Guidance for Centres

GA Level 3 Certificate in Anatomy, Physiology and Pathology: Learning Outcomes and Indicative Content

This guidance should be made available to learners, teachers and internal quality assurance staff involved in the delivery of this qualification.

The content is not prescriptive or exhaustive but is intended to provide helpful guidance to teachers and learners with the key areas that should be covered by the programme of learning.

Learning Outcome	The Candidate will:
1	understand the cells and tissues of the body
2	understand the skin, hair and nails
3	understand the skeletal system
4	understand the muscular system
5	understand the nervous system
6	understand the eyes and the ears
7	understand the endocrine system
8	understand the respiratory system
9	understand the cardiovascular system
10	understand the lymphatic system
11	understand the digestive system
12	understand the urinary system
13	understand the reproductive system
14	*understand the pathological disease process**

*Learning Outcome 14 understand the pathological disease process is a learning outcome embedded into the Syllabus Topic areas outlined below. Content relating to this Learning Outcome is presented in *italics*.

Syllabus Topic 1	The Cells and Tissues of the Body
Learning Outcome - The learner will:	understand the structures and functions of cells and tissues in the body
Indicative content:	

Describe the structure of the skin

- Cell membrane
- Nuclear membrane
- Nucleus
- Nucleolus
- Cytoplasm
- Centrosome
- Golgi apparatus

Describe the process of mitosis

- Prophase
- Metaphase
- Anaphase
- Telophase

Explain the term histology

- Definition of histology

Describe the structure and explain the function of the main types of tissue in the body

- Epithelial tissue
    - Simple
    - Squamous
    - Cuboidal
    - Ciliated
    - Columnar
    - Compound
    - Transitional
    - Stratified
- Nervous tissue
- Muscular tissue
    - Striated
    - Non-striated
    - Cardiac
- Connective tissue
    - Areolar
    - Adipose
    - Cartilage (white fibrous, yellow elastic, hyaline)
    - Bone
    - Blood
    - Lymph
- Membranes

- Serous
- Mucus
- Synovial

Explain how substances enter and leave the cell

- Diffusion
- Osmosis
- Dissolution
- Active transport
- Filtration

Syllabus Topic 2	The Skin, Hair and Nails
Learning Outcome - the learner will:	understand the structure, function and pathology of the skin, hair and nails
Indicative content:	

Describe the structure of the skin

- Epidermis
  - Stratum corneum
  - Stratum lucidum
  - Stratum granulosum
  - Stratum spinosum/Malphigian layer
  - Stratum germinativum/Basal layer
  - Melanocytes
- Dermis
  - Blood supply
  - Lymphatic supply
  - Hair follicle
  - Hair
  - Sebaceous gland
  - Sweat glands: Eccrine and apocrine
  - Sensory nerve endings
  - Dermal papilla
  - Collagen
  - Elastin
  - Histeocytes
  - Mast cells
  - Fibroblasts
  - Erector pili muscle
- Subcutaneous layer

Explain the functions of the skin

- Secretion
- Heat regulation
- Absorption
- Protection
- Elimination
- Sensation
- Vitamin D formation (7-dehydro-cholesterol)
- Keratinisation
- Melanin formation

Explain and identify the different skin types

- Dry
- Oily
- Dehydrated
- Sensitive

- Combination

Explain skin diseases and disorders and when they are contra-indicated to treatment

- *Recognition points*
- *Whether congenital, bacterial, viral, fungal or an infestation*
- *whether the condition is contra-indicated*

- *Congenital*
  - *Eczema*
  - *Psoriasis*
  - *Dermatitis*
- *Bacterial*
  - *Acne vulgaris*
  - *Impetigo*
  - *Acne rosacea*
  - *Folliculitis*
  - *Boils*
- *Viral*
  - *Warts*
  - *Verrucas*
  - *Herpes simplex*
  - *Herpes zoster*
- *Fungal*
  - *Tinea corporis*
  - *Tinea pedis*

- *Pigmentation disorders*
  - *Vitiligo*
  - *Albinism*
  - *Chloasma*
  - *Ephelides*
  - *Lentigo*
  - *Moles*
  - *Naevae*
  - *Port wine stain*

- *General disorders*
  - *Broken capillaries*
  - *UV damage*
  - *Urticaria*
  - *Allergic reaction*
  - *Comedones*
  - *Milia*

Explain the different skin cancers and their possible causes

- *Basal cell carcinoma*
- *Squamous cell carcinoma*
- *Malignant melanoma*

Describe the structure of the nail

- Nail root/matrix

- Mantle
- Plate
- Wall
- Grooves
- Bed
- Lunula
- Free edge
- Hyponychium
- Cuticle (eponychium, perionychium)

Describe the function of the nail

- Protection

Describe the structure of the hair

- Arrector pili muscle
- Hair follicle
- Inner root sheath (Henle's Layer, Huxley's Layer, Cuticle Layer)
- Outer root sheath
- Vitreous membrane
- Connective Tissue Sheath
- Root (bulb/matrix, dermal papilla)
- Sebaceous gland
- Shaft (Medulla, Cortex, Cuticle)

Explain and identify the symptoms, causes and effects of diseases and disorders of the nail

- *Nail discoloration*
- *Bacterial paronychia*
- *Chronic paronychia*
- *Traumatic changes to the nail*
- *Elevation of the nail plate (onycholysis)*
- *Ingrown nails*
- *Nail thickening*
- *Nail ridges*
- *Nail splitting*

Describe the different hair types

- Lanugo
- Vellus
- Terminal

Describe the function of the hair

- Insulation
- Protection

Explain the stages of hair growth

- The hair growth cycle
    - Anagen
    - Catagen
    - Telogen

Explain and identify the symptoms, causes and effects of diseases and disorders of the hair

- *Hair shedding*
- *Diffuse / localised alopecia*
- *Hair shaft abnormalities*
- *Excessive growth*

Syllabus Topic 3	The Skeletal System
Learning Outcome - the learner will:	understand the structure, function and pathology of the skeletal system
Indicative content:	

Explain the functions of the skeletal system

- Support framework
- Provides attachments for muscles
- Forms joints to provide movement
- Forms erythrocytes in the bone marrow
- Stores calcium
- Protection

Describe the structure of bone tissues

- Compact
- Cancellous

Describe the types of bone and identify where they can be found in the body

- Long
- Short
- Flat
- Irregular
- Sesamoid

Describe the position of the bones of the skeleton

Cranium

- Parietal
- Frontal
- Ethmoid
- Sphenoid
- Occipital
- Temporal

Facial

- Nasal
- Zygomatic
- Maxilla
- Lacrimal
- Turbinator
- Palatine
- Mandible
- Vomer
- Hyoid

Vertebrae

- Cervical

- Thoracic
- Lumbar
- Sacrum
- Coccyx

Shoulder girdle
- Scapula
- Clavicle

Thoracic cage
- Ribs
- 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
        - Cuneiforms (medial, intermediate, lateral)
        - Cuboid
- Metatarsals
- Phalanges

Explain the different types of joints

- Fixed

- Slightly moveable
- Freely moveable
- Ball and socket
- Hinge
- Pivot
- Gliding
- Saddle

Describe and identify possible causes of postural deformities

- *Kyphosis*
- *Lordosis*
- *Scoliosis*

Explain and identify the symptoms, causes and effects of diseases and disorders of the skeletal system

- *Arthritis*
    - *Osteo*
    - *Rheumatoid*
- *Gout*
- *Osteoporosis*
- *Stress*

Syllabus Topic 4	The Muscular System
Learning Outcome - the learner will:	understand the structure, function and pathology of the muscular system

Indicative content:

Describe the structure and explain the function of the different types of muscle

- Voluntary
- Involuntary
- Cardiac

Describe the structure and explain the function of the various attachments of muscles

- Ligament
- Tendon
- Fascia

Explain the terms used in relation to the muscular system

- Origin
- Insertion
- Action
- Tone
- Tension
- Fatigue
- Flexion
- Extension
- Abduction
- Adduction
- Rotation
- Supination
- Pronation
- Dorsiflexion
- Plantarflexion
- Eversion
- Inversion
- Circumduction

Explain muscular contraction

- How a muscle works
- How it provides movement
- How a muscle knows when to contract
- The source of energy to create a contraction
- Different stages of contraction, i.e. tone and relaxation
- Over contraction, i.e. causes of muscle tension and muscle fatigue

Explain the formation of lactic acid

- Cause and effect

Describe the position and explain the action of the muscles

Trunk/torso

- Trapezius
- Erector spinae
- Splenius capitis
- Latissimus dorsi
- Serratus anterior
- Gluteus maximus
- Gluteus medius
- Gluteus minimus
- Psoas
- Pectoralis major and minor
- Rectus abdominus
- Internal oblique
- External oblique
- Transversus abdominus
- Rhomboid major and minor
- Infraspinatis
- Supraspinatis
- Teres major
- Teres minor
- Iliacus
- Subscapularis
- Quadratus lumborum

Arm

- Deltoid
- Biceps
- Triceps
- Brachialis
- Coracobrachialis
- Brachioradialis
- Pronator teres
- Supinator radii brevis
- Flexor carpi radialis
- Extensor carpi radialis
- Extensor
- Carpi ulnaris
- Flexor carpi ulnaris
- Flexor carpi digitorum
- Extensor carpi digitorum
- Muscles of Thenar eminence
- Muscles of hypothenar eminence

Leg/thigh

- 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
- Gastrocnemius
- Tibialis anterior
- Peroneus longus
- Flexor digitorum longus
- Extensor digitorum longus
- Soleus
- Extensor hallucis longus

Face, neck and scalp
- Orbicularis oculi
- Orbicularis oris
- Masseter
- Buccinator
- Levator anguli oris
- Levator labii superioris
- Depressor anguli oris
- Depressor labii inferioris
- Depressor labii oris
- Mentalis
- Zygomaticus
- Temporalis
- Nasalis
- Procerous
- Corrugator
- Frontalis
- Occipitalis
- Pterygoids
- Triangularis
- Trapezius
- Sternocleidomastoid
- Platysma

Explain the cause and effect of muscular conditions
- *Fibromyalgia (Fibrositis)*
- *Cramp*
- *Muscle fatigue*

- *Atony*
- *Atrophy*
- *Myositis*
- *Rupture*
- *Spasm*
- *Spasticity*
- *Sprain*
- *Strain*
- *Stress*

Syllabus Topic 5	The Nervous System
Learning Outcome - The learner will:	understand the structure, function and pathology of the nervous system
Indicative content:	

Describe the structure and explain the functions 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

Describe the structure and explain the functions of the Central Nervous System (CNS), the Peripheral and the Autonomic Nervous System (ANS)

- Central nervous system
  - Brain
  - Spinal cord

- Peripheral nervous system
  - 31 pairs of spinal nerves
  - 12 pairs of cranial nerves

- Autonomic nervous system
  - Sympathetic
  - Parasympathetic

Explain the effect of stress on the nervous system

- The way in which stress affects the fear, fight, flight syndrome
- Effects of stress on the sympathetic and parasympathetic nervous systems
- Possible diseases and disorders caused by stress

Describe the structure and explain the function of the brain and spinal cord

- Brain
  - Meninges
  - Pia mater
  - Arachnoid mater
  - Dura mater

- Cerebrospinal fluid
- Cerebrum
- Cerebellum
- Pons Varolii
- Medulla oblongata
- Hypothalamus
- Brain stem

- Spinal cord
  - White matter
  - Grey matter
  - Meninges
  - Pia mater
  - Arachnoid mater
  - Dura mater
  - Cerebrospinal fluid

Explain how a nerve impulse is created

- Changes in temperature, pressure and chemicals
- Potassium and sodium ions

Describe the position and explain the function of the spinal and cranial nerves

- 8 cervical
- 12 thoracic
- 5 lumbar
- 5 sacral
- 1 coccygeal
- 5th, 7th & 11th cranial nerves
  - Facial
  - Trigeminal
  - Accessory

Describe the olfactory system

- Nose
- Olfactory membranes (contain smell-sense cells)
- Olfactory plexus

Explain the causes and effects of diseases and disorders of the nervous system

- *Neuritis*
- *Bell's palsy*
- *Neuralgia*
- *Parkinson's disease*
- *Stress*
- *Myalgic encephalomyelitis (ME)*
- *Cerebral palsy*
- *Multiple sclerosis*
- *Sciatica*
- *Motor neurone disease*

Syllabus Topic 6	The Eyes and Ears
Learning Outcome - The learner will:	understand the structure, function and pathology of the eye and the ear
Indicative content:	

Describe the structure of the eye

- Iris
- Pupil
- Lens
- Choroid
- Ciliary body
- Retina
- Macula
- Fovea
- Optic disc
- Optic nerve
- Sclera
- Rod cells
- Cone cells

Explain the function of the eye

- How light enters the eye
- aqueous humor
- vitreous humor
- electrical impulses
- optic nerve
- the visual cortex

Explain the causes and effects of diseases and disorders of the eye

- *blind spots (scotomas)*
- *cloudiness in the lens (cataract)*
- *increased eye pressure (glaucoma)*
- *damage to the cornea*
- *problems with the eye muscles*

Describe the structure of the ear

- The outer ear
- The ear drum
- The middle ear cavity
- The ossicular chain
- The Eustachian tube
- The inner ear
- Vestibular system
- Semicircular canals
- Cochlea

Explain the function of the ear

- Hearing
- Balance

Explain the causes and effects of diseases and disorders of the ear

- *Blockage and wax build up (cerumen)*
- *Tinnitus*
- *Barotrauma*
- *Hearing loss*
    - *Due to age*
    - *Noise-induced*

Syllabus Topic 7	The Endocrine System
Learning Outcome - The learner will:	understand the structure, function and pathology of the endocrine system

Indicative content:

Describe the position of the main Endocrine glands and explain the hormones secreted and the hypo and hyper secretion of each

- Pituitary
- Posterior lobe
  - Oxytocin
  - Antidiuretic hormone (ADH or vasopressin)
- Anterior lobe
  - Prolactin
  - Human growth hormone (HGH)
  - Thyroid Stimulating hormone (TSH)
  - Adrenocorticotropic hormone (ACTH)
  - Luteinising hormone (LH)
  - Follicle stimulating hormone (FSH)
  - Interstitial cell stimulating hormone (ICSH)
  - Melanin stimulating hormone (MSH)
- Thyroid gland
  - Thyroxin
  - Triiodothyronine
  - Calcitonin
- Parathyroids
  - Parathormone
- Thymus
  - Secretion of T lymphocytes
- Pineal
  - Releases melatonin
- Islets of Langerhans
  - Insulin
  - Glucagon
  - Glycogen
- Adrenal medulla
  - Adrenalin
  - Noradrenalin
- Adrenal cortex
  - Mineralocorticoids
  - Glucocorticoids
  - Sex hormones
- Ovaries
  - Oestrogen
  - Progesterone
- Testes
  - Testosterone

Explain the effects of hormones on the body

- The effects of specific hormones on the body at puberty, pregnancy, menopause and the menstrual cycle

Explain the interrelationship of the endocrine system with other systems

- Nervous system
- Circulatory system
- Digestive system
- Reproductive system
- Skin

Explain the causes and effects of various endocrine diseases and disorders

- *Addison's syndrome*
- *Amenorrhoea*
- *Cushing's syndrome*
- *Pre-menstrual syndrome*
- *Polycystic ovarian syndrome*
- *Stress*
- *Diabetes mellitus*
- *Diabetes insipidus*
- *Endometriosis*

Syllabus Topic 8	The Respiratory System
Learning Outcome - The learner will:	understand the structure, function and pathology of the respiratory system

Indicative content:

Describe the structure of the respiratory system and explain the function of each organ

- Nose
- Nasal cavity
- Larynx
- Pharynx
- Trachea
- Bronchi
- Bronchioles
- Alveoli
- Lungs
- Pleura (visceral, parietal, pleural cavity)
- Diaphragm
- Intercostal

Explain external respiration

- Inhalation and the organs involved
- Expiration and the organs involved
- Process of diffusion in the alveoli

Explain internal respiration

- Exchange of gases between the cells and the circulatory system

Explain the chemical control of the respiration

- Position, function and role of the chemo-receptors

Explain nervous control of respiration

- Role of the brain, i.e. the pons Varolii and medulla oblongata in the process of respiration

Describe the structure and explain the function of the pulmonary circulation

- Structure and function of the heart
- Pulmonary artery
- Pulmonary vein
- Lungs
- Pulmonary alveoli
- Process of gaseous exchange

Explain the interrelationship of the respiratory system with other systems of the body

- Circulatory system
- Nervous system
- Muscular system

Explain the causes and effects of diseases and disorders of the respiratory system

- *Bronchitis*
- *Emphysema*
- *Pleurisy*
- *Pneumonia*
- *Tuberculosis*
- *Asthma*
- *Rhinitis*
- *Hay fever*
- *Stress*
- *Sinusitis*

Syllabus Topic 9	The Cardiovascular System
Learning Outcome - The learner will:	understand the structure, function and pathology of the cardiovascular system
Indicative content:	

Describe the structure and explain the function of blood and its components

- Erythrocytes
- Leucocytes
- Thrombocytes
- Plasma and plasma proteins
- Platelets
- Describe the vessels in which it is carried
    - Arteries
    - Arterioles
    - Veins
    - Venules
    - Capillaries

Describe the position of the main arteries and veins of the body

- 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
    - Descending aorta
    - Left common carotid
    - Left subclavian
    - Right common carotid
    - Right subclavian
    - Pulmonary
    - Right hepatic
    - Splenic
    - Right 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
- Plantar arch

- Main veins of the body
  - Inferior vena cava
  - 4 Pulmonary
  - Right hepatic
  - 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
  - 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

Describe the structure and explain the function of the heart and the vessels entering and leaving the heart

- Superior vena cava
- Aortic arch
- Inferior vena cava
- Aorta
- Right atrium
- Right ventricle
- Left atrium
- Left ventricle
- Septum
- Pulmonary valve
- Pulmonary artery
- Pulmonary veins
- Mitral (bicuspid) valve
- Tricuspid valve
- Endocardium
- Myocardium
- Pericardium

Explain the pulmonary circulation

- The 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

Describe the structure and explain the function of the systemic and coronary circulation

- Systemic circulation
  - Heart
  - Body
  - Aorta
  - Inferior vena cava
  - Superior vena cava

- Coronary circulation
  - Heart
  - Coronary arteries
  - Coronary veins

Explain blood pressure and pulse

- Systolic
- Diastolic
- Cardiac output
- Resistance by the arterioles
- Total blood volume
- Viscosity of blood
- Elasticity of artery walls
- Heart rate

Explain the conditions of high and low blood pressure

- Causes and effects of hypo and hypertension
- Way in which blood pressure is measured
- Way in which blood pressure can be affected by massage

Explain the diseases and disorders of the circulatory system

- *To include the cause and effects of the following:*
  - *Anaemia*
  - *Varicose veins*
  - *Haemophilia*
  - *Arteriosclerosis*
  - *Atherosclerosis*
  - *HIV/AIDS*
  - *High blood pressure (hypertension)*
  - *Low blood pressure (hypotension)*
  - *High cholesterol*
  - *Hepatitis A,B & C*
  - *Coronary thrombosis*
  - *Septicaemia*
  - *Haemorrhoids*
  - *Phlebitis*
  - *Thrombus*
  - *Leukaemia*
  - *Aneurism*
  - *Stress*

Syllabus Topic 10	The Lymphatic System
Learning Outcome - The learner will:	understand the structure, function and pathology of the lymphatic system

Indicative content:

Describe the structure and explain the function of the lymph

- Formation and composition of lymph and its function to include:
  - Leucocytes
  - Lymphocytes
  - Waste products

Describe the structure and explain the function of the lymphatic system

- Lymphatic capillaries
- Lymphatic vessels
- Lymphatic nodes
- Lymphatic ducts
- The way in which lymph is moved around the body

Describe the structure and position of lymphatic tissue and explain its function

- Spleen
- Lymph nodes
- Tonsils
- Peyer's patches
- Appendix

Describe the position of the lymph nodes of the body

- Superficial and deep cervical
- Submandibular
- Thoracic duct
- Right lymphatic duct
- Axillary
- Supratrochlear
- Inguinal
- Popliteal
- Superficial and deep cervical
- Anterior auricular
- Posterior auricular
- Occipital

Explain the interrelationship between the circulatory/lymphatic systems and the muscular, digestive and immune systems

- 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

Explain the diseases and disorders of the lymphatic system

- *Oedema/water retention*

- *Hodgkin's disease*
- *Lymphoedema*

Syllabus Topic 11	The Digestive System
Learning Outcome - The learner will:	understand the structure, function and pathology of the digestive system

Indicative content:

Describe the structure and explain the function of the organs and accessory organs of the digestive system

- Alimentary canal
- Salivary glands
- Tongue
- Teeth
- Mouth
- Epiglottis
- Oesophagus
- Stomach
- Small intestine (jejunum, ileum, duodenum)
- Appendix
- Large intestine
- Rectum
- Anus
- Accessory organs
- Liver
- Gall bladder
- Pancreas

Explain the function of digestion

- Peristalsis
- Ingestion
- Digestion
- Absorption
- Defecation

Explain the process by which food stuffs are broken down as they pass through the alimentary canal during the digestive process

- 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, sucrose, lactase on disaccharides

Explain the process of absorption of nutrients

- Process of absorption of nutrients by the villi and lacteals contained in the small intestine

Describe the structure and explain the function of the digestive system

- Enzyme
- Proteins
- Peptones

- Polypeptides
- Amino acids
- Carbohydrates
- Disaccharides
- Monosaccharides
- Fats
- Fatty acids

Explain the interrelationship of the digestive system with other systems of the body

- Circulatory
- Endocrine
- Lymphatic
- Muscular
- Nervous

Explain the causes and symptoms of diseases and disorders of the digestive system

- *Appendicitis*
- *Cirrhosis of the liver*
- *Jaundice*
- *Heartburn*
- *Irritable bowel syndrome (IBS)*
- *Ulcer*
- *Hernia*
- *Stress*
- *Anorexia nervosa*
- *Bulimia*
- *Constipation*
- *Gall stones*
- *Diabetes mellitus*
- *Coeliac's disease*

Syllabus Topic 12	The Urinary System
Learning Outcome - The learner will:	understand the structure, function and pathology of the urinary system

Indicative content:

Describe the structure and explain the function of the organs of the urinary system

- Kidney (cortex and medulla)
- Pelvis
- Ureter
- Bladder
- Urethra

Explain the process of filtration

- Functions of the Bowman's capsule
- Filtration
- Re-absorption
- Secretion/micturition

Explain 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)

Explain urine production

- Cold and hot weather
- Activity and inactivity
- Stress

Explain the interrelationship of the urinary system

- with other body systems
- Circulatory system
- Endocrine system
- Skeletal system
- The skin

Explain the causes and effects of the disorders and diseases of the urinary system

- *Cystitis*
- *Kidney stones*
- *Nephritis*
- *Diabetes insipidus*

Syllabus Topic 13	The Reproductive System
Learning Outcome - The learner will:	understand the structure, function and pathology of the reproductive system

Indicative content:

Describe the structure and explain the function of the male reproductive system

- Prostate
- Testes
- Testicular vessels
- Penis
- Scrotum

Describe the structure and explain the function of the female reproductive system

- Uterus
- Fallopian tubes
- Cervix
- Ovary
- Vagina
- Labia

Explain the menstrual cycle

- Three phases
  - Menstrual
  - Proliferative
  - Secretory
- Formation of the Graafian follicle
- Formation of the corpus luteum

Describe the structure and explain the function of the breast

- Fatty tissue
- Ducts
- Nipple
- Areola
- Lobules

Explain the causes and effects of the diseases and disorders of the reproductive system

- *Ectopic pregnancy*
- *Amenorrhoea*
- *Dysmenorrhoea*
- *Pre-menstrual syndrome*
- *Polycystic ovarian syndrome*
- *Endometriosis*
- *Mastitis*
- *Stress*