

ITEC Level 3

Unit 383 – Knowledge of Anatomy, Physiology and Pathology for Complementary Therapies

Recommended Minimum Guided Learning Hours – 94

Unit Reference Number: R/503/7640

Learning Outcome

The Learner will:

1. Understand the organisation of the body

Assessment Criteria

The Learner can:

- 1.1 Describe the anatomical regions of the body

- 1.2 Describe the planes of the body

- 1.3 Describe the directional terms of the body

- 1.4 Describe the quadrants of the body

- 1.5 Describe the chemical organisation of the body

- 1.6 Describe the structure, function and types of cell

Taught Content

1.1.1 To include:

- 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

1.2.1 To include:

- Sagittal ▪ Coronal/Frontal ▪ Transverse

1.3.1 To include:

- Superior ▪ Caudal/Inferior ▪ Anterior/Ventral ▪ Posterior/Dorsal ▪ Medial ▪ Lateral
- Proximal ▪ Distal ▪ Superficial ▪ Deep ▪ Ipsilateral ▪ Contralateral ▪ Parietal ▪ Visceral

1.4.1 To include:

- Left Upper Quadrant (LUQ) ▪ Right Upper Quadrant (RUQ) ▪ Left Lower Quadrant (LLQ)
- Right Lower Quadrant (RLQ)

1.5.1 To include:

- Atoms ▪ Molecules ▪ Inorganic compounds ▪ Organic compounds

1.6.1 To include:

- Cell Membrane ▪ Cytoplasm ▪ Mitochondria ▪ Ribosome ▪ Endoplasmic Reticulum ▪ Golgi
- Apparatus ▪ Lysosomes ▪ Vacuoles ▪ Centrioles ▪ Centrosome ▪ Nuclear Membrane
- Nucleus ▪ Nucleolus ▪ Chromatin ▪ Chromosomes ▪ Chromatids ▪ Centromere

1.6.2 To include:

- Movement ▪ Respiration ▪ Sensitivity ▪ Growth ▪ Reproduction ▪ Excretion ▪ Metabolism
- Anabolism ▪ Catabolism

1.6.3 The process of Mitosis to include:

- Prophase ▪ Metaphase ▪ Anaphase ▪ Telophase ▪ Interphase

1.6.4 How substances enter and leave the cell to include:

- Diffusion ▪ Osmosis ▪ Dissolution ▪ Active Transport ▪ Filtration ▪ Phagocytosis
- Pinocytosis

1.6.5 Define Histology

1.6.6 The structure and function of the main types of tissue in the body

To include the following, giving examples:

◆ **Epithelial tissue**

- Simple: ▪ Squamous ▪ Cuboidal ▪ Columnar ▪ Ciliated ▪ Compound: ▪ 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

1.6.7 Define the following:

- Anatomy ▪ Physiology ▪ Pathology ▪ The acute condition ▪ The chronic condition ▪ The emergency condition

<p>2.3 Explain the structure, function and growth cycle of the nails</p>	<p>2.3.1 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</p> <p>2.3.2 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</p> <p>2.3.3 The factors which affect nail growth to include: ▪ Health ▪ Age ▪ Diet ▪ Medication ▪ Climate ▪ Damage ▪ Lifestyle</p>
<p>2.4 Analyse the pathologies of the skin</p>	<p>2.4.1 To include: ♦ 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 ♦ Parasitological infestation ▪ Pediculosis – capitis, corporis, pubis ▪ Scabies ♦ Pigmentation disorders ▪ Albinism ▪ Chloasma ▪ Dermatitis 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 ▪ 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)</p> <p>2.4.2 The different skin cancers and their possible causes to include: ▪ Basal Cell Carcinoma ▪ Squamous Cell Carcinoma ▪ Malignant Melanoma</p>

<p>2.5 Analyse the pathologies of the hair</p> <p>2.6 Analyse the pathologies of the nails</p>	<p>2.5.1 To include: <ul style="list-style-type: none"> ▪ Alopecia ▪ Androgenic Alopecia ▪ Hirsutism ▪ Ingrown hair ▪ Pediculosis capitis ▪ Sycosis barbae </p> <p>2.6.1 To include: <ul style="list-style-type: none"> ▪ 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 Ungium ▪ Tinea Pedis ▪ Whitlow </p>
<p>Learning Outcome The Learner will:</p> <p>3. Understand the anatomy, physiology and pathologies of the skeletal system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>3.1 Explain the structure and classification of bones</p> <p>3.2 Explain the structure, function and growth of the skeletal system</p>	<p>3.1.1 To include: <ul style="list-style-type: none"> ▪ Compact ▪ Cancellous ▪ Long ▪ Short ▪ Flat ▪ Irregular ▪ Sesamoid ▪ Examples of where in the body they would be found </p> <p>3.2.1 To include: <ul style="list-style-type: none"> ▪ 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 </p> <p>3.2.2 The bones of the skeleton to include:</p> <ul style="list-style-type: none"> ◆ Cranium <ul style="list-style-type: none"> ▪ Parietal ▪ Frontal ▪ Ethmoid ▪ Sphenoid ▪ Occipital ▪ Temporal ◆ Facial <ul style="list-style-type: none"> ▪ Nasal ▪ Zygomatic ▪ Maxilla ▪ Lacrimal ▪ Turbinator ▪ Palatine ▪ Mandible ▪ Vomer ▪ Hyoid ◆ Vertebrae <ul style="list-style-type: none"> ▪ 7 Cervical ▪ 12 Thoracic ▪ 5 Lumbar ▪ 5 Sacrum ▪ 4 Coccyx ▪ Intervertebral discs ◆ Shoulder Girdle <ul style="list-style-type: none"> ▪ Scapula ▪ Clavicle

<p>3.3 Explain the types of joints and their range of movements</p> <p>3.4 Explain the functions of the arches of the feet</p> <p>3.5 Analyse the pathologies of the skeletal system</p>	<ul style="list-style-type: none"> ◆ Thoracic Cage <ul style="list-style-type: none"> ▪ Ribs ▪ Sternum ◆ Pelvic Girdle <ul style="list-style-type: none"> ▪ Innominate bones: Ischium ▪ Ilium ▪ Pubis ◆ Upper Limb <ul style="list-style-type: none"> ▪ Humerus ▪ Ulna ▪ Radius ▪ Carpals: Scaphoid, Lunate, Triquetral, Pisiform, Trapezium, Trapezoid, Capitate, Hamate ▪ Metacarpals ▪ Phalanges ◆ Lower Limb <ul style="list-style-type: none"> ▪ Femur ▪ Tibia ▪ Fibula ▪ Patella ▪ Tarsals: Talus, Calcaneus, Navicular, Cuneiforms (Medial, Intermediate, Lateral), Cuboid ▪ Metatarsals ▪ Phalanges <p>3.3.1 The different types of joints and where they occur in the body to include:</p> <ul style="list-style-type: none"> ▪ Fixed/fibrous ▪ Slightly moveable/cartilaginous ▪ Freely moveable/synovial ▪ Ball and Socket ▪ Condylloid ▪ Hinge ▪ Pivot ▪ Gliding ▪ Saddle ▪ Ligament(s) and where they are found <p>3.4.1 To include:</p> <ul style="list-style-type: none"> ▪ Longitudinal arches ▪ Transverse arch <p>3.5.1 To include:</p> <ul style="list-style-type: none"> ▪ Arthritis ▪ Ankylosing spondylitis ▪ Cancer ▪ Carpal Tunnel Syndrome ▪ Cervical spondylitis ▪ Fractures ▪ Ganglion ▪ Gout ▪ Osteo Arthritis ▪ 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 <p>3.5.2 Recognition and possible causes of postural deformities to include:</p> <ul style="list-style-type: none"> ▪ Congenital ▪ Environmental ▪ Traumatic ▪ Kyphosis ▪ Lordosis ▪ Scoliosis
<p>Learning Outcome The Learner will:</p> <p>4. Understand the anatomy, physiology and pathologies of the muscular system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>4.1 Explain the structure, function, growth and repair of the muscular system</p>	<p>4.1.1 To include:</p> <ul style="list-style-type: none"> ▪ Voluntary/skeletal (striated) ▪ Involuntary/smooth (non-striated) ▪ Cardiac ▪ Movement ▪ Joint stabilisation ▪ Postural maintenance ▪ Temperature control ▪ Sliding filament theory ▪ Nutrition (protein synthesis) ▪ Amino acids

<p>4.2 Explain the location and action of muscle groups within the muscular system</p>	<p>4.2.1 To include:</p> <ul style="list-style-type: none"> ◆ Trunk/torso <ul style="list-style-type: none"> ▪ 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 ▪ Intercostals ◆ Arm/Hand <ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ▪ Iliacus ▪ Psoas ▪ Quadriceps: Rectus Femoris, Vastus Lateralis, Vastus Medialis, 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 <ul style="list-style-type: none"> ▪ Gastrocnemius ▪ Soleus ▪ Peroneus Longus ▪ Peroneus Brevis ▪ Tibialis Anterior ▪ Tibialis Posterior ▪ Extensor Digitorum Longus ▪ Extensor Hallucis Longus ▪ Flexor Digitorum Longus ▪ Peroneus Tertius ▪ Digitorum Brevis ▪ Abductor Hallucis ▪ Achilles Tendon ▪ Flexor Hallucis Longus ◆ Face, neck and scalp <ul style="list-style-type: none"> ▪ Occipitalis ▪ Frontalis ▪ Procerus nasi ▪ Nasalis ▪ Levator Labii Superioris ▪ Levator Anguli Oris ▪ Zygomaticus ▪ Orbicularis Oris ▪ Mentalis ▪ Depressor Labii Inferioris ▪ Depressor Anguli Oris ▪ Buccinator ▪ Risorius ▪ Medial and Lateral Pterygoids ▪ Masseter ▪ Temporalis ▪ Orbicularis Oculi ▪ Levator palpebrae ▪ Sternocleidomastoid ▪ Splenius capitis ▪ Trapezius ▪ Platysma <p>4.2.2 The following terms in relation to the muscular system to include:</p> <ul style="list-style-type: none"> ▪ Action ▪ Agonist ▪ Antagonist ▪ Attachment ▪ Belly ▪ Contractibility ▪ Elasticity ▪ Excitability ▪ Extensibility ▪ Fatigue ▪ Fascia ▪ Insertion ▪ Levers ▪ Origin ▪ Tendon ▪ Tone ▪ Tension ▪ Flexion ▪ Extension ▪ Abduction ▪ Adduction ▪ Rotation ▪ Supination ▪ Pronation ▪ Dorsiflexion ▪ Plantarflexion ▪ Eversion ▪ Inversion ▪ Circumduction ▪ Protraction ▪ Retraction ▪ Depression ▪ Elevation
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<p>4.3 Explain the principles of muscle contraction</p> <p>4.4 Analyse the pathologies of the muscular system</p>	<p>4.3.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>4.4.1 To include:</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>5. Understand the anatomy, physiology and pathologies of the nervous system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>5.1 Describe the structure and function of each component of the nervous system</p>	<p>5.1.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>5.1.2 The structure and functions of the Central Nervous System (CNS), the Peripheral and the Autonomic Nervous System (ANS) to include:</p> <ul style="list-style-type: none"> ◆ Central Nervous System <ul style="list-style-type: none"> ▪ Brain ▪ Spinal Cord ◆ Peripheral Nervous System <ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ▪ Sympathetic ▪ Parasympathetic

<p>5.2 Analyse the pathologies of the nervous system</p>	<p>5.1.3 The structure and function of the brain and spinal cord to include:</p> <ul style="list-style-type: none"> ◆ Brain ▪ Meninges – Pia, Arachnoid and Dura mater ▪ Cerebrospinal Fluid ▪ Cerebrum ▪ Cerebellum ▪ Pons varolii ▪ Medulla Oblongata ▪ Hypothalamus ▪ Thalamus ▪ Brain Stem ◆ Spinal cord ▪ White Matter ▪ Grey Matter ▪ Dura, Arachnoid and Pia Mater ▪ Cerebrospinal Fluid <p>5.1.4 How a nerve impulse is created to include:</p> <ul style="list-style-type: none"> ▪ Changes in temperature, pressure and chemicals ▪ Neurotransmitters ▪ Potassium and sodium ions <p>5.2.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>5.2.2 The effect of stress on the nervous system</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>6. Understand the anatomy, physiology and pathologies of the endocrine system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>6.1 Explain the structure and function of the endocrine system</p>	<p>6.1.1 To include:</p> <ul style="list-style-type: none"> ▪ Ductless glands ▪ Chemical messengers <p>6.1.2 The interrelationship of the endocrine system with other systems to include:</p> <ul style="list-style-type: none"> ▪ Nervous system including the hypothalamus ▪ Circulatory system ▪ Digestive system ▪ Reproductive system ▪ Integumentary system

6.2	Explain the location of endocrine glands	6.2.1 To include: ▪ Pituitary ▪ Thyroid ▪ Parathyroids ▪ Thymus ▪ Pineal ▪ Pancreas ▪ Adrenal medulla ▪ Adrenal cortex ▪ Ovaries ▪ Testes
6.3	Explain the function of the endocrine glands	6.3.1 To include: ▪ 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	6.4.1 Hormones secreted, their target sites and the result of hypo and hyper secretion of each to include: ◆ Pituitary Posterior Lobe ▪ Oxytocin ▪ Antidiuretic hormone (ADH or vasopressin) Anterior lobe ▪ Prolactin ▪ Human growth Hormone (HGH) ▪ Thyroid Stimulating Hormone (TSH) ▪ Adrenocorticotrophin Hormone (ACTH) ▪ Luteinising Hormone (LH) ▪ Follicle Stimulating Hormone (FSH) ▪ Interstitial cell stimulating Hormone (ICH) ▪ Melanin Stimulating Hormone (MSH) ◆ Thyroid gland ▪ Thyroxin ▪ 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

<p>6.5 Analyse the pathologies of the endocrine systems</p>	<p>6.4.2 The exocrine glands to include: <ul style="list-style-type: none"> ▪ Salivary ▪ Mammary ▪ Sebaceous ▪ Eccrine ▪ Apocrine </p> <p>6.5.1 To include: <ul style="list-style-type: none"> ▪ Addison's disease ▪ Cancer ▪ Cushings syndrome ▪ Diabetes Insipidus ▪ Diabetes Mellitus ▪ Goitre ▪ Grave's disease ▪ Hyperthyroidism - thyrotoxicosis ▪ Hypothyroidism ▪ Insomnia ▪ Polycystic Ovarian Syndrome ▪ Stress ▪ Myxoedema ▪ Acromegaly ▪ Gigantism ▪ Hyperparathyroidism ▪ Hypoparathyroidism </p>
<p>Learning Outcome The Learner will: 7. Understand the anatomy, physiology and pathologies of the respiratory system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>7.1 Explain the structure and function of the respiratory system</p> <p>7.2 Describe the stages of respiration</p> <p>7.3 Explain the process of gaseous exchange</p>	<p>7.1.1 To include: <ul style="list-style-type: none"> ▪ Nose ▪ Nasal cavity ▪ Mouth ▪ Pharynx ▪ Larynx ▪ Trachea ▪ Bronchi ▪ Bronchioles ▪ Alveoli ▪ Lungs (including lobes) ▪ Ribs ▪ Pleura (visceral, parietal, pleural cavity) ▪ Diaphragm ▪ Intercostal muscles </p> <p>7.1.2 The interrelationship of the respiratory system with other systems of the body to include: <ul style="list-style-type: none"> ▪ Circulatory system ▪ Nervous system ▪ Muscular system </p> <p>7.2.1 To include: <ul style="list-style-type: none"> ▪ Ventilation ▪ Pulmonary gas exchange ▪ Gas transport ▪ Peripheral gas exchange </p> <p>7.3.1 External respiration, i.e. the process and mechanism of breathing/ventilation to include: <ul style="list-style-type: none"> ▪ Inhalation and the organs involved ▪ Expiration and the organs involved ▪ Process of diffusion in the alveoli </p> <p>7.3.2 Internal respiration to include: <ul style="list-style-type: none"> ▪ The way in which the transport and exchange of gases takes place between the cells and the circulatory system </p> <p>7.3.3 The chemical control of the respiration to include: <ul style="list-style-type: none"> ▪ Position, function and role of the chemo-receptors </p>

<p>7.4 Analyse the pathologies of the respiratory system</p>	<p>7.3.4 The nervous control of respiration to include:</p> <ul style="list-style-type: none"> ▪ Role of the brain, i.e. the pons varolii and medulla oblongata in the process of respiration <p>7.4.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>7.4.2 Modified respiratory movements to include:</p> <ul style="list-style-type: none"> ▪ Crying ▪ Coughing ▪ Hiccoughs ▪ Laughing ▪ Sighing ▪ Sneezing ▪ Talking ▪ Yawning
<p>Learning Outcome The Learner will:</p> <p>8. Understand the anatomy, physiology and pathologies of the cardiovascular system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>8.1 Explain the structure and function of the cardiovascular system</p> <p>8.2 Explain the composition and functions of the blood</p>	<p>8.1.1 To include:</p> <ul style="list-style-type: none"> ▪ Heart ▪ Arteries ▪ Arterioles ▪ Veins ▪ Venules ▪ Capillaries ▪ Transportation ▪ Protection ▪ Regulation <p>8.1.2 Pulmonary circulation to include:</p> <ul style="list-style-type: none"> ▪ 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 <p>8.1.3 Systemic circulation to include:</p> <ul style="list-style-type: none"> ▪ The structure and function of the systemic circulation ▪ The coronary circulation <p>8.2.1 To include:</p> <ul style="list-style-type: none"> ▪ Erythrocytes ▪ Leucocytes ▪ Thrombocytes (Platelets) ▪ Plasma and plasma proteins ▪ Transportation ▪ Protection ▪ Regulation <p>8.2.2 The process of blood clotting/coagulation to include:</p> <ul style="list-style-type: none"> ▪ Thrombocytes ▪ Thromboplastin ▪ Prothrombin ▪ Calcium ▪ Thrombin ▪ Fibrinogen ▪ Fibrin

8.3 Explain the location, structure and function of the heart	8.3.1 To include: <ul style="list-style-type: none"> ▪ 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	8.4.1 To include: <ul style="list-style-type: none"> ▪ Arteries ▪ Arterioles ▪ Veins ▪ Venules ▪ Capillaries
8.5 Identify the major blood vessels of the body	8.5.1 The position of the main arteries and veins of the body to include: <ul style="list-style-type: none"> ◆ 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 ▪ 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	8.6.1 To include: <ul style="list-style-type: none"> ▪ Blood pressure and pulse rate and how they are measured
8.7 Explain the factors that affect blood pressure	8.7.1 To include: <ul style="list-style-type: none"> ▪ Factors which produce, maintain and affect blood pressure and pulse rate

<p>8.8 Analyse the pathologies of the cardiovascular system</p>	<ul style="list-style-type: none"> ▪ Systolic ▪ Diastolic ▪ Way in which blood pressure is measured ▪ Sphygmomanometer <p>8.7.2 The conditions of high and low blood pressure to include:</p> <ul style="list-style-type: none"> ▪ Causes and effects of hypo and hyper tension ▪ Way in which blood pressure can be influenced by complementary therapies <p>8.7.3 Describe the effects of exercise on the cardiovascular system</p> <p>8.8.1 To include:</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>9. Understand the anatomy, physiology and pathologies of the lymphatic system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>9.1 Explain the structure and function of the lymphatic system</p> <p>9.2 Describe the composition of lymph</p> <p>9.3 Explain the location and function of the major lymphatic nodes and ducts</p>	<p>9.1.1 To include:</p> <ul style="list-style-type: none"> ▪ Lymphatic capillaries ▪ Lymphatic vessels ▪ Lymphatic nodes ▪ Lymphatic ducts ▪ Immune response ▪ Protection ▪ Transportation <p>9.1.2 The interrelationship between the Circulatory/ Lymphatic systems and the Muscular, Digestive and Immune systems to include:</p> <ul style="list-style-type: none"> ▪ 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 <p>9.2.1 To include:</p> <ul style="list-style-type: none"> ▪ Lymph ▪ Leucocytes ▪ Lymphocytes ▪ Waste products <p>9.3.1 To include:</p> <ul style="list-style-type: none"> ▪ 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

<p>9.4 Explain the location and function of lymphatic organs</p> <p>9.5 Explain the principles of immunity</p> <p>9.6 Analyse the pathologies of the lymphatic system</p>	<ul style="list-style-type: none"> ▪ Right lymphatic duct ▪ Axillary ▪ Mammary ▪ Supratrochlear ▪ Inguinal ▪ Popliteal ▪ Anterior auricular ▪ Posterior auricular ▪ Occipital <p>9.4.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>9.5.1 To include:</p> <ul style="list-style-type: none"> ▪ Antibodies ▪ Antigens ▪ The inflammatory response ▪ Immune response ▪ Acquired immunity – natural and artificial <p>9.6.1 To include:</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>10. Understand the anatomy, physiology and pathologies of the digestive system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>10.1 Explain the structure and function of the digestive system</p> <p>10.2 Explain the processes of digestion</p>	<p>10.1.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>10.1.2 The interrelationship of the Digestive system with other systems of the body To include:</p> <ul style="list-style-type: none"> ▪ Circulatory ▪ Endocrine ▪ Lymphatic ▪ Muscular ▪ Nervous <p>10.2.1 To include:</p> <ul style="list-style-type: none"> ▪ 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

<p>10.3 Identify the location of the organs involved in digestion</p> <p>10.4 Analyse the pathologies of the digestive system</p>	<p>10.2.2 The process of absorption of nutrients to include:</p> <ul style="list-style-type: none"> ▪ Process of absorption of nutrients by the villi and lacteals contained in the small intestine <p>10.2.3 The function of the following and where in the digestive system they occur to include:</p> <ul style="list-style-type: none"> ▪ Enzymes ▪ Proteins ▪ Peptones ▪ Polypeptides ▪ Amino acids ▪ Carbohydrates ▪ Monosaccharides ▪ Disaccharides ▪ Polysaccharides ▪ Fats ▪ Fatty acids ▪ Glycerol <p>10.3.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>10.4.1 To include:</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>11. Understand the anatomy, physiology and pathologies of the urinary system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>11.1 Explain the structure and function of the urinary system</p>	<p>11.1.1 To include:</p> <ul style="list-style-type: none"> ▪ Nephron ▪ Kidney (cortex and medulla) ▪ Renal pelvis ▪ Ureters ▪ Bladder ▪ Urethra ▪ Filtration ▪ Regulation of blood pressure <p>11.1.2 The process and function of filtration to include:</p> <ul style="list-style-type: none"> ▪ Functions of the Bowman's capsule ▪ Filtration ▪ Re-absorption ▪ Secretion/ Micturition ▪ Electrolyte balance <p>11.1.3 The interrelationship of the Urinary system with other body systems to include:</p> <ul style="list-style-type: none"> ▪ Circulatory system ▪ Endocrine system ▪ Skeletal system ▪ The Skin

<p>11.2 Explain the production and content of urine</p> <p>11.3 Analyse the pathologies of the urinary system</p>	<p>11.2.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>11.2.2 Function of Osmosis in relation to the Urinary system to include:</p> <ul style="list-style-type: none"> ▪ Antidiuretic Hormone (ADH)/Vasopressin <p>11.3.1 To include:</p> <ul style="list-style-type: none"> ▪ 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
<p>Learning Outcome The Learner will:</p> <p>12. Understand the anatomy, physiology and pathologies of the reproductive system</p>	
<p>Assessment Criteria The Learner can:</p>	<p>Taught Content</p>
<p>12.1 Explain the structure and function of the reproductive system</p> <p>12.2 Explain the key stages of the human reproductive cycle</p>	<p>12.1.1 To include:</p> <ul style="list-style-type: none"> ▪ 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 <p>12.2.1 To include:</p> <ul style="list-style-type: none"> ▪ Male reproductive stages ▪ Puberty ▪ Menopause ▪ Female reproductive stages ▪ Puberty ▪ Pregnancy ▪ Menopause <p>Menstrual cycle</p> <ul style="list-style-type: none"> ▪ Menstrual ▪ Proliferative ▪ Secretory ▪ Formation of the Graafian Follicle ▪ Formation of the Corpus Luteum <p>Pregnancy</p> <ul style="list-style-type: none"> ▪ Fertilisation ▪ Post-fertilisation ▪ Cell division ▪ Embryo formation ▪ Foetal development ▪ Parturition ▪ Lactation <p>Menopause</p> <ul style="list-style-type: none"> ▪ 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)

<p>12.3 Analyse the pathologies of the reproductive system</p>	<p>12.2.2 The structure and function of the breast and breast disorders to include:</p> <ul style="list-style-type: none"> ▪ Fatty tissue ▪ Ducts ▪ Nipple ▪ Areola ▪ Lobules ▪ Breast pain ▪ Cysts ▪ Galactorrhea ▪ Fibroadenomas ▪ Mastitis <p>12.2.3 Factors causing infertility to include:</p> <ul style="list-style-type: none"> ▪ Female infertility - Endocrine disorders ▪ Obstructions ▪ Malnutrition/low body weight ▪ Endometriosis ▪ Anatomical abnormalities ▪ Male infertility – Endocrine disorders ▪ Obstructions ▪ Sexual dysfunction ▪ Vasectomy ▪ Drugs/medication ▪ Low sperm count <p>12.3.1 To include:</p> <ul style="list-style-type: none"> ▪ Cancer ▪ 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 ▪ Frigidity ▪ Impotence ▪ Ovarian cysts ▪ Pelvic inflammatory disease ▪ Pre-eclampsia ▪ Prolapse – uterus/vagina ▪ Sexually transmitted diseases – Gonorrhoea, Syphilis, Trichomonas ▪ Vaginitis ▪ Toxic Shock Syndrome
<p>Assessment Unit 383 - Knowledge of Anatomy, Physiology and Pathology for Complementary Therapies All Candidates will be assessed via an externally set multiple choice theory examination for this unit.</p>	<p>See www.itecworld.co.uk for Unit 383 – Knowledge of Anatomy, Physiology and Pathology for Complementary Therapies test specification and sample questions</p>