



YENEPOYA

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

**YENEPOYA INSTITUTE OF ALLIED
HEALTH SCIENCES**

PROGRAM OUTCOMES AND COURSE OUTCOMES

UNDERGRADUATE PROGRAM

BACHELOR OF SCIENCE

RENAL DIALYSIS TECHNOLOGY

ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Derakattalle
Mangalore - 575 013, Karnataka

PROGRAM OUTCOMES
UNDERGRADUATE PROGRAM
BACHELOR OF SCIENCE

RENAL DIALYSIS TECHNOLOGY

(Knowledge – K, Skill – S, Attitude – A)

- PO 1 Apply discipline knowledge to undertake dialysis procedures in a safe and accurate environment, develop clinical practices using evidence practice research (K, S, A)
- PO 2 Understand and apply the principles of dialysis and skills necessary to give safe and effective care to the individual undergoing hemodialysis treatments. (K, S, A)
- PO 3 Demonstrate the use of hemodialysis equipment with an understanding of the process of operating dialysis equipment and alternate dialysis procedures. (K,S)
- PO 4 Assess the patient for any complications with an understanding of the problem and recognize the need to report the complications to the physician or nephrologist. (K, S)
- PO 5 Respond effectively to the physical and emotional needs of the patient undergoing dialysis treatment. (K, S, A)
- PO 6 Develop the ability to understand operation, routine maintenance, identification of malfunction in equipment, troubleshooting and minor repair in equipment used in dialysis unit such hemodialysis machine, water treatment plant, dialyzer reprocessing machine, etc. (K, S, A)
- PO 7 Communicate effectively and appropriately with different work groups and patient groups, taking into account age, health condition and cultural background when communicating with patients. (K, S, A)
- PO 8 Assess and critically evaluate information independently using technological facilities to remain informed about current dialysis theories/issues; use this information appropriately in professional settings including written and oral presentations. (K, S)
- PO 9 Demonstrate cognisance of current international standards within the profession and apply these in practice.
- PO 10 Manage patients in a manner that respects them as individuals, is culturally sensitive and ethically appropriate. (K, S)
- PO 11 Work effectively, ethically and cognisant of medico-legal boundaries within the team; take responsibility for own actions, and is able to mentor colleagues. (K, A)
- PO 12 Actively participate in the treatment of hemodialysis including planning and scheduling. (K, A)
- PO 13 Providing support within the unit in the handling of all hemodialysis and peritoneal dialysis related and patient related issues, e.g. dialysis complications, dietary consultations, psychological care and vascular access issues in coordination with the nephrologists. (K, A)
- PO 14 Monitoring the dialysis patients for intra dialytic complications. (K, S)

ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Daralkatte
Mangalore - 575 013, Karnataka

- PO 15 Guiding and teaching the students about paediatric dialysis. (K, S, A)
- PO 16 Strictly adhere to dialysis unit policies, infection control and quality control standards as per unit polices. (K, A)
- PO 17 Quality maintenance and attending procedures performed in the unit e.g. CRRT, ICU dialysis, paediatric dialysis, plasmapheresis, hemoperfusion, SCUF, and MARS. (K, S, A)
- PO 18 Perform and conduct the regular ongoing patient education nutritional counselling programs in the dialysis unit. (K, S, A)
- PO 19 Overall care of patient outcomes, addresses patient satisfaction scores and patient safety issues. (K, A)

 ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore - 575 018, Karnataka

COURSE OUTCOMES
UNDERGRADUATE PROGRAM
BACHELOR OF SCIENCE
RENAL DIALYSIS TECHNOLOGY

1ST SEMESTER

	CO	Description
Anatomy	CO 1	Demonstrate the structure of various organs in the human body and correlate the structure with the functions to know how both structure and function are modified by disease.
	CO 2	Identify and locate all the structures of the body.
	CO 3	Identify the microscopic structures of various tissues and organs in the human body and correlate the structure with the functions for understanding the altered state in various disease processes.
	CO 4	Understand the basic principles of embryology including major variations, abnormalities and the congenital anomalies involved in development of the organs and systems.
Physiology	CO	Description
	CO 1	Can able to broadly understand the physiological structure of each organ system and its physiological functions.
	CO 2	Can able to understand broadly the clinical abnormalities of organs and its clinical physiological implications
Biochemistry	CO	Description
	CO 1	Various biomolecules in our body and their classification
	CO 2	Sample collection for various tests performed in laboratory
	CO 3	Preparation of dilutions of chemicals and body fluids.
	CO 4	Various terms used in quality control
	CO 5	Biomedical wastes management
	CO6	Significance of various special investigations

ATTESTED


Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore - 575 018, Karnataka

	CO	Description
Dialysis Therapy I	CO 1	Describe the principles of haemodialysis and peritoneal dialysis
	CO 2	Describe the indications of haemodialysis and peritoneal dialysis
	CO 3	Explain the functioning and management of haemodialysis apparatus

	CO	Description
English and Communication Skills	CO 1	Apply the concepts and principles of English Language use in professional development such as pronunciation, vocabulary, grammar, paraphrasing, voice modulation, Spelling, pause and silence.
	CO 2	Apply LSRW (Listening, Speaking, Reading and Writing) Skill in combination to learn, teach, educate and share information, ideas and results.

	CO	Description
Constitution Of India	CO 1	This course is to keep the students abreast with the knowledge of the Constitution of India.
	CO 2	To make the students understand the importance of human rights as citizens of India.

2nd SEMESTER

	CO	Description
General Pathology	CO 1	Understand how body reacts to cellular responses and injuries.
	CO 2	Have a basic knowledge about various laboratory tests and its application on various disorders.
	CO 3	Define the medical terms, define and classify disease and understand the concepts of the disease.

	CO	Description
Microbiology	CO 1	Understand how the bacteria grow and how sterilization & disinfection works.
	CO 2	Have a basic knowledge about Immunization schedules and bacterial infections.
	CO 3	Define terms in virology, mycology and parasitology.

ATTESTED


 Dr. Gangadhara Somayaji K.S.
 Registrar
 Yenepoya (Deemed to be University)
 University Road, Bejalehatti
 Mangalore - 575 010, Karnataka

	CO	Description
Dialysis Therapy II	CO 1	Describe the hemodialysis unit design
	CO 2	Demonstrate BLS, methods of measurement of vital signs and maintenance of water treatment plant.
	CO 3	Explain the mechanism of functioning and management of hemodialysis machines.
	CO	Description
Health Care	CO 1	Describe the concepts of health, illness and national health policy various welfare programmes in India.
	CO 2	Explain the concepts of Nursing
	CO 3	Explain the basic, special needs of the patient, bandaging and first aid for common emergencies
	CO 4	Explain infection control
	CO	Description
Environmental Studies	CO 1	Students learn to knowledge on Echo systems, biodiversity and environmental policies and practices.
	CO	Description
Sociology	CO 1	Able to understand the meaning of sociology, its relationship with other disciplines and also to gain knowledge on the sociological methods of investigations
	CO 2	Able to understand social factors and its role in health and disease
	CO 3	Able to understand the meaning, importance and agencies of socialization
	CO 4	Able to understand the concept and role of social groups in health, sickness and rehabilitation
	CO 5	Able to understand the meaning of family and its role in health, nutrition and sickness among members
	CO 6	Able to understand the meaning, features and health hazards of rural and urban communities
	CO 7	Able to understand the concept of culture and health and their relationship
	CO 8	Able to understand the meaning of social change, factors of social change, social change and stress, social change and health
	CO 9	Able to understand the meaning of social problems and types of social problems in the society
	CO 10	Gain knowledge on the social security and social legislation measures for the disabled
	CO 11	Able to understand the meaning of social work and role of medical social worker

ATTESTED


Dr. Gangadhara Somayaji K.S.
 Registrar
 Yenepoya (Deemed to be University)
 Old No. 100 Feet, Durgamatta
 Mangalore - 575 018, Karnataka

	CO	Description
Medical Ethics	CO 1	Increasing the awareness and knowledge of students of the value dimensions of interactions with the patients, colleagues, relations and public.
	CO 2	Fostering the development of skills of analysis, decision making and judgment.
	CO 3	Making the students aware of the need to respect the rights of the patient.
	CO 4	Duties and responsibilities of the technologists.

3rd SEMESTER

	CO	Description
Systemic Pathology	CO 1	Define the medical terms, define and classify disease and understand the concepts of the disease.
	CO 2	Describe the causes and mechanism of kidney diseases that occur during the routine work and also changes seen in different individuals.
	CO 3	Enumerate the laboratory tests eg: urine, blood, body fluids and its application on renal diseases

	CO	Description
Applied Microbiology	CO 1	Enumerate urinary tract and bloodstream infections
	CO 2	Describe viral infections
	CO 3	Define infection control in dialysis setting
	CO 4	Define sterilization and disinfection

	CO	Description
General Pharmacology	CO1	Define and describe the principles of pharmacology and pharmacotherapeutics
	CO2	Define absorption, distribution, metabolism and excretion of drugs
	CO3	Define, identify and describe the adverse drug reactions
	CO4	Define and describe the pharmacological actions and therapeutic uses of drugs affecting systems- autonomic nervous system, cardiovascular system, blood, endocrine etc.
	CO 5	To have a basic knowledge of drugs used in the treatment of various infections
	CO 6	To have a basic knowledge on miscellaneous drugs

	CO	Description
Applied Anatomy and Physiology Related to Dialysis Technology	CO 1	Describe the Structural & Gross anatomy of Kidney
	CO 2	Describe the microscopic structure of the kidney
	CO 3	Explain Body Fluids.
	CO 4	Describe the mechanism of urine formation.
	CO 5	Explain renal autoregulation
	CO 6	Describe the physiology of peritoneum

ATTESTED



Dr. Gangadhara Somayaji K.S.
Registrar
Yessyys (Approved by University)
University Road, Dargachatti
Mangalore - 575 016, Karnataka

Renal Disease I	CO	Description
	CO 1	Define the types of kidney disease
	CO 2	Explain the pathogenesis of AKI and CKD
	CO 3	Explain the treatment options for kidney failure
	CO 4	Describe conservative management in dialysis setting

Clinical Dialysis I	CO	Description
	CO 1	Define dialysis unit procedures and patient assessment
	CO 2	Perform patient monitoring during dialysis and patientcare record documentation
	CO 3	Explain hemodialysis procedure pre-setup

Kannada	CO	Description
	CO 1	Allied health science students will be able to attend health issues of native Kannada speaking patients more effectively.
	CO2	They can also act as a bridge between doctors and patients

4th SEMESTER

Dialysis Therapy III	CO	Description
	CO 1	Explain the importance of priming the extracorporeal blood circuit.
	CO 2	Describe dialyzer reprocessing techniques
	CO 3	Explain the different types of peritoneal access devices and PET test
	CO 4	Describe the infection control practices in dialysis setting

Renal Disease II	CO	Description
	CO 1	Explain the clinical features, management and manifestation of renal failure.
	CO 2	Brief about renal stone and pregnancy associated renal diseases.
	CO 3	Describe renal vascular disorders.

Applied Pharmacology	CO	Description
	CO 1	Describe the various pharmacological agents used in dialysis patients, route of administration, side effects, toxicity and its uses.
	CO 2	Explain the pharmacotherapeutic interventions and their interactions with patient recover process.
	CO 3	Describe the utilization of dialysis fluid composition and various disinfectants used in dialysis procedures.

ATTESTED



Dr. Gangadhara Somayaji K.S.
Registrar
Yeshwantrao Chavan Dental College University
Dr. Gopesh Road, Uralakatte
Mangalore - 575 016, Karnataka

Renal Nutrition	CO	Description
	CO 1	Describe the diet requirements in renal disorder and in ESRD patients.
	CO 2	Explain renal nutrition and psychological issues of ESRD

Clinical Dialysis II	CO	Description
	CO 1	Perform extracorporeal blood circuit priming procedures
	CO 2	Describe the different types of Dialysis Catheters
	CO 3	Brief on disinfectants used in dialysis unit and its adverse effects

Human Rights and Gender Equity	CO	Description
	CO 1	Basic Knowledge of Human Rights and its function and authorities in society and industry women's status, issues and gender equity.

Biostatistics	CO	Description
	CO 1	Gains Knowledge in application of statistics in medical field and research.
	CO 2	Possesses knowledge and skill in the use of basic statistical methods.

5th SEMESTER

Applied Dialysis Technology I	CO	Description
	CO 1	Define the concepts of adequacy of dialysis, anticoagulation requirements and abnormalities seen in dialysis patients
	CO 2	Describe special problems pertaining to genitourinary tract and male reproductive organs in CKD patients

Applied Dialysis Technology I	CO	Description
	CO 1	Describe the concepts of Metabolic Acidosis, Metabolic Alkalosis and renal failure in liver disease
	CO 2	Explain renal diseases associated with HIV
	CO 3	Elaborate the principles of ICU care

ATTESTED



Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Cooragalatte
Mangalore - 575 018, Karnataka

Hemodialysis Guidelines	CO	Description
	CO 1	Define the concepts of Bioethics related to dialysis
	CO 2	Comprehend the guidelines of hemodialysis unit

Renal Dialysis Technology related with Laboratory, Cardiology & Imaging Technology	CO	Description
	CO 1	Define the concepts of Laboratory technology related to dialysis technology
	CO 2	Define the concepts of Cardiology related to dialysis technology
	CO 3	Define the concepts of Imaging related to dialysis technology

Clinical Dialysis III	CO	Description
	CO 1	Follow the universal protocol of haemodialysis procedure
	CO 2	Perform maintenance and management of water treatment plant
	CO 3	Perform Dialysis reprocessing


6th SEMESTER

Advanced Dialysis Technology I	CO	Description
	CO 1	Define Hemodialysis Prescription
	CO 2	Elaborate Peritoneal Dialysis
	CO 3	Elaborate recent advances in dialysis

Advanced Dialysis Technology II	CO	Description
	CO 1	Define special dialysis procedures like CRRT, SLED, MARS etc
	CO 2	Understand and perform dialysis in special situations

Renal Transplantation	CO	Description
	CO 1	Define the concept of Organ transplant
	CO 2	Describe Transplant immunology
	CO 3	Elaborate the principles, indications and types of Renal transplant

ATTESTED


 Dr. Gangadhara Somayaji K.S.
 Registrar
 Yenepoya (Deemed to be University)
 University Road, Manipal
 Mangalore - 575 019, Karnataka

Clinical Dialysis IV	CO	Description
	CO 1	Perform the care for Vascular access, needling and independent handling of dialysis procedure.
	CO 2	Describe extracorporeal blood therapies and ICU dialysis
	CO 3	Comprehend AVF and AVG needling techniques

ATTESTED



Dr. Gangadhara Somayaji K.S.
Registrar
Yerapey (Deemed to be University)
Dr. Jayashree Pooj. Dnyaneshwari
Mangalore - 575 018, Karnataka