

Scheme of work

For each VTCT (ITEC) qualification, the lecturer/centre must complete a scheme of work for each unit indicating how the Lecturer is planning to cover the unit content throughout the course. Set out the planned sessions in terms of learning outcomes to be achieved. These should match those stated within the VTCT (ITEC) unit specification. Include all units of each course offered. Hours should meet the minimum guided learning hours listed within the unit specification.

Unit title: iUBT403 - Dermatology and microbiology

Total contact tuition hours proposed: 42

Lecturer(s) responsible:

Learning objectives	Lecture content	Suggested resources	Approx. hours
Introductory session	<ul style="list-style-type: none"> College rules and regulations College mission statement ITEC rules and regulations Health & Safety Timetable Dates – holidays etc. Syllabus Recommended books Uniform 	<ul style="list-style-type: none"> Lecture Q&A Using all the documents listed to ensure the students understand the college expectations and their commitment to the course 	
1. Know the structure and functions of the skin, hair and nails			
Identify the anatomical structures of the skin, nails and hair	The cell: <ul style="list-style-type: none"> Cell membrane Cytoplasm Mitochondria Nuclear membrane Nucleus Nucleolus Ribosomes Chromatin Chromosomes Centrosome 	<ul style="list-style-type: none"> OHP/Whiteboard Lecture Q&A Homework Test: 	12

	<ul style="list-style-type: none"> • Centrioles • Endoplasmic reticulum • Vacuoles • Lysosomes • Golgi apparatus • Protein cell receptor sites <p>The skin:</p> <ul style="list-style-type: none"> • Epidermis <ul style="list-style-type: none"> - Stratum corneum - horny layer - Corneocytes - Filaggrin - Stratum lucidum - transparent layer - Transitional layer - Eleidin - Stratum granulosum - granular layer - Keratohyalin granules "glue" - Stratum spinosum - prickle cell layer - Desmosome connection - Langerhans cells - Lipids - Fatty acids - Cholesterol - Ceramides - Lamellar granules - Stratum germinativum - basal layer - Melanocytes - Keratinocytes - Dendrites - Basal cells - Stem cells - Amplifying cells - Postmitotic cells - Inflammatory chemical mediators • Dermis <ul style="list-style-type: none"> - Papillary layer - Dermal Papillae - Rete's pegs - Capillaries - Nerve endings - Grenz zone - Collagen 		
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	<ul style="list-style-type: none"> - Elastin - Glycosaminoglycan's (GAGs) - Leucocytes - Histiocytes - T Lymphocytes - Macrophages (histiocytes) and mast cells - Reticular layer - Fibroblast - Golgi apparatus - Rough endoplasmic reticulum - Collagen - Elastin - Reticulin - Glycosaminoglycans (GAGs) - Blood vessels - Lymphatic vessels - Eccrine glands - Apocrine glands - Pilosebaceous unit - Hair - Intercellular cement - Interstitial fluid • Subcutaneous tissue/hypodermis <ul style="list-style-type: none"> - Adipose tissue <p>The nail:</p> <ul style="list-style-type: none"> • Free edge • Hyponychium • Eponychium • Perionychium • Lunula • Mantle • Cuticle • Nail plate • Nail bed • Nail fold • Matrix • Nail wall <p>The hair:</p> <ul style="list-style-type: none"> • Keratin 		
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	<ul style="list-style-type: none"> • Cuticle • Cortex • Melanin • Medulla • Inner root sheath • Huxley's • Henle's • Outer root sheath • Vitreous membrane • Connective tissue • Dermal papilla • Lanugo • Vellus • Terminal 		
Describe the functions of the skin, nails and hair	<p>The cell:</p> <ul style="list-style-type: none"> • Movement • Respiration • Sensitivity • Growth • Reproduction • Excretion • Metabolism • Mitosis <ul style="list-style-type: none"> - Prophase - Metaphase - Anaphase - Telophase - Interphase • Meiosis <p>The skin:</p> <ul style="list-style-type: none"> • Secretion • Heat regulation • Absorption • Protection • Elimination • Sensation • Vitamin D production • Epidermis 		

	<ul style="list-style-type: none"> - Barrier function - Natural moisturising factor NMF - pH balance - Lipid protein “glue” - Keratinisation - Production of: <ul style="list-style-type: none"> ▪ Melanin ▪ Melanosomes ▪ Tyrosinase ▪ Tyrosine <p>Dermis</p> <ul style="list-style-type: none"> - Papillary dermis: <ul style="list-style-type: none"> ▪ Dermal-epidermal junction (DEJ) ▪ Thermoregulation - Production of: <ul style="list-style-type: none"> ▪ Collagen ▪ Elastin ▪ Glycosaminoglycan's (Gags) - Reticular dermis: - Production of: <ul style="list-style-type: none"> ▪ Collagen ▪ Elastin ▪ Glycosaminoglycan's (Gags) ▪ Hyaluronic acid ▪ Matrix metallo proteases (MMP'S): hyaluronidase, collagenase and elastase - Pilosebaceous unit: <ul style="list-style-type: none"> ▪ Production of sebum - Sweat glands: <ul style="list-style-type: none"> ▪ Production of eccrine and apocrine sweat ▪ Formation of the acid mantle <ul style="list-style-type: none"> • Subcutaneous tissue/ Hypodermis <ul style="list-style-type: none"> - Insulation - Energy source - Shock absorption <p>Cells involved in the immune response :</p> <ul style="list-style-type: none"> • Langerhans cells • Keratinocytes • T Lymphocytes • Macrophages (Histiocytes) • Mast cells <p>Absorption pathways:</p>		
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	<ul style="list-style-type: none"> • Appendageal • Transcellular • Intercellular <p>Wound Healing:</p> <ul style="list-style-type: none"> • Healing response and blood clotting to include: the role of granulocytes, leukocytes, thrombocytes, lymphocytes, monocytes, macrophages, Langerhans cells • To include the following stages <ul style="list-style-type: none"> - Inflammatory stage - Proliferative phase - Remodelling phase • Wounds to include epithelialisation, compromised wound healing • Mitotic activity • Scarring: <ul style="list-style-type: none"> - Normal - Abnormal - Hyperplasia - Causes of scarring - Postmitotic cells - Angiogenesis <p>The nails:</p> <ul style="list-style-type: none"> • Protection • Manual dexterity <p>The hair:</p> <ul style="list-style-type: none"> • Protection • Temperature control 		
Describe the factors that affect the growth of hair and nails	<ul style="list-style-type: none"> • Factors affecting hair and nail growth: <ul style="list-style-type: none"> - Health - Age - Diet - Medication - Climate - Damage - Lifestyle 		
Describe the factors that cause changes in the appearance of the skin, which are associated with ageing	<ul style="list-style-type: none"> • Intrinsic ageing – physiological factors • Extrinsic ageing – environmental factors • Diet • Smoking 		

	<ul style="list-style-type: none"> • Alcohol • Central heating • Air conditioning • Stress • Sleep • Exercise • Fresh air • UV light exposure • Occupation • Lifestyle • Current regime • General health • Hormones • Free radical-molecule • Free radical formation • Causes of free radical activity • Diet • Lifestyle • Smoking • Drinking • Pollution • Chemicals • Medication • Hormones • Food • Sun • Trauma • Injury • Transepidermal water loss (TEWL) • Natural moisturising factor (NMF) • Free radical effect on living cells, tissue ischemia, injury and ageing • Effects of free radicals on normal skin function • Reducing free radical activity - antioxidants, vitamin C, sunscreen, anti-inflammatories • Skin types: <ul style="list-style-type: none"> - White - Black - Asian type skin - Mixed - Dry 		
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	<ul style="list-style-type: none"> - Oily - Combination • Skin conditions/characteristics: <ul style="list-style-type: none"> - Mature skin - Young skin - Lack of elasticity - Lack of muscle tone - Blemishes - Crow's feet - Broken capillaries - Open pores - Milia - Comedones - Dermatitis papulosa nigra - Pseudo folliculitis - Keloids - Ingrowing hairs - Vitiligo - Albinism - Chloasma - Ephelides - Lentigo - Naevi - Port wine stain - Leukoderma - Scarring - Thin skin - Small moles - Papilloma - Dehydrated - Dull/lifeless skin - Sensitive - Reactive skins - Inflammation - Couperose - Telangiectasia - Rosacea - Acne Rosacea - Pustules - Papules - Acne Vulgaris - Acne scarring - Hyper pigmentation 		
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	<ul style="list-style-type: none"> - Hypo pigmentation - Dermal and epidermal pigmentation - Photo damage - Keratosis - Ageing skin <p>Causes and effects:</p> <ul style="list-style-type: none"> • Dehydrated <ul style="list-style-type: none"> - Lack of water/sebum - Vascularity - Fine lines - Wrinkles - Compromised skins • Dull/lifeless skin <ul style="list-style-type: none"> - Irregular epidermal reproduction - Excess keratinisation - Hyper sebaceous activity - Damaged vascular network - Lack of nutrients - Avascular • Reactive skins, couperose, inflammation <ul style="list-style-type: none"> - Exaggerated response to stimulus - Mast cells - Mediators (histamine) - Internal processes, - Over exfoliation - Artificial additive/preservatives - Post laser/IPL - Accutane • Rosacea, Acne Rosacea <ul style="list-style-type: none"> - Sebaceous hyperplasia - Connective tissue hypertrophy - Parasite (Demodex) - Digestion - Acidic environment - Inflammation - Stages of Rosacea 1 – 4 - Triggers - weather, emotional, temperature, physical, beverages, food, medication, topical skin care • Acne, Papules, Pustules, Acne Rosacea, Acne scarring <ul style="list-style-type: none"> - Hormones - Sebum stimulation - Juvenile acne 		
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	<ul style="list-style-type: none"> - Acne grades I – IV - Conglobata - Nodular - P acnes - Milia - Comedones - Inflammation - Ice pick scarring - Concave scarring - Cosmetics - Make-up - Stress - Diet • Hyper-pigmentation, Hypo-pigmentation, Dermal and Epidermal pigmentation, albinism, vitiligo, lamellar ichthyosis, melasma, haemochromatosis, dyschromia <ul style="list-style-type: none"> - Hormones - Drugs - Photosensitising agents - Trauma - UV exposure - Free radical damage - Photo damaged, photo damage/ageing, keratosis - Loss collagen/elastin/GAGs - Increased capillary visibility - Damage of vessels - Irregular epidermis - Slow keratinocyte mitosis - Elastotic changes - Reduced oxygen/nutrients supply - Ageing skin - Thinning epidermis - Thickening of Stratum corneum - Reduced melanocyte function - Photosensitivity - Reduced cell turnover - Lack of NMF - Glycation - Fatty acid deficiency - Milia - Rhytids – static and dynamic - • Hormonal changes • Pregnancy 		
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	<ul style="list-style-type: none"> • Perimenopause • Menopause 		
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2. Know the diseases and disorders of the skin, hair and nails			
Describe the signs and causes of non-infectious diseases and disorders of the skin, hair and nails that contraindicate treatment	<p>Skin:</p> <ul style="list-style-type: none"> • Contra-indications requiring medical permission: <ul style="list-style-type: none"> - In circumstances where medical permission cannot be obtained clients must sign an informed consent form stating that the treatment and its effects have been fully explained to them and confirm that they are willing to proceed without permission from their GP <ul style="list-style-type: none"> ▪ Medical oedema ▪ Recent facial surgery affecting the area ▪ Diabetes ▪ Skin cancer ▪ Undiagnosed pain ▪ When taking prescribed medication • Contra-indications that restrict treatment: <ul style="list-style-type: none"> - Any known allergies - Eczema - Psoriasis - Dermatitis - Undiagnosed lumps and bumps - Localised swelling - Inflammation - Cuts - Bruises - Abrasions - Scar tissue (2 years for major operations and 6 months for a small scar) - Sunburn - Hormonal implants - Urticaria - Hypersensitive skin - Botox/ dermal fillers (1 week following treatment) - Hyperkeratosis - Skin allergies - Trapped/pinched nerve affecting the treatment area - Inflamed nerve <p>Hair:</p> <ul style="list-style-type: none"> • Contra-indications requiring medical permission: <ul style="list-style-type: none"> - In circumstances where medical permission cannot be obtained clients must sign an informed consent form stating that the treatment and its effects have been fully 	<ul style="list-style-type: none"> • OHP/Whiteboard • Lecture • Q&A • Homework • Test: 	10

	<p>explained to them and confirm that they are willing to proceed without permission from their GP</p> <ul style="list-style-type: none"> ▪ Alopecia ▪ Trichotillomania <p>Nails:</p> <ul style="list-style-type: none"> • Contra-indications requiring medical permission: <ul style="list-style-type: none"> - In circumstances where medical permission cannot be obtained clients must sign an informed consent form stating that the treatment and its effects have been fully explained to them and confirm that they are willing to proceed without permission from their GP <ul style="list-style-type: none"> ▪ Recent operations on the hands ▪ Inflamed nerve ▪ Undiagnosed pain ▪ Acute rheumatism - Contra-indications that restrict treatment: <ul style="list-style-type: none"> ▪ Bruised nails ▪ Loss of skin sensation ▪ Chilblains ▪ Dermatitis ▪ Eczema ▪ Psoriasis ▪ Onychatrophia ▪ Onychauxis ▪ Onychophagy ▪ Severely bitten/damaged nails ▪ Nail separation • Contra-indications for facial treatment and chemical peels: <ul style="list-style-type: none"> - Basal Cell Carcinoma (BCC) - Squamous Cell Carcinoma (SCC) - Melanomas - Radiotherapy - Chemotherapy - Cystic Acne - Actinic keratosis - Solar Keratosis - Diabetes - Atopic dermatitis - Eczema - Psoriasis - Seborrhea - Open or undiagnosed lesions - Sunburn - Vitiligo 		
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	<ul style="list-style-type: none"> - Current users of tretinoin - Oral anti-coagulants - Pregnancy or lactation - Injectables (2 weeks prior to treatment) - Dermal fillers (2 weeks prior to treatment) - Recent cosmetic surgery (1 year) - Recent laser treatment (1 year) • Precautions: <ul style="list-style-type: none"> - Acne - Cuts - Abrasions - Electrolysis, waxing or depilatory treatments (2 weeks prior to treatment) - Telangiectasia - Rosacea - History of topical medications e.g. tretinoin (off medication 1 year) - Hormone medication e.g. birth control, HRT - Previous cosmetic or reconstructive surgery - Smoking - Very dehydrated skin - Previous chemical peels - Other procedures e.g. microdermabrasion - Urticaria - Allergic reactions 		
Describe the signs and causes of infectious disorders of the skin, hair and nails that contraindicate treatment	<p>Skin:</p> <ul style="list-style-type: none"> • Contra-indications that restrict treatment <ul style="list-style-type: none"> - Infestations <ul style="list-style-type: none"> ▪ Scabies ▪ Pediculosis - Bacterial <ul style="list-style-type: none"> ▪ Acne vulgaris ▪ Acne rosacea ▪ Impetigo ▪ Folliculitis ▪ Boils - Viral <ul style="list-style-type: none"> ▪ Herpes simplex ▪ Herpes zoster ▪ Warts - Fungal <ul style="list-style-type: none"> ▪ Tinea corporis <p>Hair:</p> <ul style="list-style-type: none"> • Contra-indications that restrict treatment 		

	<ul style="list-style-type: none"> - Folliculitis - Pediculosis <p>Nails:</p> <ul style="list-style-type: none"> • Contra-indications that restrict treatment <ul style="list-style-type: none"> - Onychia - Onychocryptosis - Onycholysis - Onychomycosis (Tinea Ungium) - Onychoptosis - Onychorrhexis - Paronychia (Whitlow) - Sepsis <p>Contra-indications for facial treatments and chemical peels:</p> <ul style="list-style-type: none"> • Bacterial infections: <ul style="list-style-type: none"> - Cellulitis - Impetigo - Folliculitis - Acne (III and IV) • Fungal: <ul style="list-style-type: none"> - Tinea corporis - Yeast infections - Candida • Viral: <ul style="list-style-type: none"> - Active Herpes Simplex - Hepatitis C, A, B - Warts • General <ul style="list-style-type: none"> - Open lesions and rashes - Accutane users - Immediate post-operative: <ul style="list-style-type: none"> ▪ Facelifts ▪ Blepharoplasty ▪ Neck lifts ▪ Autoimmune disorders e.g. HIV ▪ Lupus <p>Precautions for chemical peels:</p> <ul style="list-style-type: none"> • Previous but not active Herpes Simplex • Medications 		
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3. Be able to prepare for the culturing of bacteria

Prepare themselves and the work area for the culturing of bacteria	<ul style="list-style-type: none"> • Personal protective equipment i.e. gloves, laboratory coat and protective eyewear • Aseptic techniques • Methods of sterilisation • Methods of minimising cross contamination • Management of working area 	<ul style="list-style-type: none"> • OHP/Whiteboard • Lecture • Q&A • Homework • Test: 	10
Select materials, tools and equipment needed to culture bacteria	<ul style="list-style-type: none"> • Inoculating loop, swab or needle • Inoculated agar plate • Petri dishes • Culture media • Agar • Tape • Self-seal plastic bags • Incubator • Methods of disposal 		
Devise an experiment to culture bacteria	<ul style="list-style-type: none"> • Hypothesis • Experiment to test hypothesis • Variables • Control • Analysis of results • Conclusion 		
Describe the laboratory requirements for preparing themselves and the work area for culturing bacteria	<ul style="list-style-type: none"> • Aseptic techniques • Personal protective equipment • Health and safety procedures 		
Explain how to select materials, tools and equipment needed to culture bacteria	<ul style="list-style-type: none"> • Inoculating loop, swab or needle • Inoculated agar plate • Petri dishes • Culture media • Agar • Tape • Self-seal plastic bags • Incubator • Methods of disposal 		
Describe the process of culturing bacteria	<ul style="list-style-type: none"> • Purpose • Preparation of petri dishes • Culture media 		

	<ul style="list-style-type: none"> • Bacteria collection • Bacteria transfer • Seal petri dishes • Incubation – location, period and temperatures • Monitoring bacterial growth • Analysis of results • Conclusion • Disposal of Petri dishes and bacterial samples 		
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4. Be able to investigate the conditions required for the successful growth of bacteria and relate this to salon hygiene			
Follow health and safety working practices when investigating the culturing of bacteria	<ul style="list-style-type: none"> • Risk assessment • Current legislation i.e. COSHH, the Management of Health and Safety at Work Regulations etc. • Workplace health and safety procedures/practices 	<ul style="list-style-type: none"> • OHP/Whiteboard • Lecture • Q&A • Homework • Test: 	10
Carry out tests to investigate the conditions required for the successful growth of bacteria	<ul style="list-style-type: none"> • Identification of: <ul style="list-style-type: none"> - Required nutrients - Temperature - pH scale - Light levels - Atmospheric conditions 		
Explain how to follow health and safety working practices when investigating the culturing of bacteria	<ul style="list-style-type: none"> • Compliance with current legislation 		
Describe the conditions required to successfully cultivate bacteria	<ul style="list-style-type: none"> • Temperature • pH Balance • Energy Source • Nutrients • Moisture • Lack of light 		
Describe the structure, lifecycle and transmission of micro-organisms	<ul style="list-style-type: none"> • Single cell micro-organisms • Prokaryotes • Pathogenic • Non-pathogenic • Nucleoid • DNA 		

	<ul style="list-style-type: none"> • Ribosomes • Cytoplasm • Storage granules • Plasmid • Endospore • Cell wall • Plasma membrane • Outer membrane • Capsule • Flagella • Pili • Round – cocci • Rod shaped – bacilli • Spiral – spirilla • Binary fission • Lag phase • Log phase • Stationary phase • Death phase • Contact transmission – direct and indirect • Droplet transmission • Airborne transmission • Contamination – food/water • Vector borne 		
Describe hygiene procedures that can be used to reduce the risk of cross-contamination in the salon	<ul style="list-style-type: none"> • Sterilisation • Sanitisation • Hygienic working practices • Identification of contra-indications • Referral 		

Document History

Version	Issue Date	Changes	Role
v1	29/10/2019	First published	Qualifications Administrator