GROW MORE INSTITUTE OF NURSING, HIMMATNAGAR

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|  |  |  |  |  |  |  | **PATHOLOGY AND GENETICS** |  |
| **Section A-Pathology** | **Time: Theory 30 hours** |  |
| **Placement: Second Year** |  |  |
| **Course Description :** |  |  |
|  |  |  | This course is designed to enable students to acquire knowledge of pathology of various |  |
|  | disease condition and apply this knowledge in practice of nursing. |  |
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|  | **Unit** | **Time** |  |  | **Content** |  |
|  |  | **(Hrs)** |  |  |  |
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|  | I | 3 |  |  |  |  | **Introduction** |  |
|  |  |  |  |  |  |  | Importance of the study of pathology |  |
|  |  |  |  |  |  |  | Definition of terms |  |
|  |  |  |  |  |  |  | Methods and techniques |  |
|  |  |  |  |  |  |  | Cellular and Tissue changes |  |
|  |  |  |  |  |  |  | Infiltration and regeneration |  |
|  |  |  |  |  |  |  | Inflammations and Infections |  |
|  |  |  |  |  |  |  | Wound healing |  |
|  |  |  |  |  |  |  | Vascular |  |
|  |  |  |  |  |  |  | changes |  |
|  |  |  |  |  |  |  | **Cellular growth, Neoplasms** |  |
|  |  |  |  |  |  |  | Normal and Cancer cell |  |
|  |  |  |  |  |  |  | Benign and Malignant growths |  |
|  |  |  |  |  |  |  | In situ carcinoma |  |
|  |  |  |  |  |  |  | Disturbances of fluid and electrolyte imbalance |  |
|  |  |  |  |  |  |  |  |  |
|  | II | 10 |  | 5 |  | **Special pathology** |  |
|  |  |  |  |  |  |  | **Pathological changes in disease condition of various systems***:* |  |
|  |  |  |  |  |  |  | **Respiratory tract** |  |
|  |  |  |  |  |  |  | Tuberculosis, Bronchitis, Pleural effusion and pneumonia**,** |  |
|  |  |  |  |  |  |  | Lung abscess, emphysema, bronchiectasis |  |
|  |  |  |  |  |  |  | Bronchial asthma, Chronic obstructive Pulmonary disease & tumours |  |
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* **Cardio-vascular system**
* Pericardial effusion
* Rheumatic heart disease
* Infective endocarditis, atherosclerosis
* Inchemia, Infarction & aneurysm
* **Gastro Intestinal Tract**
* Peptic ulcer, typhoid
* Carcinoma of GI tractbuccal, Esophageal,
* Gastric & intestinal
* **Liver, Gall bladder & pancreas**
* Hepatitis, Chronic liver abscess, cirrhosis
* Turnover of liver, gall bladder and pancreas,
* Cholecystitis



* **Kidneys & Urinary tract**
* Glomerulonephritis, Pyelonephritis
* Calculi, renal failure, renal carcinoma & cystitis

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* **Male genital systems**
* Cryptorchidism, testicular atrophy
* Prostatic hyperplasia, carcinoma Penis & prostate
* **Female genital system**
* Fibroids
* Carcinoma cervix and Endometrium
* Vesicular mole, choriocareinoma
* Ectopic gestation
* Ovarian cyst & tumour

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|  |  |  |  | **Cancer Breast** |
|  |  |  |  | **Central Nervous system** |
|  |  |  |  | Hydrocephalus, Meningitis, encephalitis |
|  |  |  |  | Vascular disorders thrombosis, embolism |
|  |  |  |  | Stroke, paraplegia, quadriplegia |
|  |  |  |  | Tumours, meningiomas-gliomas |
|  |  |  |  | **Metastatic tumour** |
|  |  |  |  | **Skeletal system** |
|  |  |  |  | Bone healing, osteoporosis, osteomyelitis |
|  |  |  |  | **Arthritis & tumours** |
|  |  |  |  |
| III | 4 | 3 | **Clinical pathology** |
|  |  |  |  | **Various blood and bone marrow tests in assessment and monitoring of** |
|  |  |  |  | **disease condition** |
|  |  |  | Hemoglobin |
|  |  |  | RBC, White cell & platelet counts |
|  |  |  | Bleeding time, clotting time and prothrombine time |
|  |  |  | Blood grouping and cross matching |
|  |  |  | Blood Chemistry |
|  |  |  | Blood culture |
|  |  |  | Serological and immunological tests |
|  |  |  | Other blood tests |
|  |  |  | Examination of bone marrow |
|  |  |  | Method of collection of blood specimen for various clinical pathology, |
|  |  |  |  | biochemistry, microbiology tests, inference and normal values |
|  |  |  |  |
| IV | 2 | 1 | **Examination of body cavity fluids, transudates and exudates** |
|  |  |  |  | The laboratories tests used in CSF analysis |
|  |  |  |  | Examination of body cavity fluids, transudates and exudates-sputum, wound |
|  |  |  |  | discharge etc. |
|  |  |  |  | Analysis of gastric and duodenal contests |
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* Analysis of semen-sperm count, motility and morphology and their importance in infertility
* Methods of collection of CSF and other cavity fluids specimen for various clinical pathology, biochemistry, microbiology tests, inference and normal values.



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| V |  | 1 |  | 1 | **Urine and faeces** |

**Urine**

* Physical characteristics
* Analysis
* Culture and sensitivity

**Faeces**

* Characteristics
* Stool examination: occult blood, ova, parasite and cyst, reducing substance etc.
* **Methods of collection for various tests, inference and normal values**

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**PATHOLOGY AND GENETICS**

**Section B-Genetics** **Time :Theory 15 hours**

**Placement: Second Year**

**Course Description:**

This course is designed to enable students to acquire understanding of Genetics, its role in causation and management of defects and diseases.

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| **Unit** | **Time** |  | **Content** |
|  | **(Hrs)** |  |  |
| I | 3 | **Introduction** |
|  |  |  | Practical application of genetics in nursing |
|  |  |  | Impact of genetics condition on families |
|  |  |  | Review of cellular division mitosis and meiosis. |
|  |  |  | Characteristics and structure of genes |
|  |  |  | Chromosomes-sex determination |
|  |  |  | Chromosomal aberrations Pattern of inheritance |
|  |  |  | Mendalian theory of inheritance |
|  |  |  | Multiple allots and blood groups |
|  |  |  | Sex linked inheritance |
|  |  |  | Mechanism of inheritance |
|  |  | Error in transmission |
|  |  | (Mutation) |
|  |  |  |
| II | 3 | **Maternal, Prenatal and genetic influences on development of defects and diseases** |
|  |  |  | Conditions affecting the mother: genetic and infections |
|  |  |  | Consanguinity atopy |
|  |  |  | Prenatal nutrition and food allergies. |
|  |  |  | Maternal Age |
|  |  |  | Maternal drug therapy |
|  |  |  | Prenatal testing and diagnosis |
|  |  |  | Effect of Radiation, drug and chemicals |
|  |  |  | Infertility |
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|  |  |  | Spontaneous abortion |
|  |  |  | Neural Tube Defects and the role of folic acid in lowering the risks |
|  |  |  | Down syndrome (Trisomy 21) |
|  |  |  |
| III | 2 | **Genetic Testing in the neonates and children** |
|  |  |  | Screening For |
|  |  |  | Congenital abnormalities |
|  |  |  | Developmental delay |
|  |  | Dysmorphism |
|  |  |  |
| IV | 2 | **Genetic conditions of adolescents and adults** |
|  |  |  | Cancer genetics –Familial Cancer |
|  |  |  | Inborn errors of metabolism |
|  |  |  | Blood group alleles and hematological disorder |
|  |  |  | Genetic haemochromatosis |
|  |  |  | Huntington’s disease |
|  |  |  | Mental illness |
|  |  |  |
|  |  |  |  |
| V | 5 | **Services related to Genetics** |
|  |  |  | Genetic testing |
|  |  |  | Human genome project |
|  |  |  | Gene therapy |
|  |  |  | The Eugenics movement |
|  |  |  | Genetic Counseling |
|  |  | Legal and Ethical issues Role of nurse |
|  |  |  |  |

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