

Foundation to Human Anatomy MED 1101

Credits 2

Module coordinator Dr J K Dissanayake

Concept	Objectives	Duration	T/ L Activity	Comments
I.Overview				
1.1 Introduction to Anatomy	Students should be able to understand, 1. the importance of studying human anatomy 2. that the study of the structure of the body is facilitated by dividing it in to subsections 3. anatomical nomenclature	1 h 3hrs	Lecture Practical	Practical time will be used to demonstrate / explain basic anatomy concepts
1.2. The multicellular organism	1. understand the levels of organization of the multicellular organism from cells, tissues, organs and systems and their integration in to human being 2. understand the terms "totipotent" and "pluripotent" 3. understand that the functional unit of the multicellular organism is the tissue 4. state the basic systems of the body and their functions	1 h	Lecture	
1.3. Microscopy	1. identify the parts of the light microscope 2. handle the light microscope and state its uses 3. calculate the magnification 4. name the other microscopes and their uses (phase contrast, fluorescent, scanning, transmission electron microscopes)	1 h	Lecture	PD is done with cell practical

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1.4 The cell Structure and microscopic appearance	Describe, 1. the basic structure of the prokaryotic and eukaryotic cell 2. be able to describe the electron microscopic appearance of a normal eukaryotic cell 3. be able to understand that there are different types and size of cells (squamous, cuboidal, columnar) 4. cell- structural adaptations to function	1 h 3hrs	Lecture Practical	This practical will also cover the objectives of the microscopy practical
1.5. Cell division	1. describe mitosis and meiosis (giving examples) stating their importance 2. be able to state the phases of the cell cycle	2 h	Lectures	To be done before early embryogenesis & genetics lectures
2. Tissues of the body				
2.1. Introduction to basic tissue	state the basic tissue types of the body, their distribution and arrangement	1 h 3hrs	Lecture Practical	Details of skeletal, muscle and nerve tissues will be done in anatomy of limbs
2.2. Epithelia and glandular tissue 2.3 Connective tissue	identify the different types of epithelial tissue, glandular tissue and connective tissue giving examples 2. describe the light microscopic appearance 3. describe how the structure of epithelial, glandular and connective tissues adapted to perform the functions	2hrs 3hrs	Lecture Practical	
2.4 Introduction to Nervous tissue & Nervous system	1. describe the general arrangement of nervous system and nervous tissue 2. describe the arrangement of a spinal nerve, dermatomes and myotomes Body wall nerve supply Neurovascular plane Nerve supply of the limb	1 h	Lecture	Instead of typical spinal nerve - Before excitable tissue and resting membrane potential

3. Early embryogenesis	Describe 1. male and female germ cells, fertilization and factors affecting fertilization 2. implantation and factors affecting implantation 3. the process from fertilized ovum to germ layer formation 4. state the basic tissues derived from the germ layers 5. formation of the neural tube, neural crest cells and their derivatives 6. the development of pharyngeal arches 7. introduction to congenital abnormalities and twinning	5 hrs	Lectures	Some objectives are covered in the reproduction module
4. Human Genetics				
4.1. Introduction	Overview of the following 1. understand the importance of protein molecules in cellular functions and maintaining the structure 2. state how genetic material store information of the amino acid sequence of a polypeptide 3. state how the information is transferred to the next generation 4. describe arrangement of genetic material in prokaryotic and eukaryotic cells 5. be able to state the importance of studying genetics and a brief history 6. be able to describe polymorphism, polymorphic gene and housekeeping genes etc.	2 h	Lectures	Recall cell division

4.2. Chromosomes	<ol style="list-style-type: none"> 1. describe the basic structure and classification of chromosomes 2. understand what is meant by Ploidy , diploid, haploid , aneuploidy, trisomy, monosomy ... 3. Describe alleles, heterozygous, homozygous, dominant, recessive etc. 4. describe the normal karyotype and karyotyping procedure 5. describe chromosomal abnormalities and their consequences (structural & numerical) 	1h	Lecture	
4.3. Inheritance	<ol style="list-style-type: none"> 1 explain what is meant by a Pedigree 2. identify the symbols used in a Pedigree 3. construct a Pedigree 4. analyse and interpret a Pedigree 5. describe the term Mendelian Inheritance using examples 6. describe the term polygenic inheritance using examples 	4hrs 2hrs	Lecture Practical	
5. Human evolution	describe the evolution of man	1 h	Lecture	Changes related to Limb and limb girdle will be mainly done in Limb module

