OPJS UNIVERSITY, CHURU (RAJASTHAN)

Syllabus

For

Certificate in Dialysis Technology (CDT)

Duration of Course : 1 year

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<tr>
<th>S.No.</th>
<th>Paper code</th>
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<td>1.</td>
<td>CDT-101</td>
<td>Anatomy and Physiology &amp; Introductory Biology</td>
<td>50+30+20=100</td>
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<td>2.</td>
<td>CDT-102</td>
<td>Biochemistry</td>
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<td>3.</td>
<td>CDT-103</td>
<td>Introduction to Dialysis</td>
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<td>CDT-104</td>
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Details of Syllabus

CDT-101- Anatomy and Physiology & Introductory Biology

Anatomy:-
1. Introduction to Anatomy & Histology, Structure of cell, epithelial tissue, muscular tissue, nervous tissue.
2. Skeletal system- Structure of Bones, Types of bones, Bones of cranium, face, vertebral column, Upper & lower limbs, fracture of bones, movements of joints.
4. Circulatory system- Structure of heart, names and position of main blood vessels.
5. Digestive system- Parts of gastrointestinal tract and associated glands.
6. Respiratory system- Parts of respiratory system.
7. Urinary system- Parts of urinary system.
8. Skin & sense organs- Eye, Ear, Nose, Tongue (taste buds)
9. Nervous system- Parts of Brain, spinal cord. Cranial nerve, spinal cord, Peripheral nerves, Blood supply of Brain and spinal cord.
10. Reproductive system- male & female reproductive organs.
11. Endocrine Glands- Thyroid, Parathyroid, Adrenal, pituitary, pancreas and sex glands.

Physiology :-
2. Cardiovascular System- Circulation of blood, function of heart and blood vessels, control of heart rate, pulse, regulation of blood pressure.
3. Respiratory System- Functions of lungs, mechanism of breathing & exchange of gases in the lungs, regulation of respiration, respiration disorder like anoxia, Hypoxia, dyspnea, lung function test.
4. Digestive systems- Digestion and absorption of food.
5. Excretory system- Structure and function of kidney and urinary bladder, mechanism of urine formation, Disorder of Kidney, ureter, urinary bladder.
7. Reproductive system- physiology and Female reproductive organs.
8. Endocrine Glands- functions of endocrine glands and hormones secreted by them.

**Introductory Biology :-**
1. Living World- Biology & its branches, characters of living organisms.
2. Cell & cell division:- cell as a basic unit of life, unicellular and multi cellular organisms, compound microscope, electron microscope.
3. Cell organelles & their functions-
4. Genetics- Continuity of life - heredity, variation; Chromosomes - sex linked inheritance; mutation
   DNA as a genetic material - its structure and replication; structure of RNA and its role in protein synthesis; Gene expression - transcription and translation in prokaryotes and eukaryotes.

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**CDT-102- Biochemistry**

1. Standard solutions :- various standard solutions used, their preparation, storage of chemicals.
2. Osmosis, Diffusion, dialysis, surface tension.
3. Collection and recording of biological specimens, separation of serum and plasma preservation and disposal of biological materials.
4. Electrometric determination of Na+ and K+, Cl-, Serum Phosphorus, Serum Ca++
5. Principal and procedure for estimation of Glucose, urea, uric acid, creatinine, bilirubin, total protein, Estimation of Hemoglobin, TLC,DLC,BT,CT.

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**CDT-103- Introduction to Dialysis**

1. Dialysis- the concept brief history , definition, mechanism.
2. Components of dialysis- access, blood flow, anticoagulant, dialysate).
3. Water treatment
5. Assessment of patients prior, during and after dialysis.

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CDT-104- Communication & Soft Skills.

UNIT I.
Essentials of Grammar:
• Parts of Speech • Punctuation • Vocabulary Building • Phonetics

UNIT II.
Office Management:
• Types of Correspondence • Receipt and Dispatch of Mail • Filing Systems
• Classification of Mail. • Role & Function of Correspondence • MIS • Managing Computer

UNIT III.
Group Discussion & Presentation:
• Definition • Process • Guidelines • Helpful Expressions • Evaluation

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CDT-105- Practical

1. Anatomy- Identification of bones & other organs of the body & viva voce as theory syllabus
2. Physiology- vene puncture, finger pricking techniques, HB estimation, blood groups, RBS, HIV, BT, CT & viva voice
3. Demonstration of hemodialysis unit, machine, maintenance of hygiene in dialysis unit.
5. Dialysis closure.

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