

1	Name of Course	C. C. IN Dialysis Technician (W. E. F. 2015-16)																																															
2	Course Code	201231																																															
3	Max.No.of Students Per Batch	25 Students																																															
4	Duration	1 Year																																															
5	Type	Full Time																																															
6	No.Of Days / Week	6 Days																																															
7	No.Of Hours /Days	7 Hrs																																															
8	Space Required	Practical Lab = 200 Sq feet <u>Class Room = 200 Sq feet</u> TOTAL = 400 Sq feet 1) MOU with hospital having relevant facility is required 2) Distance between Hospital and Institute Should not be more than 10 Km.																																															
9	Minimum Entry Qualification	SSC Pass																																															
10	Objective Of Course	To provide skilled man power in Nephrology sector and for hospitals																																															
11	Employment Opportunity	Jobs can be available in private hospitals and Govt. hospitals as Dialysis Technician.																																															
12	Teacher's Qualification	Three Part Time C/H basis with Qualification. i) Degree/Diploma in Civil Engineering with 2 year Exp.in Water Treatment Plant. ii) Degree/Diploma in Mechanical / Electronics Biomedical with 1 year Exp.in repairing of Dialysis Machines. iii) MBBS / MD (Nephrologists) with 1 year Exp. in Kidney Care Centre. And iv) MSW in Health Care.																																															
13	Training System	Training System Per Week <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>12 Hours</td><td>30 Hours</td><td>42 Hours</td></tr></table>						Theory	Practical	Total	12 Hours	30 Hours	42 Hours																																				
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14	Exam. System	<table><tr><td>Sr. No.</td><td>Paper Code</td><td>Name of Subject</td><td>TH/PR</td><td>Hours</td><td>Max. Marks</td><td>Min. Marks</td></tr><tr><td>1</td><td>20123111</td><td>Principles of Dialysis</td><td>TH - I</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>2</td><td>20123112</td><td>Dialysis Technique</td><td>TH - II</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>3</td><td>20123121</td><td>Principles of Dialysis</td><td>PR - I</td><td>6 hrs</td><td>200</td><td>100</td></tr><tr><td>4</td><td>20123122</td><td>Dialysis Technique</td><td>PR - II</td><td>6 hrs</td><td>200</td><td>100</td></tr><tr><td></td><td></td><td>Total</td><td></td><td></td><td>600</td><td>270</td></tr></table>						Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	20123111	Principles of Dialysis	TH - I	3 hrs	100	35	2	20123112	Dialysis Technique	TH - II	3 hrs	100	35	3	20123121	Principles of Dialysis	PR - I	6 hrs	200	100	4	20123122	Dialysis Technique	PR - II	6 hrs	200	100			Total			600	270
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Theory - I - PRINCIPLES OF DIALYSIS

1. Introduction

Human Body introduction

Gen Nursing principles

Asepsis sterilization

Urinary System anatomy viz. Kidney size, shape, position

2. Physiology of kidney

Kidney function

3. Renal disorders

-acute renal failure

-chronic renal failure

-Obstructive uropathy

4. Communication skills

-Writing skills

-Reporting – oral

-Use of information management systems

5. Planning and scheduling

6. Review and analysis

-Auditing methods and tools

7. Assessing nutritional status – SGA rating, 24 hours dietary recall.

-Basics of nutrition counseling.

8. Psychosocial counseling of patients

-Recognition of severe depression, anxiety or suicidal tendency in patients.

Practical - I - PRINCIPLES OF DIALYSIS

1. Demonstration of general nursing skills
 - measurement of vitals
 - sample collection
 - taking ECG
 - monitoring condition of patient
 - measuring intake, output
 - infection control procedures – hand washing, wearing PPE,
 - handling instruments – syringe pump, cardiac monitors,
 - administration of medications – iv, oral, subcutaneous.
 - oxygen administration
2. Assessment of knowledge of Normal ranges of blood parameters,
Filling requisition for blood sample collection
Recognition of significance of laboratory reports, analysis and
diagnosing condition based on the reports.
3. Infection control measures and audits – filling audit sheet, best
practices
 - Machine related disinfection, surface cleaning.
 - Use and Wearing of PPE.
 - Viral infections in dialysis unit
 - Vaccination schedules.
4. Use of information technology
 - Presentation skills - preparing ppt, delivering presentation.
 - Basic computer skills, use of MS word, excel, powerpoint.
5. Dialysis scheduling.
6. Writing non conformances and reporting using various reporting
formats.
7. Nutrition needs assessment- SGA rating, 24 hours dietary recall
 - high calorie foods
 - high protein foods
 - high potassium foods
 - high sodium foods

Theory - II - DIALYSIS TECHNIQUE

1. Dialysis
Definition and principles of dialysis Types of dialysis
 A haemodialysis
 B peritoneal dialysis
2. Components of haemodialysis machines
Functions of each component
Dialysis machines
Disinfection of machines
Haemodialysis artificial kidney – types of dialysers.
Reprocess dialysers
Types of dialysis – acid/ bicarb
Measuring adequacy of dialysis.
3. Vascular access
Temporary
 -subclavian / jugular cannulation
 -femoral cannulation
 -permcath
Permanent
 -A V Fistula
 -A V graft
Care of vascular access
4. Common problems during haemodialysis
 A patient related –
 Febrile relation and chills and rigors
 Hypotension
 Hypocalcaemia Cramps
 Vomiting
 Oedema
 Orthopnea
 Hypertension
 Fluid over load
 B machine related-
 Hyponatremia/ hypernatremia
 Ultra filtration and its principles
 Fluid removal
 Mechanical failure
 Air embolism
 Dialysis disequilibrium

5. Medico legal consent for dialysis and procedure
Behavior in dialysis room and ethics
Relative's management
6. Vaccination of dialysis patients
Hepatitis B
Other
7. Water treatment
AAMI standard of water
Purification needs
Types of purifier and softener
RO system
De ionizer
Water quality and hardness check records
Operation and maintenance of water treatment plant
8. Commonly used drugs in dialysis room
Medical emergency drugs
Drugs for problems on dialysis
9. Anti –coagulation in dialysis
Use of anti-coagulants
Low heparin,
heparin free
Heparin substitutes
10. Intermittent Peritoneal dialysis Indications
Principles of peritoneal dialysis
Preparation of patient
Instrumentation
Procedure
Follow up
11. CAPD Preparation
Procedure
CAPD machines working
Principles
12. Record keeping in dialysis room
Appointment schedules
Learning to Act within the limits of your competence and authority

13. Follow infection control policies and procedures
Maintain a safe, healthy and secure environment
Principles of biomedical waste
14. Monitor and assure quality
Learning to Work effectively with others

Practical - II - DIALYSIS TECHNIQUE

1. Collect and assess the patient's chart and vitals
2. Manage dialysis machine set up and assemble the extracorporeal circuit
3. Prepare and position the patient for treatment
4. Connect patient to the dialysis machine
5. Monitor technical/clinical vitals during the treatment
6. Unhook patient from the machine
7. Record the treatment
8. Conduct pre and post dialysis evaluation
9. Maintain and disinfect the delivery system
10. Evaluate and prepare the access site for cannulation
11. Respond to dialysis related emergencies in patient and equipment
12. Reprocess dialyzers
13. Operate and maintain water treatment plant
14. Biomedical waste disposal methods
15. Instrumentation
16. Procedure
17. Patient record keeping in dialysis room
18. Disinfection of machines
19. Water quality and hardness check records Appointment schedules

Table viva

1. Filling quality records.
2. Instruments
3. Identifying the deficiency in system leading to poor quality.

MOU Hospital should have following facility

- 1) 4 Dialysis units required in a hospital with relevant equipments

Infrastructure and Tool, Equipment required to be available in Institute

Sr.No.	Name	Required Quantity
1	Clinical activities	1
2	Internet facility	1
3	Teaching aids – models, charts, videos.	As per requirement
4	Administrative office	1
5	Library for institute	1
6	One classroom with a capacity for 25 students	1
7	Common room for boys	1
8	Common room for girls	1
9	MOU with Hospital having relevant facility	As per requirement
10	Chair & Desk	25 Nos.
11	Projector	01 No.
12	Computer with accessories	02 No.
13	Reuse of dialyzers	As per requirement
14	Dialyzer size and efficiency	As per requirement
15	Membrane flux and beta-2-microglobulin amyloidosis	As per requirement
16	Membrane flux and outcome	As per requirement
17	Dialyzer	As per requirement
18	Water system	As per requirement
19	Stethoscopes	10
20	Cushcush speculum	05
21	Sims speculum	05
22	Tongue depressor	05
23	Scissors '7'	10
24	Scissors '5'	10
25	Thumb forceps – toothed	10
26	Thumb forceps – non toothed	10
27	Test tube holders	10
28	Cheatle forceps	10
29	Paracethesis sets	02
30	Towel clips	25
31	Kneehammer	05
32	Needle holder	25
33	Bar speculum	05
34	Artery forceps	10
35	Bandage roller (16 cm x 100 cm)	25
36	Suction tube 10cm	05
37	Blade with handle	25
38	Hypodermic Needles B.P. handle (pkt of 10)	25
39	Intradermal Needles (pkt. Of 10)	25
40	L.P. needles	25
41	C.D. set	25
42	B.P.Apparatus	02
43	Round Bodied anaroid	02
44	Inch tape	02
45	Torch light (with cells)	02
46	First aid box (big)	02
47	Procedure Follow up CAPD Preparation Procedure	As per requirement
48	CAPD machines working Principles	As per requirement
49	Record keeping in dialysis room Patient record keeping in dialysis room Disinfection machines	As per requirement
50	Water quality and hardness check records Appointment schedules	As per requirement
