UBT202M
Anatomy and physiology for beauty therapists

Unit reference number: L/615/0948

Level: 2

Guided Learning (GL) hours: 45

Overview

The aim of this unit is to provide learners with the necessary underpinning knowledge of human anatomy and physiology. Learners will develop an understanding of the organisation within the main body systems and associated pathology. This will enable the learners to have a sound platform to safely and confidently apply a range of level 2 beauty therapy treatments.

Learning outcomes

On completion of this unit, learners will:

LO1 Understand the role and organisation of the human body

LO2 Understand the structure and function of the systems of the body in the areas under treatment

LO3 Understand the relevant pathology associated with systems of the body in the areas under treatment

Assessment requirements

Learners must complete **both** assessment requirements related to this unit:

1. External examination
2. Graded synoptic assessment

1. External examination

The theory content of LO1, LO2 and LO3 will be tested by an external examination towards the end of the period of learning.

External examinations will test knowledge and understanding from across the whole vocational area (mandatory units). Learners should use the unit content section of this unit to aid revision since exam questions will test the full breadth of this section.

External examinations will be set and marked by VTCT and will contribute to the overall qualification grade.

2. Graded synoptic assessment

In the last term or final third of their qualification, learners will be required to undertake a graded synoptic assessment. This will require learners to carry out a range of services from across the whole vocational area (mandatory units). Assessment coverage will vary year on year, although all services will be covered over time.

VTCT will set a brief for centres which will detail the services to be covered in the graded synoptic assessment. Grading descriptors for the synoptic assessment will also be provided by VTCT.

The graded synoptic assessment will be marked and graded by centre staff and externally verified by VTCT.

The graded synoptic assessment will contribute to the overall qualification grade.

Unit content

LO1 Understand the role and organisation of the human body

Learners must know the organisation of the human body:

- The human body is a single structure but it is organised at different levels starting with the cell. Cells are organised into tissues, and tissues form organs

Learners must know the basic structure of a cell:

- Cells are made up of many structural components and organelles
    - Cell membrane, cytoplasm, nucleus, mitochondria, ribosomes, chromosomes

Learners must know the main tissue types:

- Epithelial tissue – sheet of cells that covers the body surface or lines a body cavity
- Connective tissue – connects, supports, binds, or separates other tissues or organs
- Muscular tissue – composed of cells that have the special ability to shorten or contract. It can be categorised into
    - Skeletal muscle tissue, smooth muscle tissue and cardiac
- Nervous tissue – found in the brain, spinal cord, and nerves. It is responsible for co-ordinating and controlling many body activities

Learners must know anatomical terms of motion:

- Anatomy uses its own collection of terms and each has a very specific meaning to describe an anatomical movement
    - Flexion, extension, abduction, adduction, pronation, supination, dorsi-flexion, plantar flexion, inversion, eversion

Learners must know the anatomical terms of direction:

- Directional terms describe the positions of structures relative to other structures or locations in the body
    - Anterior, posterior, medial, lateral, origin, insertion

LO2 Understand the structure and function of the systems of the body in the areas under treatment

Learners must know the structure and function of the integumentary system:

- The structure of the skin has three main layers
    - The epidermis horny layer (stratum corneum), transparent layer (stratum lucidum), granular layer (stratum granulosum), prickle cell layer (stratum spinosum), basal layer (stratum germinativum)
    - The dermis (papillary layer, reticular layer, sebaceous gland, arrector pili muscle, dermal papillae, hair follicle, hair follicle walls, outer root sheath, hair bulb, sweat gland, sweat pore, sweat duct, sensory nerves, motor nerves, melanocytes, arteriole, venule, lymphatic vessel, collagen, elastin)
    - The subcutaneous layer (areolar, adipose, fat cells)
- The functions of the skin
    - Secretion
    - Heat regulation
    - Absorption
    - Protection
    - Excretion
    - Sensation
    - Vitamin D formation
    - Melanin formation
- Growth and repair stages of the skin
    - Cell formation, keratinisation, desquamation
- How to recognise different skin types and conditions
    - Mature, sensitive, dehydrated, normal, oily, combination, dry, comedones, milia, broken capilliaries, pustules, papules, open pores, hyper pigmentation, hypo pigmentation, keloids, fine lines, wrinkles
- Factors which may affect the skin ageing process
    - Health, lifestyle, medication, age, diet, smoking, UV rays, stress, medical conditions, climate
- How do environmental and lifestyle factors affect the skin condition
    - Skin becomes rougher
    - Skin becomes slack. The loss of the elastic tissue (elastin) in the skin with age causes the skin to hang loosely
    - Skin becomes more transparent. This is caused by thinning of the epidermis
    - Skin becomes more fragile. This is caused by a flattening of the area where the epidermis and dermis come together
    - Loss of fat below the skin in the cheeks, temples, chin, nose, and eye area may result in loosening skin, sunken eyes, and a "skeletal" appearance
- Compare skin types and characteristics of different ethnic groups
    - Fair skin is usually defined as skin that appears between porcelain and bisque in colour. Among the fair-skinned are Caucasians, as well as light-skinned Asians and Latinas. Fair skin is often very susceptible to sensitivity, irritation and sun-burn, scars heal well, signs of ageing appear earlier and there is a greater chance of skin cancer
    - Medium skin is usually defined as olive. Generally East Asian, Latin, Mediterranean or Middle Eastern belong to this skin group. Medium skin tones have more melanin, which results in less sun damage and premature ageing. Skin is usually thicker, which often means fewer wrinkles, darker thicker scars are common and skin cancer is rare

    - Dark skin tones range from coffee brown to ebony, African-American and Afro-Caribbean fall into this category. This skin types is best protected against the suns UV rays, the signs of ageing appear very late, formation of keloids are possible, pigmentation changes may occur and skin cancers are very rare

- Structure of the hair
    - Hair follicle, hair shaft, medulla, cortex, cuticle, inner root sheath (Henle's layer, Huxleys layer), outer root sheath, vitreous membrane, connective tissue sheath, root (bulb, matrix, dermal papilla)
- The hair growth cycle
    - Anagen, catagen, telogen
- The hair types
    - Lanugo, vellus, terminal
- Hair functions
    - Hair acts as insulation for the body. Hair found in the ears and around the eyes prevents foreign matter from entering the body. Eyebrows reduce the amount of light that enters the eyes
- Structure of the nail
    - Nail plate, nail bed, nail grooves, germinal matrix, eponychium, perionychium, hyponychium, nail mantle or proximal nail fold, lunula, nail wall, free edge, cuticle
- Nail growth
    - Nail formation keratinisation
    - Growth rate
    - Factors affecting growth (health, lifestyle, age, diet, smoking, UV rays, stress, medical conditions, climate)
    - The effects of damage on growth
    - Nail thickness
- The different natural nail shapes
    - Fan
    - Hook
    - Spoon
    - Oval
    - Square
- Nail conditions
    - Bitten
    - Discoloured
    - Misshapen
    - Split
    - Ridged
    - Dry
    - Dehydrated
    - Brittle
    - Pitted

Learners must know the structure and function of the skeletal system:

- The functions of the skeleton
    - Gives shape and support forming a framework for the body
    - Protection of delicate underlying structures
    - Provides attachment for tendons and muscles
    - Red blood cells formation in red bone marrow
    - Provides movement and leverage
    - Provides calcium and mineral storage
- Structure of the skeleton
    - Bones of the hand and upper limbs (radius, ulna, carpals, metacarpals, phalanges)
    - Bones of the foot and lower limb (tibia, fibula, tarsals, metatarsals, phalanges)
    - Bones of the cranium (temporal, occipital, parietal, frontal, sphenoid, ethmoid, zygomatic, nasal, mandible, maxillae, nasal, vomer, turbinate, lacrimal, palatine)
    - Bones of the chest and shoulders (cervical vertebrae, clavicle, scapula, humerus, sternum)

Learners must know the structure and function of the muscular system:

- The function of the muscular system
    - Heat production
    - Movement
- Structure of the muscular system
    - Muscle tissue is categorised into three distinct types – skeletal, cardiac, and smooth. Each type of muscle tissue in the human body has a unique structure and a specific role. Skeletal muscle moves bones and other structures. Cardiac muscle contracts the heart to pump blood. Smooth muscle tissue forms organs like the stomach and bladder
- The location of the main muscles and actions
    - Muscles of the head, face, neck and shoulders (frontalis, occipitalis, temporalis, corrugator, orbicularis oculi, orbicularis oris, levator labii superioris, nasalis, depressor labii inferioris, mentalis, buccinator, risorius, masseter, temporalis, platysma, sternocleidomastoid, trapezius)
    - Muscles of the hand and lower arm (brachialis, brachioradialis, pronator teres, palmaris longus, flexor digitorum, flexor carpi radialis, flexor carpi ulnaris, extensor digitorum, extensor carpi radialis, extensor digitorium, extensor pollicis brevis, extensor pollicis longus)
    - Muscles of the foot and lower leg (gastrocnemius, soleus, tibialis anterior, peroneus longus, tibialis posterior, extensor digitorum longus, extensor hallus longus, flexor digitorum longus, flexor hallus longus)

Learners must know the structure and function of the cardiovascular system:

- The functions of the cardiovascular system
    - Transport
    - Regulation of body temperature
    - Protection
    - Provide a clotting mechanism
- Structure of the cardiovascular system
    - The cardiovascular system is a complex network containing the heart, blood vessels and blood. Arteries are blood vessels which carry blood from the heart to the body. Veins are blood vessels which carry blood from the body to the heart. There are also microscopic blood vessels which connect arteries and veins together called capillaries
- Location and role of primary vessels
    - Arteries of the face, common carotid artery, external carotid artery, occipital artery, facial artery, temporal artery
    - Veins of the face, external jugular vein, internal jugular vein, common facial vein, temporal vein, occipital vein, subclavian vein
    - Arteries of the foot and lower leg, peroneal, anterior tibial artery, posterior tibial artery, dorsalis pedis, arcuate artery
    - Arteries of the hand and lower arm, brachial artery, radial artery, ulnar artery, common digital arteries
    - Veins of the foot and lower leg, small saphenous, anterior tibial vein, posterior tibial vein, planter arch, digital veins
    - Veins of the hand and lower arm, cephalic vein, basilic vein, ulnar vein, radial vein, digital veins

Learners must know the structure and function of the lymphatic system:

- The function of the lymphatic system
    - Fights infection by producing specialised cells
    - Transports digested fats
    - Removes waste, toxins and excess tissue fluid from tissues and cells
- The structure of the lymphatic system
    - Composition of lymphatic fluid (lymphocytes), lymphatic capillaries, lymphatic vessels, lymphatic nodes, lymphatic tissue
- Functions of the lymph nodes
    - Filter lymph and assist the immune system in building an immune response by producing lymphocytes
- The location of the main lymphatic nodes of the face
    - Buccal, submandibular, submental, parotid, occipital, post and pre auricular, deep cervical, superficial cervical

LO3 Understand the relevant pathology associated with systems of the body in the areas under treatment

Learners must know the common pathology associated with the integumentary system:

- Common diseases and disorders of the skin
    - Infestations (scabies)
    - Bacterial infections (impetigo, blepharitis, stye, conjunctivitis, cellulitis)
    - Viral infections (warts, plantar warts, chickenpox, herpes, influenza, viral meningitis, mumps)
    - Fungal infection (tinea pedis, tinea capitis, ringworm)
    - Skin conditions (psoriasis, eczema, dermatitis, sebaceous cysts, ichthyosis, acne, rosacea, keratosis pilaris)
    - Pigmentation disorders (vitiligo, chloasma, lentigo, naevi, spider naevus ephelides)
    - Skin cancers (basal cell carcinoma, squamous cell carcinoma, malignant melanoma)
- Common diseases and disorders of the hair
    - Infestations (pediculosis capitis)
    - Bacterial infections (folliculitis, furuncle, carbuncle)
    - Fungal infection (tinea capitis)
    - Hair and scalp conditions (alopecia, dandruff, hirsutism, hypertrichosis)
- Common disease and disorders of the nail
    - Paronychia, tinea unguium, onycholysis, onychomycosis onychatrophia, onychorrhexis, onychauxis, leuconychia, beau's lines, pterygium

Learners must know the common pathology associated with the skeletal system:

- Common diseases and disorders of the skeletal system
    - Osteoporosis, osteoarthritis, rheumatoid arthritis, rickets, bursitis, fractures

Learners must know the common pathology associated with the muscular system:

- Common diseases and disorders of the muscular system
    - Muscular dystrophy, fibromyalgia, muscle cramps, tendonitis

Learners must know the common pathology associated with the cardiovascular system:

- Common diseases and disorders of the cardio vascular system
    - Thrombosis, varicose veins, phlebitis, high and low blood pressure, aneurism

Learners must know the common pathology associated with the lymphatic system:

- Common diseases and disorders of the lymphatic system
    - Oedema, glandular fever, tonsillitis

Skin cancer awareness

Please note this information will not be assessed for the achievement of this unit.
Public awareness of skin cancer has never been higher, and yet skin cancer remains the fastest growing cancer in the UK, especially amongst young people. The chances of a positive outcome can be dramatically increased with early identification and diagnosis.

Professionals in hair, beauty, sports massage and health and wellbeing industries work closely with clients and in many cases have sight of areas of skin which may not be easily visible to the client. An informed awareness of the signs, symptoms and changes of appearance to be aware of when checking for early signs of cancer is a crucial tool for the conscientious practitioner in order to provide the most thorough service and in some cases, possibly lifesaving information signposting.

Signs to look for when checking moles include utilising the ABCDE guide:

A - Asymmetry – the two halves of the area/mole may differ in their shape and not match.

B - Border – the edges of the mole area may be irregular or blurred and sometimes show notches or look 'ragged'.

C - Colour – this may be uneven and patchy. Different shades of black, brown and pink may be seen.

D - Diameter – most but not all melanomas are at least 6mm in diameter. If any mole gets bigger or changes see your doctor.

E - Elevation/evolving – elevation means the mole is raised above the surface and has an uneven surface. Looks different from the rest or changing in size, shape or colour. Anyone can get a suspicious mole or patch of skin checked out for free by the NHS by visiting their doctor, who may then refer to a dermatologist (an expert in diagnosing skin cancer).

If you require any additional NHS information please refer to https://www.nhs.uk/be-clear-on-cancer/symptoms/skin-cancer

If your learners are interested in learning more about skin cancer awareness alongside this qualification, VTCT runs the following qualification: VTCT Level 2 Award in Skin Cancer Awareness for Non-Healthcare Professionals.

This qualification has been specifically designed for those working in the sports massage, health and wellbeing, beauty, hairdressing and barbering sectors. It will enable learners to identify any changes to their client's skin and to highlight those changes to the client using appropriate language and communication skills. It will enable the learner to raise awareness of skin cancer and signpost their clients to public information about skin cancer.

This qualification will enable hair, beauty and wellbeing professionals to gain the appropriate knowledge and communication skills required to provide non-diagnostic, professional advice and information to clients in a discrete, empathetic and confidential manner.

For more information please refer to the Record of Assessment book:
https://qualifications.vtct.org.uk/finder/qualfinder/1Record%20of%20Assessment%20Book/AG20529.pdf

Resources

The special resources required for this unit are access to good quality anatomy and physiology text books, E books, DVD's, CD's.

Delivery guidance

Teachers are encouraged to use innovative, practical and engaging delivery methods to enhance the learning experience. Learners may benefit from:

- Using interactive information and technology, systems and hardware so they can learn about concepts and theories; produce visual aids to expand knowledge on anatomy and physiology

Links with other units

This unit is closely linked with the following units:

UCO34M Health, safety and hygiene

The health and safety unit will provide knowledge and understanding of the responsibilities for health and safety as defined by any specific legislation covering the role of a professional therapist. This unit greatly underpins all practical unit delivery. Learners will be required to apply their knowledge and understanding of health and safety when preparing for and providing services/treatments in real or realistic working environment.

UBT193M Consultation techniques and client care

Client consultation before all services is a legal requirement and failure to consult properly with clients prior to service could invalidate therapy insurance. It is essential that therapists elicit information from their clients about their medical history, including any allergies as well as checking for contra-indications. The client consultation unit underpins all technical units within this qualification and should be delivered prior to the delivery of any technical beauty therapy unit.

UBT196M Manicure treatments

Knowledge of manicure products and techniques significantly underpins the beauty therapist's ability to use safe and effective working methods. This is also relevant to this unit in terms of understanding contra-indications and contra-actions as well as the storage, handling, usage and disposal of manicure products and equipment in a real or realistic working environment.

UBT197M Pedicure treatments

Knowledge of pedicure products and techniques significantly underpins the beauty therapist's ability to use safe and effective working methods. This is also relevant to this unit in terms of understanding contra-indications and contra-actions as well as the storage, handling, usage and disposal of pedicure products and equipment in a real or realistic working environment.

UBT198M Waxing services

Knowledge of the waxing products and techniques significantly underpins the beauty therapist's ability to use safe and effective working methods. This is also relevant to this unit in terms of understanding contra-indications and contra-actions as well as the storage, handling, usage and disposal of waxing products in a real or realistic working environment.

UBT195M Skin type analysis

An effective skin analysis is the corner stone of all successful facial treatments. This unit will develop the therapists' knowledge and understanding of skin types, conditions and characteristics as well as variations between skin types, to allow for effective product selection and treatments planning. The knowledge of contra-indications to treatment and safety precautions when treating the skin will also be developed. This unit must always be delivered in conjunction with provide facial applications unit.

UBT194M Facial treatments

Facial treatments are arguably the most commonly known beauty treatments. This unit will enable learners to provide facial applications to clients, treating the required areas of the face, neck and décolleté. Learners will develop the knowledge and skills to prepare for and provide a professional treatment whilst at the same time developing their understanding of possible contra-indications, along with indications for, and benefits and effects of professional facial treatments.

UBT199M Eyebrow shaping services

This unit is about providing eyebrow shaping treatments to enhance the appearance of the eyebrows. Learners will develop the knowledge and skills to be able to prepare for and provide eyebrow shaping treatment. This unit will provide Learners with the skills to assess the eyebrow shape and proportions in relation to facial features. Learners will also develop their understanding of possible contra-indications along with the benefits and effects of the treatment.

UBT200M Eyelash and eyebrow tinting services

The eyelash and eyebrow tinting unit will enable learners to enhance the appearance of the eyelashes and eyebrows. Learners will develop the knowledge and skills to be able to prepare for and provide eyelash and eyebrow tinting. Learners will also develop their understanding of possible contra-indications along with the benefits and effects of tinting treatments.

UBT201M Make-up applications

The make-up applications unit is a key tool for the beauty counter consultant. Learners will develop the skills and knowledge to be able to understand and apply basic make-up services for a client/model and to be able to adapt them for a variety of occasions. Learners will develop their knowledge and skills to prepare and provide a professional make-up service.

Graded synoptic assessment

At the end of the qualification of which this unit forms part, there will be a graded synoptic assessment which will assess the learner's ability to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from a number of units from within the qualification. It is therefore necessary and important that units are delivered and assessed together and synoptically to prepare learners suitably for their final graded assessment.

Version	Details of amendments	Date
v5	Skin cancer awareness page added	14/06/17