

Curriculum  
for  
Practical :- First Year  
Diploma in C.T. Scan Technician

| <b>Practical</b> | <b>Topics</b>   |
|------------------|---|
|                  | <b><u>Observership for :-</u></b>                                   |
|                  | 1. Preparation of patient for CT Scan.                              |
|                  | 2. Performing all types of CT Scan.                                 |
|                  | 3. Contrast administration & management of adverse reactions to it. |
|                  | 4. Protection from radiation hazards.                               |
|                  | 5. Assisting CT guided procedures.                                  |
|                  | 6. Developing film.   |
|                  | 7. Record keeping.  |

## Details of Curriculum for Second Year Diploma in C.T. Scan Technician

| <b>PAPER 1st<br/>Theory</b>   | Topics  | Hours.  |
|---|---|---|
| <b>1. Details of<br/>Only relevant<br/>surgical &amp;<br/>medical<br/>conditions.</b> | <p>1. History taking. General examination of the patient. Filling Case-sheet. Common clinical words.</p> <p>2. Hypertension:- Def, Causes, Pathology, Clinical lectures, Investigation &amp; Management.</p> <p>3. Hypotension :- Def, Causes, Pathology, Clinical lectures, Investigation &amp; Management.</p> <p>4. Diabetes mellitus :- Def, Causes, Pathology, Clinical lectures, Investigation &amp; Management.</p> <p>5. <u>Diseases of blood</u> :- Anaemia, Basics of coagulation Bleeding disorders &amp; Haemophilia.</p> <p>6. <u>Respiratory Tract</u> :- Pneumonia, Tuberculosis, B.asthma, COPD, Bronchiectasis, Collapse of lung, Pneumonitis, Pleural effusion, Pneumothorax, Empyema thoracis, Cancer lung.</p> <p>7. <u>Diseases of GIT &amp; Liver &amp; GB</u> :-Reflux Oesophagitis, Peptic ulcers, Gastritis, Instestinal Obstruction, Hepatitis, Cirrhosis of liver, Cholecystitis, Common mass in abdomen.</p> <p>8. <u>Diseases of Nervous system</u>:- Stroke, Meningo-encephalitis, Glasgow coma scale, Epilepsy etc.</p> <p>9. Basic idea about fractures &amp; their general management.</p> <p>10. <u>Head injury</u> :- SCALP injury, skull fracture, intracranial bleeds, concussion, contusion etc.</p> <p>11. Out line of thoracic injury.</p> <p>12. Out line of abdominal injury.</p> <p>13. PIVD &amp; other spinal diaeases.</p> <p>14. Spina bifida, Meningocele, meningo-myelocele.</p> <p>15. Hydrocephalus:- Def,Causes, Types, S/S, Management.</p> <p>16. Brain tumors, tuberculoma &amp; Neurocysticercosis.</p> | <p>15 Hrs</p> <p>05 Hrs</p> <p>05 Hrs</p> <p>10 Hrs</p> <p>20 Hrs</p> <p>40 Hrs</p> <p>50 Hrs</p> <p>25 Hrs</p> <p>25 Hrs</p> <p>20 Hrs</p> <p>10 Hrs</p> <p>10 Hrs</p> <p>10 Hrs</p> <p>10 Hrs</p> <p>20 Hrs</p> <p>20 Hrs</p> |

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|   |  |        |
|---|--|--------|
| <b>1. Details of Only relevant surgical &amp; medical conditions.</b> | 17. <u>Diseases of Urinary tract</u> :- Urolithiasis, Benign prostatic hyperplasia.                | 15 Hrs |
|   | 18. <u>Endocrine system</u> :- Diabetes mellitus, hypo & Hyper thyroidism.                         | 10 Hrs |
|   | 19. <u>Miscellaneous</u> :- Hypo & Hyper Natraemia, Hypo & Hyper Kalaemia, Hypo & Hyper Calcaemia. | 05 Hrs |
|   | 20. <u>Infections diseases</u> :- TB, Typhoid, Malaria, Dengue fever, Leprosy, AIDS, Amoebiasis.   | 10     |

| <b>PAPER 1st Theory</b>  | Topics                                     | Hours. |
|--|--|--------|
| <b>2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion</b> | 1. Temperature monitoring & Fever.         | 02 Hrs |
|  | 2. Pulse monitoring.                       | 02 Hrs |
|  | 3. BP monitoring.                          | 02 Hrs |
|  | 4. Respiration monitoring.                 | 01 Hrs |
|  | 5. Types of Injection routes.              | 01 Hrs |
|  | 6. IM Injection.                           | 01 Hrs |
|  | 7. IV Injection.                           | 01 Hrs |
|  | 8. SC Injection.                           | 01 Hrs |
|  | 9. Oxygen Therapy.                         | 03 Hrs |
|  | 10. Nebulization                           | 03 Hrs |
|  | 11. IV Infusion (Also with infusion pump). | 01 Hrs |
|  | 12. Care of Unconscious patient.           | 02 Hrs |

## Details of Curriculum for Second Year Diploma in C.T. Scan Technician

| <b>PAPER 2nd<br/>Theory</b>  | <b>Topics</b>  | <b>Hours.</b> |
|--|--|---------------|
| <b>1.CT physics,<br/>slice Anatomy<br/>&amp; CT<br/>positioning.</b> | <p><b>1.</b> <b>Physics</b> Basic Principles of C.T Scan, Discovery of C.T Scan, Scanner Geometry:-1<sup>st</sup> Generation, IIInd Generation, III Generation, IVth Generation, Collimators, Artifacts, C.T Number, Attenuation values, Image Reconstruction Algorithm. System Components of Helical or spiral C.T. Scan, Gray Scale, MIP, MPR, VRT, Angiography. MDCT Cardiac C.T /64/128 Slice C.T</p> <p>Pitch / 3DCT Reconstruction / SSD/ PET CT</p> <p><b>2.</b> CT slices—Axial, coronal and sagittal sections of Brain and Spine.</p> <p><b>3.</b> CT slices—Axial,coronal and sagittal sections of Orbit.</p> <p><b>4.</b> CT slices—Axial,coronal and sagittal sections of PNS</p> <p><b>5.</b> CT slices—Axial,coronal and sagittal sections of Neck.</p> <p><b>6.</b> CT slices—Axial, coronal and sagittal sections of Thorax.</p> <p><b>7.</b> CT slices—Axial, coronal and sagittal sections of Abdomen.</p> <p><b>8.</b> CT slices—Axial, coronal and sagittal sections of Pelvis.</p> <p><b>9.</b> CT slices—Axial, coronal and sagittal sections of Limbs.</p> <p><b>10.</b> CT slices—Axial, coronal and sagittal sections of Hepatobiliary System.</p> <p><b>11.</b> CT slices—Axial, coronal and sagittal sections of KUB</p> <p><b>12.</b> Various positions used in doing CT Scan.</p> | 90 Hrs        |

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| <b>PAPER 2nd<br/>Theory</b> | <b>Topics</b>  | <b>Hours.</b> |
|-----------------------------|--|---------------|
|                             | <b>CT PROCEDURES</b>                                     |               |
|                             | 1. C.T. Myelogram /cisternogram.                         | 10 Hrs        |
|                             | 2. CT Guided FNAC / biopsy.                              | 20 Hrs        |
|                             | 3. Other Special C.T. Procedures & common interventions. | 30 Hrs        |
|                             | 4. C.T Enteroclysis/ CT IVP/ dual phase CT.              | 20 Hrs        |
|                             | 5. CT Angiography, mainly brain.                         | 20 Hrs        |

| <b>PAPER 2nd<br/>Theory</b>   | <b>Topics</b>   | <b>Hours.</b> |
|---|---|---------------|
| <b>3. Bio-medical<br/>physics of CT<br/>Scan machine<br/>&amp;<br/>developement<br/>of CT film etc.</b> | 1. Basic Bio-medical physics of CT Scan machine.          | 80 Hrs        |
|   | 2. Types of film, cassette, screen, Developer, fixer etc. | 30 Hrs        |

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| <b>Practical</b> | <b>Topics</b>   |
|------------------|---|
|                  | <b><u>Hands on training of :-</u></b>                               |
|                  | 1. Preparation of patient for CT Scan.                              |
|                  | 2. Performing all types of CT Scan.                                 |
|                  | 3. Contrast administration & management of adverse reactions to it. |
|                  | 4. Protection from radiation hazards.                               |
|                  | 5. Assisting CT guided procedures.                                  |
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