

iUCT38 – Knowledge of anatomy, physiology and pathology for complementary therapies

URN – L/617/4358

Guided Learning Hours: 94

Learning outcome	Assessment criteria	Taught content to include
LO1 Understand the organisation of the body	1.1. Describe the anatomical regions of the body	• Abdominal • Axillary • Brachial • Buccal • Calcaneal • Carpal • Cephalic • Cervical • Costal • Cranial • Crural • Cubital • Cutaneous • Femoral • Forearm • Frontal • Gluteal • Groin • Inguinal • Lumbar • Mammary • Occipital • Ophthalmic • Oral

		• Orbital • Palmar • Patellar • Pectoral • Pedal • Pelvic • Perineal • Plantar • Popliteal • Sacral • Tarsal • Thoracic • Umbilical
	1.2. Describe the planes of the body	• Sagittal • Coronal/frontal • Transverse
	1.3. Describe the directional terms of the body	• Superior • Caudal/inferior • Anterior/ventral • Posterior/dorsal • Medial • Lateral • Proximal • Distal • Superficial • Deep • Ipsilateral • Contralateral • Parietal • Visceral
	1.4. Describe the quadrants of the body	• Left upper quadrant (LUQ) • Right upper quadrant (RUQ) • Left lower quadrant (LLQ) • Right lower quadrant (RLQ)
	1.5. Describe the chemical organisation of the body	• Atoms • Molecules

		• Inorganic compounds • Organic compounds
	1.6. Describe the structure, function and types of cell	• Cell membrane • Cytoplasm • Mitochondria • Ribosome • Endoplasmic reticulum • Golgi apparatus • Lysosomes • Vacuoles • Centrioles • Centrosome • Nuclear membrane • Nucleus • Nucleolus • Chromatin • Chromosomes • Chromatids • Centromere • Movement • Respiration • Sensitivity • Growth • Reproduction • Excretion • Metabolism • Anabolism • Catabolism • The process of mitosis to include: - Prophase - Metaphase - Anaphase - Telophase - Interphase • How substances enter and leave the cell to include: - Diffusion - Osmosis

		- Dissolution - Active transport - Filtration - Phagocytosis - Pinocytosis • Define histology • The structure and function of the main types of tissue in the body to include the following, giving examples - Simple epithelial tissue ▪ Squamous ▪ Cuboidal ▪ Columnar ▪ Ciliated - Compound epithelial tissue ▪ Stratified – keratinised ▪ Non-keratinised ▪ Transitional - Nervous tissue - Muscular tissue ▪ Striated ▪ Non-striated ▪ Cardiac - Connective tissue ▪ Areolar ▪ Adipose ▪ Lymphoid ▪ Yellow elastic ▪ White fibrous ▪ Bone ▪ Blood ▪ Cartilage (hyaline, yellow elastic, white fibrous) - Membranes ▪ Serous ▪ Mucous ▪ Synovial • Define the following - Anatomy - Physiology - Pathology
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		- The acute condition - The chronic condition - The emergency condition
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LO2 Understand the anatomy, physiology and pathologies of the skin, hair and nails	2.1. Explain the structure, function, growth and repair of the skin	• Epidermis - Stratum corneum - Stratum lucidum - Stratum granulosum - Stratum spinosum/malphigian layer - Stratum germinativum/basal layer • Dermis - Blood supply - Lymphatic supply - Hair follicle - Hair - Erector pili muscle - Sebaceous gland - Sweat glands ▪ Eccrine and apocrine - Sensory nerve endings (touch, heat, cold, pain) - Dermal papilla - Fibroblasts - Collagen - Elastin - Histiocytes - Mast cells • Subcutaneous layer • The functions of the skin to include: - Secretion - Heat regulation - Absorption - Protection - Elimination - Sensation - Vitamin D formation (7-dehydro-cholesterol) - Melanin formation - melanocytes • The growth and repair cycles of the skin to include: - Keratinisation (drying/hardening of cells)
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		- Desquamation - Wound healing • Recognition of skin types to include: - Dry - Oily - Combination - Mature - Young
	2.2. Explain the structure, function and growth cycle of the hair	• The position and function of the following parts of the hair to include: - Keratin - Cuticle - Cortex - Medulla - Inner root sheath - Huxley's - Henle's - Outer root sheath - Vitreous membrane - Connective tissue - Dermal papilla • The types of hair and functions to include: - Lanugo - Vellus - Terminal - Protection - Temperature control - Sexual attraction • The factors which may affect hair growth to include: - Congenital - Hormonal - Topical - Systemic - Non-systemic - Medication • The hair growth cycle and the effect of hormones on the hair growth cycle to include: - Anagen

		- Catagen - Telogen - Testosterone and hormones secreted from the adrenal cortex
	2.3. Explain the structure, function and growth cycle of the nails	• The position and function of the following nail structures to include: - Free edge - Hyponychium - Eponychium - Paronychium - Lunula - Mantle - Cuticle - Nail plate - Nail bed - Nail fold - Matrix - Nail wall • The process by which the nail grows: - Formed in the matrix - 3 layers - Keratin - Grows forward and dovetails into the nail bed - Rate of growth • The factors which affect nail growth to include: - Health - Age - Diet - Medication - Climate - Damage - Lifestyle
	2.4. Analyse the pathologies of the skin	• Congenital - Eczema - Psoriasis • Bacterial - Acne vulgaris - Acne rosacea - Boils

		- Carbuncles - Folliculitis - Impetigo • Viral - Herpes simplex - Herpes zoster - Verrucae - Warts • Fungal - Candida - Tinea corporis - Tinea pedis • Parasitical infestation - Pediculosis – capitis, corporis, pubis - Scabies • Pigmentation disorders - Albinism - Chloasma - Dermatosi papulosa nigra - Ephelides - Lentigo - Naevae - Papilloma - Port wine stain - Vitiligo • General disorders - Abrasions - Allergic reaction - Blisters - Broken capillaries - Comedones - Corns - Cyst - Crow's feet - Cuts - Chilblains - Dermatitis - Dehydrated skin - Keloid scars
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		- Loss of skin sensation - Milia - Sensitive skin - Striae - Thin skin - UV damage - Urticaria - Verrucae filliformis - Skin tags - Verrucae - Warts - Xanthomas - Burns - Cellulitis - Methicillin-resistant staphylococcus aureus (MRSA) - Pressure sores/bed sores - Sudiferous gland disorders ▪ Bromidrosis/osmidrosis ▪ Anhidrosis ▪ Hyperhidrosis - Connective tissue diseases ▪ Scleroderma ▪ Systemic lupus erythematosus (SLE) • The different skin cancers and their possible causes to include: - Basal cell carcinoma - Squamous cell carcinoma - Malignant melanoma
	2.5. Analyse the pathologies of the hair	• Alopecia • Androgenic alopecia • Hirsutism • Ingrown hair • Pediculosis capitis • Sycosis barbae
	2.6. Analyse the pathologies of the nails	• Beau's line • Blue nail • Discoloured nails • Dry/brittle nails • Flaking

		• Hang nail • Habit tic • Koilonychia • Lamella dystrophy • Leuconychia • Onychatrophia • Onychauxis • Onychia • Onychocryptosis • Onychogryposis • Onycholysis • Onychomycosis • Onychophagy • Paronychia • Pitting • Pterygium • Psoriasis • Sepsis • Transverse ridges • Vertical ridges • Tinea unguium • Whitlow
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LO3 Understand the anatomy, physiology and pathologies of the skeletal system	3.1. Explain the structure and classification of bones	• Compact • Cancellous • Long • Short • Flat • Irregular • Sesamoid • Examples of where in the body they would be found
	3.2. Explain the structure, function and growth of the skeletal system	• Axial skeleton • Appendicular skeleton • Support framework • Provides attachments for muscles • Forms joints to provide movement • Forms erythrocytes in the bone marrow

		• Stores calcium • Protection • Osteoblasts • Osteocytes • Osteoclasts • Epiphysis • Diaphysis • Periosteum • Ossification • The bones of the skeleton to include: - Cranium ▪ Parietal ▪ Frontal ▪ Ethmoid ▪ Sphenoid ▪ Occipital ▪ Temporal - Facial ▪ Nasal ▪ Zygomatic ▪ Maxilla ▪ Lacrimal ▪ Turbinator ▪ Palatine ▪ Mandible ▪ Vomer ▪ Hyoid - Vertebrae ▪ 7 cervical ▪ 12 thoracic ▪ 5 lumbar ▪ 5 sacrum ▪ 4 coccyx ▪ Intervertebral discs - Shoulder girdle ▪ Scapula ▪ Clavicle - Thoracic cage ▪ Ribs
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		▪ Sternum - Pelvic girdle ▪ Innominate bones • Ischium • Ilium • Pubis - Upper limb ▪ Humerus ▪ Ulna ▪ Radius ▪ Carpals • Scaphoid • Lunate • Triquetral • Pisiform • Trapezium • Trapezoid • Capitate • Hamate ▪ Metacarpals ▪ Phalanges - Lower limb ▪ Femur ▪ Tibia ▪ Fibula ▪ Patella ▪ Tarsals • Talus • Calcaneus • Navicular • Medial cuneiform • Intermediate cuneiform • Lateral cuneiform • Cuboid ▪ Metatarsals ▪ Phalanges
	3.3. Explain the types of joints and their range of movements	• Fixed/fibrous • Slightly moveable/cartilaginous

		• Freely moveable/synovial • Ball and socket • Condylod • Hinge • Pivot • Gliding • Saddle • Ligament(s) and where they are found
	3.4. Explain the functions of the arches of the feet	• Longitudinal arches • Transverse arch
	3.5. Analyse the pathologies of the skeletal system	• Arthritis • Ankylosing spondylitis • Cancer • Carpal tunnel syndrome • Cervical spondylitis • Ganglion • Gout • Osteoarthritis • Osteoporosis • Prolapsed intervertebral (slipped) disc • Rheumatoid arthritis • Stress • Synovitis • Tooth disorders • Whiplash • Fractures - Simple - Compound - Comminuted - Greenstick - Impacted - Complicated • Loss of limbs – prostheses • Osteomalacia • Osteogenesis imperfecta • Psoriatic arthritis • Paget's disease

		• Rickets • Spinal stenosis • Recognition and possible causes of postural deformities to include: - Congenital - Environmental - Traumatic - Kyphosis - Lordosis - Scoliosis
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LO4 Understand the anatomy, physiology and pathologies of the muscular system	4.1. Explain the structure, function, growth and repair of the muscular system	• Voluntary/skeletal (striated) • Involuntary/smooth (non-striated) • Cardiac • Movement • Joint stabilisation • Postural maintenance • Temperature control • Sliding filament theory • Nutrition (protein synthesis) • Amino acids
	4.2. Explain the location and action of muscle groups within the muscular system	• Trunk/torso - Sternocleidomastoid - Splenius capitis - Levator scapulae - Trapezius - Erector spinae - Supraspinatis - Infraspinatis - Teres major - Teres minor - Subscapularis - Rhomboid major and minor - Serratus anterior - Latissimus dorsi - Gluteus medius - Gluteus maximus - Gluteus minimus

		- Pectoralis major and minor - Rectus abdominus - External oblique - Internal oblique - Transversus abdominus - Quadratus lumborum - Intercostal • Arm/hand - Deltoid - Biceps - Triceps - Brachialis - Coraco brachialis - Brachioradialis - Pronator teres - Supinator radii brevis - Flexor carpi radialis - Palmaris longus - Extensor carpi radialis - Extensor carpi ulnaris - Flexor carpi ulnaris - Flexor carpi digitorum - Extensor carpi digitorum - Extensor pollicis longus - Flexor pollicis brevis - Abductor pollicis brevis - Flexor digitorum superficialis - Muscles of thenar eminence - Muscles of hypothenar eminence - Palmar aponeurosis - Tendons of extensor digitorum - Flexor digitorum profundus • Upper leg/thigh - Iliacus - Psoas - Quadriceps ▪ Rectus femoris ▪ Vastus lateralis ▪ Vastus medialis
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		▪ Vastus intermedius - Hamstrings ▪ Biceps femoris ▪ Semimembranosus ▪ Semitendinosus - Adductor longus - Adductor magnus - Adductor brevis - Gracilis - Sartorius - Piriformis - Gluteus maximus - Gluteus medius - Gluteus minimus • Lower leg/foot - Gastrocnemius - Soleus - Peroneus longus - Peroneus brevis - Peroneus tertius - Tibialis anterior - Tibialis posterior - Extensor digitorum longus - Extensor hallucis longus - Flexor digitorum longus - Digitorum brevis - Abductor hallucis - Achilles tendon - Flexor hallucis longus • Face, neck and scalp - Occipitalis - Frontalis - Procerous nasi - Nasalis - Levator labii superioris - Levator anguli oris - Zygomaticus - Orbicularis oris - Mentalis
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		- Depressor labii inferioris - Depressor anguli oris - Buccinator - Risorius - Medial pterygoid - Lateral pterygoid - Masseter - Temporalis - Orbicularis oculi - Levator palpebrae - Sternocleidomastoid - Splenius capitis - Trapezius - Platysma • The following terms in relation to the muscular system to include: - Action - Agonist - Antagonist - Attachment - Belly - Contractibility - Elasticity - Excitability - Extensibility - Fatigue - Fascia - Insertion - Levers - Origin - Tendon - Tone - Tension - Flexion - Extension - Abduction - Adduction - Rotation - Supination - Pronation
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		- Dorsiflexion - Plantarflexion - Eversion - Inversion - Circumduction - Protraction - Retraction - Depression - Elevation
	4.3. Explain the principles of muscle contraction	• How a muscle works • How it provides movement • Isotonic • Isometric • How a muscle knows when to contract • The source of energy to create a contraction • Factors affecting muscle tone • Different stages of contraction, i.e. tone and relaxation • Over contraction, i.e. causes of muscle tension and muscle fatigue • The formation of lactic acid • Circulation and muscle health
	4.4. Analyse the pathologies of the muscular system	• Adhesions • Adhesive capsulitis (frozen shoulder) • Atony • Atrophy • Achilles tendonitis • Back pain e.g., lumbago, rheumatism • Bursitis • Cramp • Deltoid bursitis • Fibromyalgia • Housemaid's knee • Lateral epicondylitis (tennis elbow) • Medial epicondylitis (golfer's elbow) • Microtrauma • Muscle fatigue • Myositis • Overuse

		• Repetitive strain injury/syndrome • Rupture • Shin splints • Spasm • Spasticity • Sprain • Strain • Stress • Tendonitis • Achilles bursitis • Muscular dystrophy • Tetanus
LO5 Understand the anatomy, physiology and pathologies of the nervous system	5.1. Describe the structure and function of each component of the nervous system	• Neurone • Motor neurone • Sensory neurone • Mixed nerve • Dendrite • Axon • Synapse • Neurilemma • Nodes of Ranvier • White matter • Grey matter • Myelin sheath • End feet/axon terminals • Ganglia • Reflex arc • Central nervous system (CNS) - Brain - Spinal cord • Peripheral nervous system (PNS) - 12 pairs of cranial nerves - 31 pairs of spinal nerves - 8 cervical - 12 thoracic - 5 lumbar

		- 5 sacral - 1 coccygeal - Brachial plexus - Lumbar plexus - Sacral plexus • Autonomic nervous system (ANS) - Sympathetic - Parasympathetic • Brain - Meninges ▪ Pia mater ▪ Arachnoid mater ▪ Dura mater - Cerebrospinal fluid - Cerebrum - Cerebellum - Pons Varolii - Medulla oblongata - Hypothalamus - Thalamus - Brain stem • Spinal cord - White matter - Grey matter - Dura mater - Arachnoid mater - Pia mater - Cerebrospinal fluid • How a nerve impulse is created to include: - Changes in temperature, pressure and chemicals - Neurotransmitters - Potassium and sodium ions
	5.2. Analyse the pathologies of the nervous system	• Alcohol abuse • Bell's palsy • Cancer • Cerebral palsy • Depression - Clinical

		- Bipolar affective disorder - Seasonal affective disorder (SAD) - Post-natal • Drug abuse • Epilepsy • Headache • Migraine • Motor neurone disease • Multiple sclerosis • Myalgic encephalomyelitis (ME) • Neuralgia • Neuritis • Parkinson's disease • Sciatica • Stress • Stroke • Transient ischaemic attack (TIA) • Alzheimer's disease • Concussion • Dementia • Motor neurone disease • Meningitis • Myasthenia gravis • Paralysis • Peripheral neuropathy • Poliomyelitis • Spinal cord injury • Spina bifida • The effect of stress on the nervous system - The way in which stress affects the fear, fight, flight syndrome - The way in which various parts of the sympathetic and parasympathetic nervous systems can be affected by stress and possible diseases and disorders caused by stress
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LO6 Understand the anatomy, physiology and	6.1. Explain the structure and function of the endocrine system	• Ductless glands • Chemical messengers
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pathologies of the endocrine system		• The interrelationship of the endocrine system with other systems to include: - Nervous system including the hypothalamus - Circulatory system - Digestive system - Reproductive system - Integumentary system
	6.2. Explain the location of endocrine glands	• Pituitary • Thyroid • Parathyroids • Thymus • Pineal • Pancreas • Adrenal medulla • Adrenal cortex • Ovaries • Testes
	6.3. Explain the function of the endocrine glands	• Maintenance of homeostasis • Control of bodily functions • Puberty, pregnancy, menopause and during the menstrual cycle
	6.4. Describe the hormones secreted from the endocrine glands and their target sites	• Pituitary - Posterior lobe ▪ Oxytocin ▪ Antidiuretic hormone (ADH or vasopressin) - Anterior lobe ▪ Prolactin ▪ Human growth hormone (HGH) ▪ Thyroid stimulating hormone (TSH) ▪ Adrenocorticotropin hormone (ACTH) ▪ Luteinising hormone (LH) ▪ Follicle stimulating hormone (FSH) ▪ Interstitial cell stimulating hormone (ICH) ▪ Melanin stimulating hormone (MSH) • Thyroid gland - Thyroxine - Triiodothyronine - Calcitonin

		• Parathyroids - Parathormone • Thymus - Thymosin • Pineal - Melatonin • Pancreas - Islets of Langerhans - Insulin - Glucagon • Adrenal medulla - Adrenalin (epinephrine) - Noradrenalin • Adrenal cortex - Mineralocorticoids ▪ Aldosterone - Glucocorticoids ▪ Cortisone ▪ Cortisol - Sex hormones ▪ Androgens ▪ Progesterone/oestrogen • Ovaries - Oestrogen - Progesterone • Testes - Testosterone • The exocrine glands to include: - Salivary - Mammary - Sebaceous - Eccrine - Apocrine
	6.5. Analyse the pathologies of the endocrine systems	• Addison's disease • Cancer • Cushing's syndrome • Diabetes insipidus • Diabetes mellitus – type 1 and 2 • Goitre

		• Grave's disease • Hyperthyroidism - Thyrotoxicosis • Hypothyroidism • Insomnia • Polycystic ovarian syndrome • Stress • Myxoedema • Acromegaly • Gigantism • Hyperparathyroidism • Hypoparathyroidism
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LO7 Understand the anatomy, physiology and pathologies of the respiratory system	7.1. Explain the structure and function of the respiratory system	• Nose • Nasal cavity • Mouth • Pharynx • Larynx • Trachea • Bronchi • Bronchioles • Alveoli • Lungs (including lobes) • Ribs • Pleura (visceral, parietal, pleural cavity) • Diaphragm • Intercostal muscles • The interrelationship of the respiratory system with other systems of the body to include: - Circulatory system - Nervous system - Muscular system
	7.2. Describe the stages of respiration	• Ventilation • Pulmonary gas exchange • Gas transport • Peripheral gas exchange

	7.3. Explain the process of gaseous exchange	• External respiration, i.e. the process and mechanism of breathing/ventilation to include: - Inhalation and the organs involved - Expiration and the organs involved - Process of diffusion in the alveoli • Internal respiration to include: - The way in which the transport and exchange of gases takes place between the cells and the circulatory system • The chemical control of the respiration to include: - Position, function and role of the chemo-receptors • The nervous control of respiration to include: - Role of the brain, i.e. the pons Varolii and medulla oblongata in the process of respiration
	7.4. Analyse the pathologies of the respiratory system	• Asthma • Bronchitis • Cancer • Common cold • Cough • Emphysema • Hay fever • Influenza • Laryngitis • Pleurisy • Pharyngitis • Pneumonia • Pulmonary embolism • Rhinitis • Sinusitis • Smoking • Stress • Tonsillitis • Tuberculosis (TB) • Bronchiolitis • Cor pulmonale • Chronic obstructive airways disease/chronic obstructive pulmonary disorder (COPD) • Cystic fibrosis

		• Hyperventilation • Lung cancer • Pertussis • Pneumothorax • Pulmonary fibrosis • Sarcoidosis • Severe acute respiratory syndrome (SARS) • Snoring • Tracheitis • Modified respiratory movements to include: - Crying - Coughing - Hiccoughs - Laughing - Sighing - Sneezing - Talking - Yawning
LO8 Understand the anatomy, physiology and pathologies of the cardiovascular system	8.1. Explain the structure and function of the cardiovascular system	• Heart • Arteries • Arterioles • Veins • Venules • Capillaries • Transportation • Protection • Regulation • Pulmonary circulation to include: - Way in which the blood circulates from the heart to the lungs and back to the heart - Vessels in which the blood is carried - Whether the blood is oxygenated or deoxygenated - Process of gaseous exchange • Systemic circulation to include: - The structure and function of the systemic circulation - The coronary circulation

	8.2. Explain the composition and functions of the blood	• Erythrocytes • Leucocytes • Thrombocytes (platelets) • Plasma and plasma proteins • Transportation • Protection • Regulation • The process of blood clotting/coagulation to include: - Thrombocytes - Thromboplastin - Prothrombin - Calcium - Thrombin - Fibrinogen - Fibrin
	8.3. Explain the location, structure and function of the heart	• Superior vena cava • Inferior vena cava • Right atrium • Tricuspid valve • Right ventricle • Pulmonary valve • Pulmonary artery • Septum • Pulmonary veins • Left atrium • Mitral (bicuspid) valve • Left ventricle • Aorta • Aortic arch • Endocardium • Myocardium • Pericardium • The cardiac cycle
	8.4. Explain the types of blood vessel	• Arteries • Arterioles • Veins • Venules

		• Capillaries
	8.5. Identify the major blood vessels of the body	• The position of the main arteries and veins of the body to include: - Main arteries of the head and neck ▪ Innominate ▪ Common carotid ▪ Internal carotid ▪ External carotid ▪ Facial ▪ Occipital ▪ Superficial temporal - Main veins of the head and neck ▪ Posterior external jugular ▪ Occipital ▪ Superficial temporal ▪ Maxillary ▪ Anterior facial ▪ Common facial ▪ Internal jugular ▪ External jugular - Main arteries of the body ▪ Coronary artery ▪ Ascending aorta ▪ Descending aorta ▪ Left common carotid ▪ Left subclavian ▪ Right common carotid ▪ Right subclavian ▪ Intercostal ▪ Pulmonary ▪ Right hepatic ▪ Splenic ▪ Renal ▪ Superior mesenteric ▪ Right iliac ▪ Inferior mesenteric ▪ Left iliac ▪ Vertebral ▪ Axillary ▪ Brachial

		▪ Right ulnar ▪ Left ulnar ▪ Right radial ▪ Left radial ▪ Right deep palmar arch ▪ Left deep palmar arch ▪ Right superficial palmar arch ▪ Left superficial palmar arch ▪ External iliac ▪ Left femoral ▪ Right femoral ▪ Left popliteal ▪ Right popliteal ▪ Left anterior tibial ▪ Right anterior tibial ▪ Left posterior tibial ▪ Right posterior tibial ▪ Plantar arch ▪ Digital arteries - Main veins of the body ▪ Inferior vena cava ▪ Pulmonary ▪ Right hepatic ▪ Hepatic portal ▪ Splenic ▪ Right renal ▪ Right iliac ▪ Left iliac ▪ Right axillary ▪ Left axillary ▪ Right brachial ▪ Left brachial ▪ Right basilic ▪ Left basilic ▪ Right cephalic ▪ Left cephalic ▪ Right subclavian ▪ Left subclavian ▪ Long saphenous
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		▪ Left short saphenous ▪ Right short saphenous ▪ Dorsal venous arch ▪ Left femoral ▪ Right femoral ▪ Left popliteal ▪ Right popliteal ▪ Right posterior tibial ▪ Left posterior tibial ▪ Right anterior tibial ▪ Left anterior tibial
	8.6. Define blood pressure	• Blood pressure and pulse rate and how they are measured
	8.7. Explain the factors that affect blood pressure	• Factors which produce, maintain and affect blood pressure and pulse rate • Systolic • Diastolic • Way in which blood pressure is measured - Sphygmomanometer • The conditions of high and low blood pressure to include: - Causes and effects of hypo and hyper tension - Way in which blood pressure can be influenced by complementary therapies • The effects of exercise on the cardiovascular system
	8.8. Analyse the pathologies of the cardiovascular system	• Anaemia • Angina • Aneurysm • Arteriosclerosis • Atherosclerosis/atheroma • Cancer • Coronary thrombosis • Deep vein thrombosis (DVT) • Haemophilia • Haematoma • Haemorrhoids • HIV/AIDS • High cholesterol • High blood pressure (hypertension)

		• Leukaemia • Low blood pressure (hypotension) • Hepatitis A, B & C • Phlebitis • Septicaemia • Stress • Thrombus • Varicose veins • Cardiac arrhythmia - Tachycardia - Bradycardia • Cardiac failure • Epistaxis (nosebleeds) • Gangrene • Heart disease • Hole in the heart (septal defects) • Intermittent claudication • Myocardial infarction • Palpitations • Pulmonary embolism • Raynaud's disease • Sickle cell anaemia • Thalassaemia • Varicose ulcers
LO9 Understand the anatomy, physiology and pathologies of the lymphatic system	9.1. Explain the structure and function of the lymphatic system	• Lymphatic capillaries • Lymphatic vessels • Lymphatic nodes • Lymphatic ducts • Immune response • Protection • Transportation • The interrelationship between the circulatory/lymphatic systems and the muscular, digestive and immune systems to include: - Way in which blood becomes tissue fluid - Way in which excess tissue fluid is picked up by the lymphatic capillaries

		- Route which the lymph takes before it returns to the circulatory system
	9.2. Describe the composition of lymph	• Lymph • Leucocytes • Lymphocytes • Waste products
	9.3. Explain the location and function of the major lymphatic nodes and ducts	• The position of the lymph nodes of the body and the way in which lymph is moved around the body • Superficial and deep cervical • Submandibular • Thoracic duct • Cisterna chyli • Right lymphatic duct • Axillary • Mammary • Supratrochlear • Inguinal • Popliteal • Anterior auricular • Posterior auricular • Occipital
	9.4. Explain the location and function of lymphatic organs	• The structure and function of lymphatic tissue and the areas in which it can be found in the body • Spleen • Thymus • Tonsils and adenoids • Peyer's patches • Appendix
	9.5. Explain the principles of immunity	• Antibodies • Antigens • The inflammatory response • Immune response • Acquired immunity – natural and artificial
	9.6. Analyse the pathologies of the lymphatic system	• Allergies • Cancer • Cellulitis

		• HIV/AIDS • Infectious mononucleosis (glandular fever) • Lymphadenitis • Lymphoedema • Oedema/water retention • Hodgkin's disease • Non-Hodgkin's lymphoma • Hashimoto's thyroiditis • Lymphoma
LO10 Understand the anatomy, physiology and pathologies of the digestive system	10.1. Explain the structure and function of the digestive system	• Mouth • Tongue • Teeth • Pharynx • Salivary glands • Epiglottis • Alimentary canal • Oesophagus • Stomach • Pancreas • Liver • Gall bladder • Small intestine - Duodenum - Jejunum - Ileum • Appendix • Ileo-caecal valve • Large intestine • Rectum • Anus • Accessory organs • Breakdown of foodstuffs • Absorption of nutrients • Assimilation of nutrients • Excretion of waste

		• The interrelationship of the digestive system with other systems of the body: - Circulatory - Endocrine - Lymphatic - Muscular - Nervous
	10.2. Explain the processes of digestion	• Mastication • Peristalsis • Ingestion • Digestion • Absorption • Defecation • Action of rennin, hydrochloric acid and pepsin in the stomach • Action of pancreatic juice, i.e. trypsin and trypsinogen, lipase, amylase on peptones, fats and polysaccharides • Action of bile on fat • Action of intestinal juice – maltase, sucrase, lactase on disaccharides • The process of absorption of nutrients to include: - Process of absorption of nutrients by the villi and lacteals contained in the small intestine • The function of the following and where in the digestive system they occur to include: - Enzymes - Proteins - Peptones - Polypeptides - Amino acids - Carbohydrates - Monosaccharides - Disaccharides - Polysaccharides - Fats - Fatty acids - Glycerol
	10.3. Identify the location of the organs involved in digestion	• Mouth • Tongue

		• Teeth • Pharynx • Salivary glands • Epiglottis • Alimentary canal • Oesophagus • Stomach • Pancreas • Liver • Gall bladder • Small intestine - Duodenum - Jejunum - Ileum • Appendix • Ileo-caecal valve • Large intestine • Rectum • Anus • Accessory organs
	10.4. Analyse the pathologies of the digestive system	• Anorexia nervosa • Appendicitis • Bulimia nervosa • Cancer • Cirrhosis of the liver • Constipation • Coeliac's disease • Diarrhoea • Flatulence • Gall stones • Gingivitis • Haemorrhoids • Heartburn - reflux oesophagitis • Hepatitis • Hernia - Abdominal - Hiatus

		• Hiccoughs • Indigestion (dyspepsia) • Irritable bowel syndrome (IBS) • Jaundice • Nausea • Obesity • Stress • Ulcer - Aphthous (mouth) - Duodenal - Gastric - Peptic - Oesophageal • Candida • Colitis • Ulcerative colitis • Crohn's disease • Diverticulosis • Diverticulitis • Enteritis • Gastritis • Inflamed gall bladder • Pernicious anaemia
LO11 Understand the anatomy, physiology and pathologies of the urinary system	11.1. Explain the structure and function of the urinary system	• Nephron • Kidney (cortex and medulla) • Renal pelvis • Ureters • Bladder • Urethra • Filtration • Regulation of blood pressure • The process and function of filtration to include: - Functions of the bowman's capsule - Filtration - Re-absorption - Secretion/micturition

		- Electrolyte balance • The interrelationship of the urinary system with other body systems to include: - Circulatory system - Endocrine system - Skeletal system - The skin
	11.2. Explain the production and content of urine	• The composition of urine - 2% urea - 96% water - 2% other substances, e.g. ammonia, sodium, potassium, phosphates, chlorides, sulphates, and excess vitamins - Colour is formed from bilirubin (bile pigment) • Urine production - Cold and hot weather - Activity and inactivity - Stress - Water consumption • Function of osmosis in relation to the urinary system to include: - Antidiuretic hormone (ADH)/vasopressin
	11.3. Analyse the pathologies of the urinary system	• Cancer • Cystitis • Diabetes insipidus • Glomerulonephritis • Kidney stones • Nephritis (Bright's disease) • Pyelonephritis/glomerulonephritis • Urinary tract infections • Urethritis • Dysuria • Enuresis • Incontinence • Nephroblastoma • Renal failure • Renal colic • Uraemia

LO12 Understand the anatomy, physiology and pathologies of the reproductive system	12.1. Explain the structure and function of the reproductive system	• The organs of the male reproductive system - Testes - Vas deferens - Epididymus - Prostate gland - Scrotum - Penis - Sperm - Effects of puberty • The organs of the female reproductive system - Vulva - Labia - Vagina - Cervix - Uterus - Fallopian tubes - Ovaries - Ovum - Production of sperm and ova - Reproduction
	12.2. Explain the key stages of the human reproductive cycle	• Male reproductive stages - Puberty - Menopause • Female reproductive stages - Puberty - Pregnancy - Menopause • Menstrual cycle - Menstrual - Proliferative - Secretory - Formation of the Graafian follicle - Formation of the corpus luteum • Pregnancy - Fertilisation - Post-fertilisation - Cell division - Embryo formation

		- Foetal development - Parturition - Lactation • Menopause - Cessation of menses - Vasodilation ▪ Sweating ▪ Hot flushes - Palpitations - Sleep disturbances - Bone loss - Thinning of skin and hair - Atrophy of reproductive organs - Mood swings - Hormone replacement therapy (HRT) • The structure and function of the breast and breast disorders to include: - Fatty tissue - Ducts - Nipple - Areola - Lobules - Breast pain - Cysts - Galactorrhea - Fibroadenomas - Mastitis • Factors causing infertility to include: - Female infertility ▪ Endocrine disorders ▪ Obstructions ▪ Malnutrition/low body weight ▪ Endometriosis ▪ Anatomical abnormalities - Male infertility ▪ Endocrine disorders ▪ Obstructions ▪ Sexual dysfunction ▪ Vasectomy
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		▪ Drugs/medication ▪ Low sperm count
	12.3. Analyse the pathologies of the reproductive system	• Chlamydia • Ectopic pregnancy • Endometriosis • Fibroids • Hysterectomy • Menstrual disorders - Amenorrhoea - Dysmenorrhoea - Menorrhagia • Pre-menstrual syndrome • Polycystic ovarian syndrome (PCOS) • Prostatitis • Menopause • Stress • Vulvovaginal candidiasis (thrush) • Benign prostatic enlargement/hyperplasia • Cancer - Testicular - Prostate - Breast - Cervical - Ovarian • Frigidity • Impotence • Ovarian cysts • Pelvic inflammatory disease • Pre-eclampsia • Prolapse – uterus/vagina • Sexually transmitted diseases - Gonorrhoea - Syphilis - Trichomonas • Vaginitis • Toxic shock syndrome

Assessment

MCQ

All learners will be assessed via an externally set multiple choice theory examination for this unit.

Guide to taught content

The content contained within the unit specification is not prescriptive or exhaustive but is intended to provide helpful guidance to teachers and learners with the key areas that will be covered within the unit, and, relating to the kinds of evidence that should be provided for each assessment objective specific to the unit learning outcomes.

Document History

Version	Issue Date	Changes	Role
v1	26/09/2019	First published	Qualifications and Regulation Co-ordinator
v2	05/02/2020	Amended LO6 terminology to “endocrine”	Product and Regulation Manager
v3	22/06/2026	Rebranding	Development Administrator