium of instruction for all subjects of study and for examinations.

II.3. Eligibility:

Essential qualifications for eligibility are mentioned under clause No. I.

II. General Rules:

Admissions to the courses will be governed by the conditions laid down by the University from time to time and as published in the Regulations for admissions each year.

I.1. Duration of the Course

Duration details are mentioned under clause No.I of this booklet.

Duration of the course	: Mentioned under clause No. I
Weeks available per year	: 52 weeks
Vacation / holidays	: 5 weeks (2 weeks vacation + 3 weeks calendar holidays)
Examination (including preparatory)	: 6 weeks
Extra curricular activities	: 2 weeks
Weeks available	: 39 weeks
Hours per week	: 40 hours
Hours available per academic year	: 1560 (39 weeks x 40 hours)

Internship wherever specified are integral part of the course and needs to be done in Amrita Institute of Medical Sciences, Centre for Allied Health Sciences, Kochi itself.

II.2. Discontinuation of studies

Rules for discontinuation of studies during the course period will be those decided by the Chairman /Admissions, Centre for Allied Health Sciences, and Published in the "Terms and Conditions" every year.

II.3. Educational Methodology

Learning occurs by attending didactic lectures, as part of regular work, from co-workers and senior faculty, through training offered in the workplace, through reading or other forms of self-study, using materials available through work, using materials obtained through a professional association or union, using materials obtained on students own initiative, during working hours at no cost to the student.

II.4. Academic Calendar

Annual Scheme

FIRST YEAR

Commencement of classes – August
Sessional exam – March
University exam (with practical) – 15 June - 15 July

SECOND YEAR

Commencement of classes – August
Sessional exam – March
University exam (with practical) – 15 June - 15 July

III. Examination Regulations:

III.1. Attendance: 80% of attendance (physical presence) is mandatory. Medical leave or other types of sanctioned leaves will not be counted as physi-

cal presence. For those who possess a minimum of 75% attendance, deficiency up to 5% may be condoned on medical or other genuine grounds by the Principal at his sole discretion and as per the recommendation of the Heads of Departments concerned. Students are allowed such condonation only once for entire course of study. Condonation fee as decided by the Principal has to be paid. Attendance will be counted from the date of commencement of the session to the last day of the final examination in each subject.

III.2. Internal Assessment:

- 1. Regular periodic assessment shall be conducted throughout the course. At least two sessional examinations in theory and preferably two practical examinations should be conducted in each subject. The model examination should be of the same pattern of the University Examination. Average of the two examinations and the marks obtained in assignments / oral / viva / practicals also shall be taken to calculate the internal assessment.**
- 2. A candidate should secure a minimum of 35% marks in the internal assessment in each subject (separately in theory and practical) to be eligible to appear for the University examination.**
- 3. The internal assessment will be done by the department twice during the course period in a gap of not more than six months and final model exam which will be the same pattern of university examination as third sessional examination.**
4. Each student should maintain a logbook and record the procedures they do and the work patterns they are undergoing. It shall be based on periodical assessment, evaluation of student assignment, preparation for seminar, clinical case presentation, assessment of candidate's performance in the sessional examinations, routine clinical works, logbook and record keeping etc.
5. Day to day assessment will be given importance during internal assessment, Weightage for internal assessment shall be 20% of the total marks in each subject.

6. Sessional examination as mentioned above and the marks will be conducted and secured by the students along with their attendance details shall be forwarded to the Principal Third sessional examinations (model exam) shall be held three to four weeks prior to the University Examination and the report shall be made available to the Principal ten days prior to the commencement of the university examination.

III.3. University Examinations:

- University Examination shall be conducted at the end of every academic year.
- A candidate who satisfies the requirement of attendance, internal assessment marks, as stipulated by the University shall be eligible to appear for the University Examination.
- One academic year will be twelve months including the days of the University Examination. Year will be counted from the date of commencement of classes which will include the inauguration day.
- The minimum pass for internal assessment is 35% and for the University Examination is 45%. However the student should score a total of 50% (adding the internal and external examination) to pass in each subject (separately for theory and practical)
- If a candidate fails in either theory or practical paper, he/she has to re-appear for both the papers (theory and practical)
- Maximum number of attempts permitted for each paper is five (5) including the first attempt.
- The maximum period to complete the course shall not exceed 6 years.
- All practical examinations will be conducted in the respective clinical areas.
- Number of candidates for practical examination should be maximum 12 to 15 per day
- One internal and external examiner should jointly conduct the theory evaluation and practical examination for each student during the final year.

III.4. Eligibility to appear university Examination:

A student who has secured 35% marks for Internal Assessment is qualified to appear for University Examination provided he/she satisfies percentage of attendance requirement as already mentioned at the III (1) of the clause.

III.5. Valuation of Theory – Revaluation Papers:

1. Valuation work will be undertaken by the examiners in the premises of the Examination Control Division in the Health Sciences Campus.
2. There will be **Re-Valuation** for all the University examinations. Fees for re-valuation will be decided by the Principal from time to time.
3. Application for revaluation should be submitted within 5 days from date of result of examination declared and it should be submitted to the office with payment of fees as decided by the Principal.

III.6. Supplementary Examinations:

Every main University examination will be followed by a supplementary examination which will normally be held within four to six months from the date of completion of the main examination.

As stipulated under clause No. 2 under Internal Assessment, HOD will hold an internal examination three to four weeks prior to the date of the University Examination. Marks secured in the said examination or the ones secured in the internal examination held prior to the earlier University Examination whichever is more only will be taken for the purpose of internal assessment. HODs will send such details to the Principal ten days prior to the date of commencement of University examination.

Students who have not passed / cleared all or any subjects in the first University examination will be permitted to attend the second year classes and also eligible to appear for second year university examination along with first year supplementary examination. However, he / she can appear for the third (final) year university examination, only if he / she clear all the subjects in the first as well as in the second year examinations.

Same attendance and internal marks of the main examination will be considered for the supplementary examination, unless the HOD furnishes fresh internal marks and attendance after conducting fresh examination.

Students of supplementary batches are expected to prepare themselves for the University Examinations. No extra coaching is expected to be provided by the Institution. In case at any time the Institution has to provide extra coaching, students will be required to pay fees as fixed by the Principal for the said coaching.

III.7. Rules regarding carryover subjects:

A candidate will be permitted to continue the second and third year respectively of the course even if he/she has failed in the first or second year university examinations.

A candidate must have passed in all subjects to become eligible to undergo compulsory internship of one year, for the candidates who have not passed all the subjects the duration of the third year shall be extended until they become eligible to undergo compulsory internship.

IV. Criteria for Pass in University Examination - Regulations:

IV.1. Eligibility criteria for pass in University Examination:

In each of the subjects, a candidate must obtain 50% in aggregate for a pass and the details are as follows:

- A separate minimum of 35% for Internal Assessment
- 45% in Theory & 35% in Oral / Viva
- A separate minimum of 50% in aggregate for Practicals / Clinics (University Examinations)
- Overall 50% is the minimum pass in subject aggregate (University Theory + Viva / Oral + Practicals + Internal Assessment)

IV.2. Evaluation and Grade:

1. Minimum mark for pass shall be 50% in each of the theory and practical papers separately (including internal assessment) in all subjects.
2. A candidate who passes the examination in all subjects within aggregate of 50% marks and above and less than 65% shall be declared to have passed the examination in the second class.
3. A candidate who passes the examination in all subjects in the first attempt obtaining not less than 65% of the aggregate marks for all the three years shall be declared to have passed the examination with First Class.
4. A candidate who secures an aggregate of 75% or above marks is awarded distinction. A candidate who secures not less than 75% marks in any subject will be deemed to have passed the subject with distinction in that subject provided he / she passes the whole examination in the first attempt.
5. A candidate who takes more than one attempt in any subject and pass subsequently shall be ranked only in pass class.
6. A Candidate passing the entire course is placed in Second class / First class / Distinction based on the cumulative percentage of the aggregate marks of all the subjects in the I, II and III (Final) university examinations
7. Rank in the examination: - Aggregate marks of all three year regular examinations will be considered for awarding rank for the B.Sc Graduate Examination. For the courses where the number of students are more than 15 rank will be calculated as under :
 - Topmost score will be declared as First Rank
 - Second to the topmost will be declared as Second Rank
 - Third to the topmost will be declared as Third Rank

v. Internship:

V.1. Eligibility for Internship - Regulations:

Wherever internship is a part of the curriculum (in clause No. I), students will have to do the internship in Amrita Institute of Medical Sciences itself. A candidate must have passed in all subjects to become eligible to undergo compulsory internship of six months. For the candidates who have not passed all the subjects the duration of the third/final year shall be extended until they become eligible to undergo compulsory internship.

“Internship has to be done continuously for a period provided in the syllabus except in extra ordinary circumstances where subject to the approval of the Principal the same may be done in not more than two parts with an interruption not exceeding six months. In any case Internship shall be completed within 18 months from the date of acquiring eligibility to the internship.

V.2. Attendance and leave details during Internship:

For 30 days of duty an intern will be eligible for one casual leave and one weekly off. A Student will become eligible to receive his/her degree only after completion of internship to the complete satisfaction of the Principal.

VI. General considerations and teaching / learning approach:

There must be enough experience to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching-learning process. Proper records of the work should be maintained which will form the basis for the students’ assessment and should be available to any agency that is required to do statutory inspection of the school of the course.

Research Activities:

The candidate has to maintain a record of research activities done by him/her and keeps a project record (to be submitted to the Principal before Part II examination).

Part II Syllabus

SYLLABUS
Schedule of theory sessions

PAPER I
Applied Basic Sciences DT21

CO1: Detailed knowledge in renal in applied anatomy

CO2: Detailed knowledge in renal physiology

CO3: Detailed knowledge in renal microbiology

CO4: Basic knowledge in applied pharmacology

CO5: Basics of research methodology

1. **Anatomy**
 - **Gross anatomy of kidneys, ureter, bladder and urethra** **1**
 - **Blood supply of kidneys** **1**
 - Structure of nephron and its different parts 1
 - Histology of the kidney 1
 - Heart and blood vessels 1
 - Respiratory system 1

2. **Physiology**
 - **Normal functions of kidneys** **1**
 - **Renal blood flow** **1**
 - Glomerular filtration rate (GFR) 1
 - Factors affecting GFR 1
 - Distribution of water in the body 1
 - Pathogenesis of Oedema 1
 - Vitamins 1
 - Cardiac Cycle , Maintenance of Blood Pressure 1

3. **Biochemistry**
 - Renal function tests 1
 - Serum electrolytes 1
 - Liver function tests 1
 - Potassium: Hypo and Hyperkalemia 1
 - Calcium: Hypo and Hypercalcemia 1
 - Blood sugar and its control 1
 - Acid Base balance 1

4. **Pharmacology**
 - **Modes of drug administration** **1**
 - **Half life of drugs** **1**
 - **Excretion of drugs** 1
 - Antihypertensive drugs 1
 - Diuretics 1
 - Heparin, Protamine 1

➤ Antiemetics	1
➤ Antipyretics	1
➤ Erythropoietin	1
➤ Vitamins	1
➤ Antibiotics	1
5. Microbiology	
➤ Disinfection & disinfectants	1
➤ Sterilization techniques	1
➤ Techniques of asepsis	1
➤ Ways of Contamination	1
➤ <u>Chemicals</u>	1
1. Formaldehyde	
2. Gluteraldehyde	
3. Sodium hypochlorite	
4. Hydrogen peroxide	
➤ Bacteria, Viruses, fungi –a brief introduction	1
➤ Prevention of infections	1
➤ Vaccination	1
6. Pathology	
➤ General aspects of the diseases of the kidney	1
➤ Chronic glomerulonephritis	1
➤ Chronic tubulo intestinal nephritis	1
➤ Diabetic Nephropathy	1
➤ Hypertensive nephrosclerosis	1
➤ Polycystic kidney disease	1
7. Basic Nursing	
➤ Monitoring of vital signals	1
➤ Care of an unconscious patient	1
➤ Care of a patient who develops seizures	1
➤ Care of a critically ill patient	1

PAPER II

Clinical Nephrology DT22

CO1: Detailed knowledge in renal diseases

CO2: Causes and pathology of renal diseases

CO3: Detailed knowledge of renal failures

CO4: Basics of dialysis, indications and contraindications

1. Oedema	1
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<ul style="list-style-type: none"> ➤ Causes - Peripheral oedema & pulmonary oedema ➤ Pathogenesis ➤ Treatment 	
2. Hypertension	2
<ul style="list-style-type: none"> ➤ Definition ➤ Causes of hypertension in renal failure ➤ Management 	
3. <u>Renal Failure</u>	
<u>Acute renal failure</u>	3
<ul style="list-style-type: none"> ➤ Definition ➤ Causes ➤ Classification ➤ Clinical features ➤ Complications ➤ Investigations ➤ Diet in renal failure ➤ Treatment ➤ Prognosis 	
 <u>Chronic Renal Failure</u>	5
<ul style="list-style-type: none"> ➤ Definition ➤ Causes- environmental, drugs, infective, as a long standing complication of other medical conditions ➤ Classification ➤ Clinical features including symptoms and signs ➤ Complications ➤ Investigations ➤ Diet in renal failure ➤ Frequency at which a patient needs to undergo further hemodialysis according to the condition of the patient ➤ Treatment ➤ Prognosis 	
4. Complications of Chronic Renal failure	
<ul style="list-style-type: none"> ➤ Anemia ➤ Encephalopathy ➤ Pericarditis ➤ Osteodystrophy ➤ Peripheral neuropathy ➤ Infections ➤ Psychological problems ➤ Metabolic acidosis ➤ Hyperkalemia ➤ Pulmonary Oedema 	 1 1 1 1 1 1 1 1 1 1

- | | | |
|-----------------------|----------------------|---|
| 5. Physical processes | in various therapies | 1 |
| ➤ Osmosis | | |
| ➤ Diffusion | | |
| ➤ Convection | | |
| ➤ Ultrafiltration | | |
| ➤ Adsorption | | |

Paper III

Principles and techniques of Hemodialysis DT34

CO1: Detailed knowledge in complications of dialysis

CO2: Mechanism of functioning and management of dialysis machine

CO3: Adequacy of dialysis

CO4: Patient preparation for dialysis

- | | | |
|--|---|----------|
| 1. Dialysis | | |
| ➤ History of hemodialysis, peritoneal dialysis | | 1 |
| ➤ Types of dialysis-HD, PD, CRRT, SLED | 1 | |
| ➤ Physical principles of dialysis- Diffusion,
Ultrafiltration, Convection | 2 | |
| ➤ Indications and contraindications for dialysis | | 1 |
| ➤ Asepsis in dialysis unit | 2 | |
| 2. Dialyser (Artificial Kidney) | | |
| ➤ Types of dialysers | | 1 |
| ➤ Materials used | 1 | |
| ➤ Biocompatibility | 1 | |
| ➤ Sterilization techniques | 1 | |
| ➤ Reprocessing technique & methods | 2 | |
| 3. Dialysis Machines | | |
| ➤ Parts of the machine | 1 | |
| ➤ Safety alarms | 1 | |
| ➤ Icons on the monitor | 1 | |
| ➤ Dialysate circuit | | 1 |
| ➤ Volumetric ultrafiltration | 1 | |
| ➤ Disinfection | 1 | |
| ➤ Maintenance | 1 | |
| 4. Dialysate | 2 | |
| ➤ Types of dialysate | | |
| ➤ Advantages & disadvantages of each | | |
| ➤ Composition | | |
| ➤ Preparation of bicarbonate | | |
| 5. Blood Tubings for HD | 2 | |
| ➤ Different parts , Priming , Reuse | | |

6. Water Treatment Unit	3	
➤ Need for water treatment		
➤ Filters-activated carbon, sand, microfilter		
➤ Water softners		
➤ Reverse osmosis		
➤ Checking adequacy & functioning of the plant		
➤ Disinfection		
➤ Maintenance		
7. Vascular Access for Dialysis		
➤ <u>Temporary access</u>	2	
➤ Types		
➤ Care of access		
➤ Preparation for access		
➤ Assisting for access		
➤ Complications		
➤ <u>Permanent</u>	2	
➤ Types of access		
➤ Care of access		
➤ Cannulation techniques		
➤ Complications		
➤ Assessment of access adequacy		
➤ <u>Recirculation</u>	3	
➤ Mechanisms		
➤ Measurement of vascular access recirculation		
➤ Cardiopulmonary recirculation		
8. Anticoagulation	3	
➤ Types of anticoagulation		
➤ Medications used		
➤ Indications and methods for heparin free dialysis		
➤ Heparin-Pharmacology		
➤ Protamine- Pharmacology		
9. Complications of hemodialysis		
➤ Vascular access related complications	1	
➤ Machine related complications		1
➤ Patient related complications		2
➤ Long terms complications of HD	1	
10. Dialysis Therapy		
➤ Asepsis during dialysis		2
➤ Initiation		1
➤ Monitoring	1	
➤ Termination	1	
➤ Disinfection of machines after dialysis	1	

11. Asepsis in Dialysis Unit		
➤ Techniques	1	
➤ Prevention of infections		1
➤ Vaccination	1	
➤ Disinfection	1	
12. Adequacy of hemodialysis	3	
➤ Assessment of adequacy		
➤ URR		
➤ Kt/V- different aspects		

Paper IV

Dialysis therapy and recent advances DT40

CO1: Basic knowledge in special dialysis

CO2: Dialysis in children and infants

CO3: Special dialysis procedures

1. CRRT	4	
➤ Types		
➤ Equipment		
➤ Different modalities		
➤ Indications for each modality		
➤ Techniques		
➤ Complications		
➤ SLED		
2. Peritoneal Dialysis		
➤ Types- Intermittent & Continuous	1	
➤ CAPD, CCPD, NIPD	1	
➤ Techniques	1	
➤ Disposables needed for IPD, CAPD	1	
➤ Complications		
➤ Assessment of peritoneal membrane characteristics (P.E.T)	1	
3. Plasmapheresis		
➤ Indications	2	
➤ Techniques		
➤ Complications		
➤ Procedure		
4. Hemoperfusion	2	
➤ Indications		
➤ Principles		
➤ Techniques		
➤ Complications		
5. Dialysis for poisonings	2	
➤ Indications		

- Methods & Techniques
6. HD in special situations
- In Pregnancy 1
 - In Children 1
 - In elderly 1
 - In Cardiac patients 1
 - In Liver disease patients 1
 - In Postoperative patients 1
 - In comatose patients 1

Schedule of Practical demonstration sessions:

HOURS	<u>TOPICS</u>	
	1. Effective communication with patients & relatives	3
	2. Indication for dialysis- absolute and relative	
	3. Asepsis in Dialysis Unit	3
	4. Checking vital signs-Pulse, blood pressure, respiration, temperature	2
	5. Disinfection of dialysis equipments	3
	6. Water treatment plant – Operation & Maintenance	5
	7. Nursing care of patients during treatment	3
	8. Connecting dialysers and blood tubings	1
	9. Priming of dialysers and blood tubings	1
	10. Checking Fibre bundle volume of dialysers	2
	11. Reuse of hollow fibre kidney	3
	12. Reuse of blood tubings	1
	13. Care of temporary vascular access (IJC & FC)	3
	14. Care of AV fistula	2
	15. Evaluation of AV fistula	3
	16. Starting hemodialysis	2
	17. Monitoring during hemodialysis	3
	18. Closing hemodialysis	2
	19. Operation of hemodialysis machine	5
	20. Alarms on HD machine	5
	21. Anticoagulation during HD	2
	22. Performing heparin free dialysis	2
	23. Cannulation of AV fistula	3
	24. Operation and maintenance of CRRT machine	4
	25. Performing Continuous veno venous hemodialysis	5
	26. Performing Plasmapheresis	5
	27. Carrying out peritoneal dialysis	2
	28. Performing Peritoneal Equilibration test	3
	29. Preparation of bicarbonate dialysate	2
	30. Identification & Correction of safety alarms on HD machine	5
	31. Maintenance of HD machine	3

32. Care of an unconscious patient	3
33. Operation of cardiac monitor	3
34. Operation of syringe and infusion pump	2
35. Management of hypotension during HD	3
36. Care of immunocompromised patients	
37. Operation of ventilators	2
38. Management of allergic reactions during transfusion, including anaphylaxis	

ELECTIVE COURSE AND COURSE OUTCOME

MDIT 40 Soft Skills

CO1: Skill in conducting clinical research.

CO2: Attitude to be a lifelong learner.

CO3: Communication skills necessary in interacting with the patients, caregivers and colleagues. Values of Gender Sensitivity, positive attitude towards environment and sustainability.

CO4: Attitude to be a member of a healthcare team. Positive human values, including ethics and etiquette

CO5: Skill necessary to be a good communicator and teacher

SCHEME OF EXAMINATION

M.Sc Dialysis Therapy Degree Examination Distribution of Marks for each subject

Paper Code	Subject Name	University	Internal	Oral	Subject Total	Total	Aggregate
FIRST YEAR							1000
I	Paper I Applied Basic Sciences	100	20	30	150	300	
II	Paper II Clinical Nephrology	100	20	30	150		
SECOND YEAR							
III	Paper III Principles and techniques of Hemodialysis	100	20	30	150	700	
IV	Paper IV Dialysis therapy and recent advances	100	20	30	150		
V	Project	100	50	50	200		
VI	Practical +Viva (150 + 50)	100	50	50	200		

PATTERN OF QUESTION PAPERS

All the question paper shall be of standard type. Each theory paper will be of 3 hours duration and shall consist of ten questions carry equal mark with a maximum of 100 marks. Theory paper in all subjects will consist of ten questions of 10 marks each or two sub questions in a ten mark main question.

IMPORTANT TELEPHONE NUMBERS

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