ANATOMY AND PHYSIOLOGY

Theory - Anatomy: 60
Physiology: 60

Placement: First Year

Course Description -The course is designed to assist students to acquire the knowledge of the normal Structure of human body & functions to ensure the students to understand the alternation in Anatomical structure and function in disease and practice of Nursing

Specific objectives – At the end of the course the students will be able to:

1) Describe the general structure and functions of the body as a whole.

2) Describe the general and microscopic structure and functions of each system of the body.

3) Explain the macroscopic and microscopic structure and functions of each organs of the body.

4) Understand the effects of alterations in structures and functions of as whole.

5) Apply the knowledge of anatomy and physiology in the practice of nursing.

Anatomy

Theory – 60 hours

(Class 40+ lab 20 hours)

UNIT	HRS	LEARNING OBJECTIVE	CONTENTS	TEACHING LEARNING ACTIVITIES	ASSESSMENT METHODS
I Introduction	**5 Hrs**	Describe the anatomical terms, organization of human body and structure of cell, tissues membranes and glands	**Introduction to Anatomical terms organization of human body** • Cell & Cell structure division Tissues definition, types, characteristics, classification, location, functions, and formations • Membrane glands - classification and structure, alteration in disease Application and implication in nursing • Regions, cavities Membranes	• Lecture, Discussion Explain using charts, microscopic slides skeleton and torso. • Demonstrate cell types of tissues membranes and glands. • Journal	Short answer questions Objective type

II Skeletal System	**6 Hrs**	• Classify the Principal types of bones on the basis of its shape • Describe anatomical position structure and functions of bones and joints • - List various abnormal conditions of bones and joints	**The Skeletal System** • Function of bones Types of bone • Bone- formation growth, healing • Skeleton Axial, Appendicular • Bones- Classification • Joints – Classification and structure • Alteration in Disease • Application and implication in nursing	• Lecture Discussion Explain using charts, Skeleton loose bones and joints • Journal	Short answer Questions, Objective type and Short notes
III Muscular System	**7 Hrs**	• Explain the structure and functions of principal muscles of the body. • List the disorders of muscular system	**The Muscular System** • Muscular tissue review • Muscle groups Alteration in Disease • Application and implication in nursing	• Lecture Discussion Explain using charts, models, and films Demonstrate muscular movements • Journal	Short answer questions, Objective type
IV Nervous System	**6Hrs**	• Describe the anatomical position, size, shape and structure of various organs of the nervous system. • Compare the functions of different parts of the brain. • List the abnormalities of nervous system.	**The Nervous System** • Structure of and neurons • Somatic nervous system ❑ Structure of brain, spinal cord, cranial nerves, spinal nerves, peripheral nerves • Autonomic nervous system -sympathetic, parasympathetic. ❑ Structure, location alteration in disease • Application and implication in nursing	• Lecture Discussion Explain using models torso, charts, slides and specimens • Journal.	Short answer Questions Objective type and Short notes

V **Sensory organs**	**6 Hrs**	• Describe the anatomical position, size, shape and structure of various sensory organs. • List the abnormalities related to the sense organs.	**The sensory system** • Eye • Ear {auditory apparatus} • Nose {olfactory apparatus} • Tongue • Skin structure	• Lecture Discussion Explain using models torso, harts, slides and specimens • Journal.	Short answer Questions Objective type and Short notes
VI **Circulatory and lymphatic System**	**7 Hrs**	• Describe the anatomical position, size, shape and structure of organs • Explain arterial, venous and lymphatic circulation. • Enumerate the disorders of heart and circulatory system.	**Circulatory and lymphatic system** **<u>The Circulatory system</u>** **Blood-** ❑ Microscopic structure • Heart & Pericardium • Arterial & venous system(Systemic, Pulmonary, Hepatoportal Coronary) • Circulation- (Systemic, Pulmonary, Hepatoportal Coronary) **<u>Lymphatic System and Lymphoid tissue</u>** • Lymphatic vessels and lymph] • Lymphatic tissue -Thymus -Lymph node -Spleen -Lymph nodules • Alteration in disease • Application and implication in nursing	• Lecture Discussion Explain using models, torso, charts, slides and specimens • Journal.	Long answer and Short answer questions Objective Type and Short notes

VII **The respiratory system**	**5 hrs**	• Describe the anatomical position, size, shape and structure of various organs of respiratory system	**The Respiratory System** -Structure of the organs respiration -Muscles of respiration: Intercostals and Diaphragm	• Lecture discussion • Explain using models, torso, charts, slides , specimens • Record book	Short answer questions Objective Type and Short notes
VIII **The Digestive system**	**6 Hrs**	System. • Describe the anatomical position, size, shape and structure of organs of digestive system • List the abnormalities of digestive system.	**The digestive system** • Mouth- Tooth, mastication Salivary glands deglutition, • Esophagus • Stomach • Intestines, • Liver, Biliary Apparatus, • Peritoneum • Alteration in disease • Application and implication in nursing	• Lecture Discussion Explain using models, torso, charts, slides and specimens • Journal.	Long answer and Short answer questions Objective Type and Short notes
IX **The excretory system**	**4 Hrs** T =3 P =2	• Describe the anatomical position, size, shape and structure of organs of urinary • System • Explain incontinence and list the abnormalities of urinary system.	**The excretory system** Structure of the organs of urinary system: -Kidney -Ureter, -Urinary bladder -Urethra • Skin • Alteration in disease • Application and implication in nursing -	• Lecture Discussion Explain using models torso, charts, slides and specimens • Journal.	Short answer Questions Objective type and Short notes
X **Endocrine System**	**4 Hrs**	• Describe the anatomical position, size, shape and structure of various organs of the endocrine system. • List the abnormalities of system.	**The Endocrine system** • Pituitary • Thyroid Parathyroid & • Pancreas • Adrenal • Thymus • Alteration in disease • Application and implication in nursing	• Lecture Discussion Explain using models torso, charts, slides and specimens • Journal.	Short answer Questions Objective type and Short notes

XI Reproductive System	**4 Hrs** T=2 P=1	• Describe the anatomical position, size, shape and structure of male and female reproductive organs • List the abnormalities male and female reproductive system.	**The Reproductive System including Breast** -Structure of female reproductive organs. -Structure of male Reproductive organs -Structure of breast -Alteration in disease -Application and implication in nursing	• Lecture Discussion Explain using models torso, charts, slides and specimens • Journal.	Short answer Questions Objective type and Short notes

BIBLIOGRAPHY

1. Waugh, Anne (2003), " Ross & Wilson's Anatomy & Physiology in health & illness'' 10th ed., Churchill Livingstone.
2. Anthony & Thibodcon (2000), "Anatomy & Physiology for nurses'' 11th ed., C.V. Mosby Co., London.
3. Greig, Rhind, " Riddle's Anatomy & Physiology'', 7th ed., Churchill Livingstone.
4. Singh, I. B. (2005), "Anatomy & Physiology for nurses", 1st ed., Jaypee.
5. Tortora, (2003), "Principles of Anatomy & Physiology," 10th ed., Wiley inter.
6. Chaurasia, B.D. (2004), "Human Anatomy", 4th ed., CBS publishers.
7. Sembulingam, "Essentials of Medical Physiology," 3rd Edition 2004 J.P. Publications. 10.T Clenister and Jean Rosy (1974). "Anatomy and Physiology for Nurses" 2nd
1. Edition, William Hernmarni Medical BK. Ltd.
8. Ganong. F. William, "Review of Medical Physiology", 15th Edition, Prentice Hall International Inc., Appleton and Lange.
9. Guyton and Hall, "Textbook of Medical Physiology," 9th Edition, A Prism2. Indian Edn. Pvt. Ltd.

Evaluation Scheme

Subject Anatomy & Physiology				**Assessment**
	Hours	**Internal**	**External**	**Total**
Theory	3	25	75	100

Details as follows:

Internal Assessment:

Theory: **15 Marks**
Assignment (Writing Journal): **10 Marks**
Total: **25 Marks**
(Out of 25 Marks to be send to the University)

	Anatomy	**Physiology**	**Total Marks**	**Average out of**
Mid-Term	25	25	50	--
Prelim	37	38	75	--
Total	--	--	125	15
Assignment (Writing Journal)	25	25	50	10
Total	--	--	--	**25 Marks**

(125 Marks from mid-term & prelim (Theory) to be converted into 15 Marks and 50 Marks from Assignment (Writing Journal) to be converted into 10 Marks)

External Assessment:	**75 Marks**
(University Examination)	
Section A: Anatomy:	37 Marks
Section B: Physiology:	38 Marks
Total:	75 Marks

GUIDE LINE FOR JOURNAL

ANATOMY

	Topics
1	Abdominal Region
2	The Cell
3	The Tissues – Epithelial, muscular, nervous and connective
4	Bones of appendicular skeleton – Scapula, humerus, radius, ulna
5	Bones of the axial skeleton – Hip, Femur, ankle and foot
6	The Joints
7	Principal Muscles – Deltoid, Biceps, triceps, respiratory, abdominal and gluteal
8	Respiratory System – Tracheo-broncheal tree, lungs
9	Digestive System – Stomach, Biliary tract, Pancreas, Liver (microscopic) Large intestine.
10	Circulatory System – Structure of heart, aorta and its branches, venous branches, lymph node.
11	Urinary System – gross and microscopic structure of kidney, KUB
12	Reproductive Male – testes with spermatic cord Female – uterus and its support
13	Endocrine system – Pituitary gland
14	Nervous system – Brain, ventricles, areas of cerebrum
15	Sense organs – Skin, Eye, Ear.

EVALUATION CRITERIA FOR JOURNAL: 25 marks

SN	**Item**	**Maximum Mark**	**Marks allotted**
1	**Description** • Organization • Adequacy of content • Related	 4 5 4	
2	**Illustration** • Adequacy • Neatness • Presentation	 4 4 5	

GUIDE LINE FOR JOURNAL

PHYSIOLOGY

	Topics
1	Properties of cardiac and skeletal Muscles
2	Reflex arc
3	Blood – Bleeding time, clotting time, Hb estimation, Blood Group, RBC, WBC
4	Heart Sound
5	Cardiac Cycle
6	Action Potentials, ECG
7	Spirometry
8	BMR
9	Menstrual Cycle
10	Cranial Nerves

EVALUATION CRITERIA FOR JOURNAL: 25 marks

SN	**Item**	**Maximum Mark**	**Marks allotted**
1	**Description** • Organization • Adequacy of content • Related	 4 5 4	
2	**Illustration** • Adequacy • Neatness • Presentation	 4 4 4	