

CLINICAL SPECIALITY -II  
**MEDICAL SURGICAL NURSING**  
*SUB SPECIALITY – NEPHRO-UROLOGY NURSING*

Total: 1110 Hours

Theory: 150 Hours

Practical: 960 Hours

**AIM:**

- This course is designed to assist students in developing expertise and in depth understanding in the field of Nephro and urological Nursing. It will help students to develop advanced skills for nursing intervention in various nephro and urological conditions. It will enable the student to function as nephro and urology nurse practitioner/specialist and provide quality care. It will further enable the student to function as educator, manager, and researcher in the field of nephro and urology nursing.

**OBJECTIVES:**

At the end of the course the students are able to:

- Appreciate trends and issues related to nephro and urological nursing.
- Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of nephro and urological conditions.
- Perform physical, psychosocial & spiritual assessment.
- Assist in various diagnostic, therapeutic and surgical interventions.
- Provide comprehensive nursing care to patients with nephro and urological conditions.
- Describe the various drugs used in nephro and urological conditions and nurses responsibility.
- Demonstrate skill in handling various equipments & gadgets used for patients with nephro and urological conditions.
- Appreciate team work & coordinate activities related to patient care.
- Practice infection control measures.
- Identify emergencies and complications & take appropriate measures.
- Assist patients and their family to cope with emotional distress, grief, anxiety and spiritual needs.
- Discuss the legal and ethical issues in nephro and urological nursing.
- Identify the sources of stress and manage burnout syndrome among health care providers.
- Appreciate the role of alternative system of medicine in the care of patient.
- Incorporate evidence based nursing practice and identify the areas of research in the field of nephro and urological nursing.
- Teach and supervise nurses and allied health workers.
- Design a layout of kidney transplant unit and dialysis unit.
- Develop standards of nephro-urological nursing practice.

**CONTENTS:**

**Unit I -Introduction:**

- Historical development: trends and issues in the field of nephro and urological nursing.
- Nephro and urological problems. Concepts, principles and nursing perspectives. Ethical and legal issues. Evidence based nursing and its application in nephro and urological nursing (to be incorporated in all the units).

**Unit II -Epidemiology:**

- Major health problems- urinary dysfunction, urinary tract infections, Glomerular disorders, obstructive disorders and other urinary disorders. Risk factors associated with nephro and urological conditions- Hereditary, Psychosocial factors, smoking, alcoholism, dietary habits, cultural and ethnic considerations. Health promotion, disease prevention, life style modification and its implications to nursing.
- Alternate system of medicine/complementary therapies

**Unit III -Review of anatomy and physiology of urinary system:**

- Embryology. Structure and functions. Renal circulation. Physiology of urine formation. Fluid and electrolyte balance. Acid base balance. Immunology specific to kidney.

**Unit IV -Assessment of diagnostic measures:**

- History taking. Physical assessment, psychosocial assessment. Common assessment abnormalities-dysurea, frequency, enuresis, urgency, hesitancy, hematuria, pain, retention, burning on urination, pneumaturia, incontinence, nocturia, polyurea, anuria, oliguria. Diagnostic tests-urine studies, blood chemistry, radiological procedures -KUB, IVP, nephrotomogram, retrograde pyelogram, renal arteriogram, renal ultrasound, CT scan, MRI, cystogram, renal scan, biopsy, endoscopy-cystoscopy, urodynamics studies- cystometrogram, urinary flow study, sphincter electromyography, voiding pressure flow study, videourodynamics, Whitaker study. Interpretation of diagnostic measures.
- Nurse's role in diagnostic tests.

**Unit V -Renal immunopathy / Immunopathology:**

- General Concept of immunopathology. Immune mechanism of glomerular vascular disease.
- Role of mediator systems in glomerular vascular disease.

**Unit VI -Urological Disorders and Nursing Management:**

- Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of: Urinary tract infections- pyelonephritis, lower urinary tract infections, Disorders for ureters, bladder and urethra Urinary tract infections. Urinary dysfunctions- urinary retention, urinary incontinence, urinary reflux, Bladder disorders- neoplasms, calculi, neurogenic bladder, trauma, congenital abnormalities. Benign prostrate hypertrophy (BPH.) Ureteral disorders: ureteritis, ureteral trauma, congenital: anomalies of ureters. Urethral disorders- tumours, trauma, and congenital anomalies of ureters.

**Unit VII -Glomerular disorders and nursing management:**

- Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of: Glomerularo-nephritis- chronic, acute nephrotic syndrome. Acute Renal failure and chronic renal failure. Renal calculi. Renal tumours-benign and malignant. Renal trauma. Renal abscess. Diabetic nephropathy. Vascular disorders. Renal tuberculosis. Polycystic. Congenital disorders. Hereditary renal disorders.

**Unit VIII -Management of Renal emergencies:**

- Anuria. Acute Renal failure, Poisoning. Trauma, Haematuria. Urine retention. Acute graft rejection.
- Nurse's role.

**Unit IX -Drugs used in urinary disorders:**

- Classification. Indications, contraindications, actions and effects, toxic effects. Role of nurse.

**Unit X -Dialysis:**

- Dialysis- Historical, types, Principles, goals. Hemodialysis- vascular access sites- temporary and permanent. Peritoneal dialysis. Dialysis Procedures- steps, equipments, maintenance. Role of nurse- pre dialysis, intra and post dialysis. Complications. Counseling and Patient education, Records and reports.

**Unit XI -Kidney transplantation:**

- Nursing management of a patient with Kidney transplantation: Kidney transplantations- a historical review. Immunology of graft rejections. The recipient of a renal transplant. Renal preservations. Human -Leucocytic Antigen (HLA) typing matching and cross matching in renal transplantation. Surgical techniques of renal transplantations. Chronic renal transplant rejection. Complication after KTP: Vascular and lymphatic, Urological, cardiovascular, liver and neurological, infectious complication. KTP in children and management of pediatric patient with KTP. KTP in developing countries. Results of KTP. Work up of donor and recipient for renal transplant. Psychological aspect of KTP and organ donations. Ethics in transplants, Cadaveric transplantation.

**Unit XII - Rehabilitation of patient with nephrological problems.**

- Risk factors and prevention. Rehabilitation of patients on dialysis and after kidney transplant. Rehabilitation of patients after urinary diversions. Family and patient teaching..

**Unit XIII -Pediatric urinary disorders:**

- Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology.
- Medical, surgical and nursing management of children with Renal Diseases -UTI, ureteral reflux, glomerulc nephritis, nephrotic syndrome infantile nephrosis, cystic kidneys, familial factors in renal diseases in childhood, Haemolytic uraemic syndrome. Benign recurrent haematuria, nephropathy, wilms' tumour.

**Unit XIV -Critical care units – dialysis, KTP unit:**

- Philosophy, aims and objectives. Policies, staffing pattern, design and physical plan of Dialysis and KTP units. Team approach, functions. Psychosocial aspects in relation to staff and clients of ICU, dialysis unit. In-service education. Ethical and legal issues.

**Unit XV -Quality assurance in nephrological nursing practice:**

- Role of advance practitioner in nephrological nursing. Professional practice standards. Quality control in nephrological nursing and Nursing audit.

**PRACTICAL:**

- **Procedures to be observed:** CT scan, MRI, Radiographic studies, Urodynamics, Hemo dialysis, Renal Surgeries.
- **Procedures to be assisted:** Blood transfusion, I.V. cannulation & therapy, Arterial Catheterization, Insertion of central line / CVP line, Connecting lines for dialysis, peritoneal dialysis, renal biopsy, Endoscopies- Bladder, urethra.
- **Procedures to be Performed :**Health assessment, Insertion of urethral and supra pubic catheters, Urine analysis, Catheterization, Peritoneal dialysis, Bladder irrigation, Care of ostomies, Care of urinary drainage, Bladder training, Care of vascular access, Setting up dialysis machine and starting, monitoring & closing dialysis, Procedures for prevention of infections: Hand washing, disinfection & sterilization surveillance, and fumigation universal precaution, Collection of specimen. Administration of drugs: IM, IV injection, IV cannulation & fixation of infusion pump, calculation of dosages, blood administration, monitoring fluid therapy, electrolyte imbalance. Nutritional need, diet therapy, patient education and Counseling.

**CLINICAL SPECIALITY- II**  
**MEDICAL SURGICAL NURSING**  
**SUB SPECIALITY-NEPHRO-UROLOGY NURSING**

<i>Unit No. &amp; Hours</i>	<i>Objectives</i>	<i>Contents with distributed Hours</i>						
I (5 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Understand the concepts and principles of nursing client with nephro-uro conditions. <b>Skill:</b> Practice principles of nursing while caring for these clients. <b>Attitude:</b> Provide evidence based nursing care.	<b>Introduction:</b> <ul style="list-style-type: none"> <li>• Historical development: trends and issues in the field of nephro and urological nursing.</li> <li>• Nephro and urological problems</li> <li>• Concepts, principles and nursing perspectives</li> <li>• Ethical and legal issues. (2 hrs)</li> <li>• Evidence based nursing and its application in nephro and urological nursing (to be incorporated in all the units) (3 hrs)</li> </ul>						
<b>Unit I : Introduction</b>								
Course Outcome		Program Outcome						
		Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Describe trends and issues in the field of nephro and urological nursing.		2	2	1	2	2	1	2
CO-2: Explain the nephro and urological problems.		2	2	2	2	2	2	3
CO-3: Explain concepts, principles and nursing perspectives with nephro-uro conditions.		2	2	2	2	2	2	3
CO-4: Understand ethical and legal issues.		2	2	2	2	2	2	2
CO-5: Apply evidence based nursing and its application in nephro and urological nursing.		2	2	2	2	2	2	3
II (5 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Describe major nephro-uro problems among populations. <b>Skill:</b> Identify the risk factors contributing to renal conditions. <b>Attitude:</b> Provide health education related to lifestyle modification and promotion of health to the clients & family.	<b>Epidemiology:</b> <ul style="list-style-type: none"> <li>• Major health problems- urinary dysfunction, urinary tract infections, Glomerular disorders, obstructive disorders and other urinary disorders.</li> <li>• Risk factors associated with nephro and urological conditions- Hereditary, Psychosocial factors, smoking, alcoholism, dietary habits, cultural and ethnic considerations.(3 hrs)</li> <li>• Health promotion, disease prevention, life style modification and its implications to nursing. (2 hrs)</li> </ul> Alternate system of medicine/complementary therapies						
<b>Unit II : Epidemiology</b>								
Course Outcome		Program Outcome						
		Clinician/	Professio	Communi	Leader	Lifelong	Critical	Researcher

	Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Identify the prevalence and risk factors of urinary dysfunction, urinary tract infections, glomerular disorders, obstructive disorders and other urinary disorders.	2	2	1	2	2	1	2
CO-2: Explain the risk factors associated with nephro and urological conditions like hereditary, psychosocial factors, smoking, alcoholism, dietary habits, cultural and ethnic considerations	2	2	2	2	2	2	3
CO-3: Describe the health promotion, disease prevention, life style modification and its implications to nursing	2	2	2	2	2	2	3
CO-4: Discuss about alternate system of medicine/complementary therapies	2	2	2	2	2	2	2

<b>III</b> (5 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Recall anatomy and physiology of urinary system. <b>Skill:</b> Identify fluid & electrolyte balance needs & provide care accordingly. <b>Attitude:</b> Appreciate anatomical and/or physiological deviations & its effects on quality of life.	<b>Review of anatomy and physiology of urinary system:</b> <ul style="list-style-type: none"> <li>• Embryology (1 hrs)</li> <li>• Structure and functions</li> <li>• Renal circulation</li> <li>• Physiology of urine formation</li> <li>• Fluid and electrolyte balance</li> <li>• Acid base balance (3 hrs)</li> <li>• Immunology specific to kidney (1 hrs)</li> </ul>
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**Unit III: Review of anatomy and physiology of urinary system**

Course Outcome	Program Outcome						
	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Describe about embryology of urinary system.	2	2	2	2	2	2	1
CO-2: Explain the structure and functions of organs of urinary system: kidneys, ureters, urinary bladder and urethra	2	2	2	2	2	2	1
CO-3: Identify the alternation of disease related to kidneys,	2	2	2	2	2	2	1

ureters, urinary bladder and urethra, and its application in clinical practice.							
CO-4: Describe about fluid and electrolyte balance, acid base balance.	2	2	2	2	2	2	1
CO-5: Discuss the immunology specific to kidney.	2	2	2	2	2	2	1

<p>IV (20 Hrs)</p>	<p>At the end of unit students are able to:</p> <p><b>Knowledge:</b> Explain the assessment of clients with urinary conditions.</p> <p><b>Skill:</b> Prepare the clients for various investigations. Collect specimen for different investigations. Interpret the reports of diagnostic tests. Assist &amp;/or carry various diagnostic procedures correctly. <b>Attitude:</b> provide adequate explanation and relieve anxiety of clients undergoing invasive diagnostic procedures.</p>	<p><b>Assessment of diagnostic measures:</b></p> <ul style="list-style-type: none"> <li>History taking.</li> <li>Physical assessment, psychological assessment</li> <li>Common assessment abnormalities-dysurea, frequency, enuresis, urgency, hesitancy, haematuria, pain, retention, burning on urination, pneumaturia, incontinence, nocturia, polyurea, anuria, oliguria. (5 hrs)</li> <li>Diagnostic tests-urine studies, blood chemistry, radiological procedures -KUB, IVP, nephrotomogram, retrograde pyelogram, renal arteriogram, Renal ultra sound, CT scan, MRI, cystogram, renal scan, biopsy, endoscopy-cystoscopy, urodynamics studies- cystometrogram, urinary flow study, sphincter electromyography, voiding pressure flow study, videourodynamics, Whitaker study. (10 hrs)</li> <li>Interpretation of diagnostic measures. (3 hrs)</li> <li>Nurse's role in diagnostic tests.(2 hrs)</li> </ul>
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**Unit IV: Assessment of diagnostic measures**

Course Outcome	Program Outcome						
	Clinician/ Nurse educator	Professional	Communica tor	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain and demonstrate the history taking	3	3	3	3	3	3	2
CO-2: Perform the physical assessment, psychological assessment Common assessment abnormalities	3	3	3	3	3	3	2
CO-3: Prepare the clients for various diagnostic tests.	3	3	3	3	3	3	2
CO-4: Interpret the reports of diagnostic measures.	2	2	2	2	2	2	1
CO-5: Perform the nurse's role in diagnostic tests.	3	3	3	3	3	3	1

<p>V (5 Hrs)</p>	<p>At the end of unit students are able to:</p> <p><b>Knowledge:</b> Explain the immune mechanism of glomerular vascular diseases.</p> <p><b>Skill:</b> Identify the role of mediator</p>	<p><b>Renal immunopathy/ Immunopathology:</b></p> <ul style="list-style-type: none"> <li>General Concept of immunopathology (1 hr)</li> <li>Immune mechanism of glomerular vascular disease</li> <li>Role of mediator systems in glomerular vascular disease. (4 hrs)</li> </ul>
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	systems in glomerular vascular diseases and the symptomatology related to it. <b>Attitude:</b> Educate the clients about normal immune response and the precautions in autoimmune diseases.	
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### Unit V: Renal immunopathy/ Immunopathology

Course Outcome	Program Outcome						
	Clinician/ Nurse educator	Professi onal	Communic ator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain the immune mechanism of glomerular vascular diseases	2	2	2	1	2	1	1
CO-2: Identify the role of mediator systems in glomerular vascular diseases and the symptomatology related to it.	2	2	2	2	2	2	1
CO-3: Explain the clients about normal immune response and the precautions in autoimmune diseases.	2	2	2	2	2	2	1

VI (15 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Describe different disorders of ureters, bladder, and urethra and their medical, surgical and nursing management. <b>Skill:</b> Identify the clients with disorders of ureters, bladder and urethra and render efficient care to them. <b>Attitude:</b> Provide relevant health education related to diet, life style modifications and prevention of recurrence to the clients suffering from urological disorders.	<b>Urological Disorders and Nursing Management: Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of:</b> <ul style="list-style-type: none"> <li>• Urinary tract infections- pyelonephritis, lower urinary tract infections,</li> <li>• Disorders for ureters, bladder and urethra</li> <li>• Urinary tract infections-</li> <li>• Urinary dysfunctions- urinary retention, urinary incontinence, urinary reflux, (7 hrs)</li> <li>• Bladder disorders- neoplasms, calculi, neurogenic bladder, trauma, Congenital abnormalities</li> <li>• Benign prostrate hypertrophy (BPH)</li> <li>• Ureteral disorders: ureteritis, ureteral trauma, congenital: anomalies of ureters</li> <li>• Urethral disorders- tumours, trauma, (6 hrs)</li> <li>• Congenital anomalies of ureters. (2 Hrs)</li> </ul>
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### Unit VI: Urological Disorders and Nursing Management

Course Outcome	Program Outcome						
	Clinician/ Nurse educator	Professional	Communica tor	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain etiology, clinical manifestations, diagnosis, and	3	3	3	3	2	2	3

prognosis, and related pathophysiology, medical, surgical and nursing management of urological disorders.							
CO-2: Identify the clients with disorders of ureters, bladder and urethra and render efficient care to them.	3	3	3	3	2	2	3
CO-3: Give relevant health education related to diet, life style modifications and prevention of recurrence to the clients suffering from urological disorders.	3	3	3	3	2	2	3

VII (25 Hrs)	<p>At the end of unit students are able to:</p> <p><b>Knowledge:</b> Understand and explain glomerular disorders &amp; its medical, surgical &amp; nursing management.</p> <p><b>Skill:</b> Identify the signs and symptoms of different glomerular disorders and render specific care to these clients.</p> <p><b>Attitude:</b> Help client modify their diet, life style, to prevent recurrence and promote renal health.</p>	<p><b>Glomerular disorders and nursing management</b></p> <ul style="list-style-type: none"> <li>• Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of</li> <li>• Glomerulo-nephritis- chronic, acute, nephritic syndrome (3 hrs)</li> <li>• Acute Renal failure and chronic renal failure. (2 hrs)</li> <li>• Renal calculi (3 hrs)</li> <li>• Renal tumors-benign and malignant. (2 hrs)</li> <li>• Renal trauma. (1 hr)</li> <li>• Renal abscess. (1 hr)</li> <li>• Diabetic nephropathy (2 hrs)</li> <li>• Vascular disorders (3 hrs)</li> <li>• Renal tuberculosis (2 hrs)</li> <li>• Polycystic (2 hrs)</li> <li>• Congenital disorder's (2 hrs)</li> <li>• Hereditary renal disorders. (2 hrs)</li> </ul>
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**Unit VII: Glomerular disorders and nursing management**

Course Outcome	Program Outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of glomerular disorders.	3	3	3	3	2	2	3
CO-2: Identify the signs and symptoms of different glomerular disorders and render specific care to these	3	3	3	3	2	2	3

clients.							
CO-3: Demonstrate and prepare the client modify their diet, life style, to prevent recurrence and promote renal health.	3	3	3	3	2	2	3

VIII (10 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Discuss renal emergencies & its management. <b>Skill:</b> Recognize renal emergencies & provide competent care. <b>Attitude:</b> Equip self with modern therapies used in the treatment of renal emergencies.	<ul style="list-style-type: none"> <li>• Management of Renal emergencies:</li> <li>• Anuria (2 hrs)</li> <li>• Acute renal failure,</li> <li>• Poisoning (2 hrs)</li> <li>• Trauma,</li> <li>• Urine retention (2 hrs)</li> <li>• Acute graft rejection</li> <li>• Hematuria (2 hrs)</li> <li>• Nurse's role. (2 hrs)</li> </ul>
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### Unit VIII: Management of Renal emergencies

Course Outcome	Program Outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain renal emergencies & its management.	2	2	2	2	2	3	1
CO-2: Recognize renal emergencies & provide competent care	2	2	2	2	2	3	1
CO-3: Prepare self with modern therapies used in the treatment of renal emergencies.	2	2	2	2	2	3	1

IX (10 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Understand different groups of drugs used in the urinary disorders. <b>Skill:</b> Interpret the effects of various drugs administered. <b>Attitude:</b> Recognize record & report the effects of drugs.	<b>Drugs used in urinary disorders:</b> <ul style="list-style-type: none"> <li>• Classification (3 hrs)</li> <li>• Indications, contraindications, actions and effects, toxic effects (5hrs)</li> <li>• Role of nurse. (2 hrs)</li> </ul>
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### Unit IX: Drugs used in urinary disorders

Course Outcome	Program Outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Understand different groups of drugs used in the urinary disorders	2	2	2	2	1	2	1
CO-2: Interpret the effects of various drugs.	2	2	2	2	1	2	1
CO-3: Recognize record & report the effects of drugs.	2	2	2	2	1	2	1

X (10 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Discuss dialysis, preparation & care of patients undergoing dialysis. <b>Skill:</b> Identify the needs of the clients treated with dialysis and render effective pre, intra and post dialysis care & maintain accurate adequate records of clients undergoing dialysis. <b>Attitude:</b> Provide necessary health education on life style modification & care of vascular access sites.	<b>Dialysis:</b> <ul style="list-style-type: none"> <li>• Dialysis- Historical, types, Principles, goals (2 hrs)</li> <li>• Hemodialysis- vascular access sites- temporary and permanent.</li> <li>• Peritoneal dialysis.</li> <li>• Dialysis Procedures- steps, equipments, maintenance</li> <li>• Role of nurse- pre dialysis, intra and post dialysis.</li> <li>• Complications.</li> <li>• Counseling.</li> <li>• Patient education.</li> <li>• Records and reports. (8 hrs)</li> </ul>
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**Unit X: Dialysis**

Course Outcome	Program Outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain dialysis in terms of history, types, principles, goals.	3	3	3	2	2	2	
CO-2: Discuss dialysis, preparation & care of patients undergoing dialysis.	3	2	2	2	2	2	3
CO-3: Identify the needs of the clients treated with dialysis and render effective pre, intra and post dialysis care & maintain accurate adequate records of clients undergoing dialysis.	3	2	2	2	2	2	3
CO-4: Prepare necessary health education on life style modification & care of vascular access sites.	3	2	2	2	2	2	3

XI (10 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Understand and explain the procedure of kidney transplant and preparation for and post operative care of the clients with kidney transplant. <b>Skill:</b> Identify the bio psychosocial needs of client undergoing kidney transplant. Render competent care to the clients with kidney transplant. Recognize early signs of transplant rejection, report & intervene promptly. <b>Attitude:</b> Educate the client, family members with kidney transplant.	<b>Kidney transplantation</b> <b>Nursing management of a patient with Kidney transplantation:</b> <ul style="list-style-type: none"> <li>• Kidney transplantation a historical review</li> <li>• Immunology of graft rejections</li> <li>• The recipient of a renal transplant (1 hr)</li> <li>• Renal preservations</li> <li>• Human –Leucocytic Antigen (HLA) typing matching and cross matching in renal transplantation.</li> <li>• Surgical techniques of renal transplantations.</li> <li>• Chronic renal transplant rejection.</li> <li>• Complication after KTP: Vascular and lymphatic, Urological, cardiovascular, liver and neurological, infectious complication.</li> <li>• KTP in children and management of pediatric patient with KTP.</li> <li>• KTP in developing countries. (5 hrs)</li> <li>• Results of KTP.</li> <li>• Work up of donor and recipient for renal transplant.</li> <li>• Psychological aspect of KTP and organ donations.(2 hrs)</li> <li>• Ethics in transplants</li> <li>• Cadaveric transplantation.(2 hrs)</li> </ul>
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**Unit XI: Kidney transplantation**

course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Understand and explain the procedure of kidney transplant and preparation for and post operative care of the clients with kidney transplant	3	2	2	2	2	2	3
CO-2: Identify the bio psychosocial needs of client undergoing kidney transplant.	2	2	2	2	2	2	2
CO-3: Formulate competent care to the clients with kidney transplant.	3	2	2	2	2	3	2
CO-4: Recognize early signs of transplant rejection, report & intervene promptly	3	3	2	2	2	3	3
CO-5: Prepare the client, family members with kidney transplant.	3	3	2	2	2	3	3

XII (5 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Understand and explain the need of rehabilitation. <b>Skill:</b> Initiate & Participate in rehabilitation of client undergoing dialysis & kidney transplant. <b>Attitude:</b> Educate clients and their families on care & modification in lifestyle.	<b>Rehabilitation:</b> <ul style="list-style-type: none"> <li>• Rehabilitation of patient with nephrological problems. Risk factors and prevention. (1 hr)</li> <li>• Rehabilitation of patients on dialysis and after kidney transplant. (2 hrs)</li> <li>• Rehabilitation of patients after urinary diversions. (1 hr)</li> <li>• Family and patient teaching. (1 hr)</li> </ul>
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**Unit XII: Rehabilitation**

	Program outcome						
	Clinician/ Nurse educator	Professional	Communicat or	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Understand and explain the need of rehabilitation.	3	2	2	2	2	2	3
CO-2: Demonstrate & Participate in rehabilitation of client undergoing dialysis & kidney transplant.	3	2	2	2	2	2	3
CO-3: Explain clients and their families on care & modification in lifestyle.	3	2	2	2	2	2	3

XIII (10 Hrs)	At the end of unit students are able to: <b>Knowledge:</b> Describe the management modalities for the children with renal diseases. <b>Skill:</b> Identify renal diseases in children and render effective care. Prepare children for different diagnostic & treatment procedures. <b>Attitude:</b> Educate care giver about lifestyle modification required by children with renal disorders.	<b>Pediatric urinary disorders</b> <ul style="list-style-type: none"> <li>• Etiology, clinical manifestations, diagnosis, prognosis, related pathophysiology, medical, surgical and nursing management of children with Renal Diseases -UTI, ureteral reflux, glomerulo nephritis, nephrotic syndrome infantile nephrosis, cystic kidneys, familial factors in renal diseases in childhood, Haemolytic uraemic syndrome. tumour</li> </ul>
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**Unit XIII: Pediatric Urinary Disorders**

Course Outcome	Program Outcome						
	Clinician/ Nurse educator	Professional	Communi cator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Describe the management modalities for the children with renal diseases.	3	2	2	2	2	2	3

CO-2: Identify renal diseases in children and render effective care. Prepare children for different diagnostic & treatment procedures.	3	2	2	2	2	2	3
CO-3: Demonstrate care giver about lifestyle modification required by children with renal disorders.	3	2	2	2	2	2	3

XIV (5 Hrs)	At the end of unit students are able to:	<b>Critical care units – dialysis, KTP unit</b> <ul style="list-style-type: none"> <li>Philosophy, aims and objectives. (1 hr)</li> <li>Policies Staffing pattern, design and physical plan of Dialysis and KTP units. (1 hr)</li> <li>Team approach, functions</li> <li>Psychosocial aspects in relation to staff and clients of ICU, dialysis unit. (1 hr)</li> <li>In-service education. (1 hr)</li> <li>Ethical and legal issues. (1 hr)</li> </ul>
	<b>Knowledge:</b> Describe the equipment and requirements of the dialysis and KTP units. <b>Skill:</b> Participate in establishing policies, procedures in dialysis and KTP units. <b>Attitude:</b> Provide fruitful suggestions for improvement in the functioning and the dialysis and KTP units.	

**Unit : Critical care units – dialysis, KTP unit**

course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Describe the equipment and requirements of the dialysis and KTP units.	2	2	2	2	1	1	1
CO-2: Explain about establishing policies, procedures in dialysis and KTP units.	2	2	2	2	1	1	1
CO-3: Select fruitful suggestions for improvement in the functioning and the dialysis and KTP units.	3	2	2	2	2	2	1

XV (5 Hrs)	At the end of unit students are able to:	<ul style="list-style-type: none"> <li>Quality assurance in nephrological nursing practice. (1 hr)</li> <li>Role of advance practitioner in nephrological nursing. (1hr)</li> <li>Professional practice standards. (1 hr)</li> <li>Quality control in nephrological nursing.(1 hr)</li> <li>Nursing audit.(1 hr)</li> </ul>
	<b>Knowledge:</b> Explain the quality assurance and role of advance nurse practitioner in nephrological nursing. <b>Skill:</b> Establish and practice professional practice standards in nephrological nursing.	

	<b>Attitude:</b> Perform nursing audit in nephrology unit.						
Unit XV: Quality assurance							
course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1: Explain the quality assurance and role of advance nurse practitioner in nephrological nursing.	2	3	2	2	2	2	1
CO-2: Formulate and practice professional practice standards in nephrological nursing.	3	3	2	2	2	2	1
CO-3: Elaborate nursing audit in nephrology unit.	3	3	2	2	2	2	1

**TEACHING STRATEGY:**

Total Hours: 1110

Theory Hours: 150

Clinical Hours: 960

**TEACHING METHOD:**

- Lectures, Seminars, Case presentation & discussion, Clinical observation , SISA, IDCD and Syndicate Journal Club

**A.V. AIDS:**

- OHP, LCD, Posters, Blackboard, Video Assisted Teaching / Learning ,

**AREA AND DISTRIBUTION OF CLINICAL HOURS:**

<i>Sr. No.</i>	<i>Dept / Unit</i>	<i>No. of weeks</i>	<i>Total hours</i>
1	Nephrology Ward	6	180
2	Pediatrics	2	60
3	Critical Care Unit	2	60
4	Urology Ward	6	180
5	Dialysis Unit	4	120
6	Kidney Transplantation Unit	2	60
7	URO OT	2	60
8	Emergency Wards	2	60
9	Uro Nephro OPDs	4	120
10	Diagnostic Labs	2	60
<b>Total</b>		<b>32 weeks</b>	<b>960 hours</b>

**ASSIGNMENTS:****Theory:**

Sr. No.	Assignment	No./Quantity	Marks per Assignment	Total Marks
1	Seminar	Four	1X50	200
Total Marks				200

**Practical:**

Sr. No.	Assignment	No./Quantity	Marks per Assignment	Total Marks
1	Teaching learning module preparation (Group work)	One	1X25	25
2	Case study	One	1X25	25
3	Case Presentation	One	1X50	50
4	Nursing Care Plans	Two	1X25	50
5	Speciality Drugs Study (Minimum 20 drugs)	One	1X50	50
6	Speciality Procedure Evaluation	Two	1X25	50
7	Clinical Performance Evaluation	One	1X100	100
8	Specific Day celebrations (group work)	One	1X25	25
Total Marks				375

**RECOMMENDED BOOKS:**

- Text Book of Medical Surgical Nursing – Brunner and Suddarth.
- Medical Surgical Nursing – Clinical Positive Out – Joyce and Black.
- Medical Surgical Assessment and Management of clinical problems – Lewis, Colliner.
- Medical Surgical Nursing an integrated approach – Write L. and Delmar.
- Pharmacology and Pharmacotherapeutics – Satoskat and Bhandarkar.
- Text book of medical surgical nursing, S.N. Chugh, Avichal Publishing Company.