

Certificate in Body Science

DETAILED SYLLABUS FOR INTENSIVE COURSE

2007

PROFILE

This course is taught as an intensive consisting of two 5 day stretches one month apart, followed another month later by 2 days, one of which is the exam. Sections build on each other and each will look at the body's systems in increasing depth. The second week includes study of pathologies as well as the possibility for a visit to the Gordon Museum at Kings College to enable study of real pathological specimens.

The course will include tutorial sessions, either within the week or in between the two weeks depending on individual students (and where they live), a selection of pieces of work to be completed as continuous assessment and a final exam.

Since we specialise in teaching the anatomy, physiology and pathology for complementary therapists there are also many other opportunities for students to study different subjects in more depth, review the material regularly and keep their knowledge current and relevant to their practice.

NUMBER OF HOURS

The TOTAL STUDY TIME amount to 72 hours taught and at least 40 hours expected in home study.

OVERVIEW

Week 1 – 5 days

Aim

Week1 gives an overview of all the systems of the body, their basic structure and functions, with an emphasis on how they work together. Students will be introduced to basic terminology and key concepts in the study of anatomy, physiology and pathology. The material is presented in a variety of ways, using accelerated learning techniques and varied methods of presentation, with the emphasis as time goes on being on integrating the information and linking the different systems together in to a whole. Students will achieve a fundamental understanding of how this knowledge is applied and useful in clinical and practical work.

Week 2 – 5 days

Aim

Week 2 goes over each body system and considers the typical pathologies of each system; these are chosen as the most likely that we are likely to be presented with in complementary medicine practice. Students are also encouraged to develop skills in finding out about aetiologies themselves as they will undoubtedly need to do this in their practice.

Week 3 – 2 days

Aim

There is a session considering typical western medicine interventions as they may be appropriate to complementary therapies as well as a 2 hour exam carried out under supervision.

Each week will also include tutorials: students will have a choice about what they wish to research and discuss and will be required to give input into each session.

Each of the sessions detailed below are 3 hours long – ie a morning or afternoon.

WEEK 1: OBJECTIVE AND LEARNING OUTCOMES OF EACH SESSION

Session 1

Introduction to the body systems, how they connect and work together

Location and gross anatomy of organs

Students will be able to:

- Name the major anatomical components and physiological function of the following systems: skeletal, muscular, cardiovascular, respiratory, integumentary, digestive, nervous, renal, reproductive, endocrine, immune;
- Comment on the comparative positions of organs and other major structures in the body and how their location may serve their function;
- Comment on some of the basic interactions between the systems: eg the renal system filtering the blood, the nervous system controlling respiration and cardiovascular adjustments, the blood carrying hormones which affect other organs etc.

Session 2

The body's 'biochemical building blocks' and basic components of cells

Basic structure of different tissues and organs

Students will be able to:

- Briefly describe the difference between atoms, molecules, compounds, organelles, cells, tissues, organs, systems;
- Briefly describe the form and use of carbohydrates, proteins, lipids, vitamins, minerals, water;
- List the major components of cells including: plasma membrane, nucleus, DNA, cytoplasm, filaments, mitochondria, endoplasmic reticulum, golgi apparatus, lysosomes and formulate an understanding of these within the framework of the jobs done by the cell as a microcosm: ingesting nutrients, receiving stimuli, responding to stimuli and excreting wastes;
- Describe the basic differences between cells of muscular, epithelial, nervous and connective tissues and understand the different functions of these cells as tissues; describe how these different types of tissue come together to form organs and larger structures.
- Describe the different ways substances move in and out of cells including passive and active diffusion, filtration, osmosis, active transport, endocytosis and exocytosis
- Explain the basic process of mitotic cell division and make simple comparisons with meiosis;

Session 3

Gross anatomy and physiology of the cardiovascular and lymphatic systems

Components and functions of blood and other fluids

Students will be able to:

- Describe the basic structure of epithelial tissues and understand their role in lining different structures;
- Identify and locate the major components of the heart and vessels: aorta and vena cava, right and left atria, right and left ventricles, bi- and tri-cuspid, pulmonary and aortic valves;
- Describe the basic types of blood cells and the plasma components of blood; distinguish between blood, intracellular fluid, interstitial fluid and lymph;
- Identify and locate the major organs of the lymph system: route of major lymph vessels, location of main groups of nodes, tonsils, thymus, spleen;
- Describe the basic differences between veins, arteries and lymph vessels.

Session 4

How we get 'fuel' into the body 1: respiratory system

How we carry fuel in blood, use it in cells and the waste products produced

Students will be able to:

- Identify and locate the major components of the respiratory system: nose, nasal linings, pharynx, trachea, bronchi, bronchioles, alveoli, capillaries and consider the importance of aspects of their anatomy;
- Describe internal and external respiration and explain how gasses are carried in the blood;
- Describe the mechanisms of and controlling breathing.

Session 5

How we get 'fuel' into the body 2: digestive system

How we carry ingest and assimilate food, use it in cells and the waste products produced

Students will be able to:

- Describe the major forms of nutrients ingested (ie glucose, protein, fats, oxygen) and how they are utilised by the body;
- Identify and locate the major components of the digestive system: teeth, mouth, pharynx, oesophagus, stomach, duodenum, jejunum, ileum, colon, rectum, liver, pancreas, gall bladder;
- Describe the key roles of the above structures in terms of their physiology and the adaptations of the gastrointestinal tract;
- Understand the basic function of enzymes and their role in digestion;
- Explain how food substances are carried in the blood, used by cells and where nutrients are stored if not used.

Session 6

Terms and definitions; Main bones of the skeleton Different classifications of joints

Students will be able to:

- Explain the anatomical position, the descriptive terms used in reference to it and name the various movements the body can make;
- Describe the key components of connective tissue and how they differentiate into bone, tendon, ligament, fascias, blood etc;
- Name and locate the main bones of the body (generalising the carpals, tarsals, facial bones and vertebrae);
- Identify the key differences between fibrous, cartilaginous and synovial joints; understand the function of ligaments;
- List the key components of synovial joints and understand their functions; describe the 6 major categories and the movements they permit;
- Understand the body's combinations of movements as an overall system.

Session 7

Basic structure of the nervous system, spinal nerves and basic areas of the brain

Students will be able to:

- Describe the major components of neurons and nervous tissue and the basic concept of what happens at the synapse;
- Explain the difference between interneurons, motor and sensory nerves and the major triggers of sensory perception (ie touch, temperature, pain, proprioception);
- Identify components of the central nervous system including cerebrum, cerebellum, brainstem: midbrain, pons and medulla, thalamus, hypothalamus, limbic system, basal ganglia and spinal cord;
- Identify components of the peripheral nervous system including no of cranial nerves, no of spinal nerves, brachial, lumbar and sacral plexi and how and why they are formed;
- Understand the subdivisions and terms of the peripheral nervous system: including somatic and visceral, autonomic, parasympathetic and sympathetic and why the distinctions are important.

Session 8

Introduction to the endocrine system – the major glands and hormones

Students will be able to:

- Describe the location of the major endocrine glands and the functions of the hormones they produce;
- Differentiate the major classes of hormones and differences in their actions;
- Explain simply how hormones act on body cells and the feedback mechanisms that regulate their actions using insulin/glucagon and thyroid hormones as examples;
- Compare the roles of the endocrine and nervous system in regulating body functions and consider how other systems enable and respond to this control.

Session 9

Major muscle groups and outline of muscle physiology

Students will be able to:

- Describe simply the cells in muscle tissue, the mechanism of contraction and thus the action of skeletal muscle; demonstrate an awareness of the existence of cardiac and smooth muscle and where they are located;
- Classify skeletal muscles according to their shapes; understand the use of the terms origin and insertion;
- Understand the function of tendons and fascia and their relationship to muscles;
- Identify and locate the major groups of muscles of the limbs, trunk, back and neck.

Session 10

Review and discussion

Discussion

Some medical case histories from both conventional and complementary practices will be examined to highlight where the knowledge learned in these two modules may be informative and applied in understanding or treatment.

Students will:

Begin to develop an awareness of the usefulness of different types of definitions of the body and their resulting diagnoses and how complementary practices can work effectively with scientific knowledge.

WEEK 2

Session 1

How we remove wastes – a look at the urinary system, large intestine and skin and simple aspects of immunology

Students will be able to:

- Describe the structure and function of the major components of the renal system: kidney, nephron, urethra, bladder, ureter;
- Simply describe the action of the blood filtering system;
- Describe the main constituents of urine and typical volumes lost;
- Compare the methods of excretion and substances excreted by the kidneys, skin, large intestine and respiratory system;
- Simply describe how the cells of the immune system work to counteract and remove pathogens.

Session 2

Basics of the reproductive system

Students will be able to:

- Describe the location, structure and function of the major components (organs and tracts) of the male and female reproductive system;
- Describe the ovarian and menstrual cycles and how they are inter-related;
- Briefly outline the methods involved in the production and delivery of sperm;
- Define the terms associated with growth and development of the reproductive system and understand the basic roles of the hormones in this growth and development.

Session 3

Introduction to the study of pathology and disease

Students will be able to:

- Describe the key ways our bodies protect us from illness, including passive and active immunities;
- Describe the main different types of illnesses that can affect us;
- Describe the body's response to pain and the process of the inflammatory response.

The cells and processes of the immune system

Students will be able to:

- Describe the key ways our bodies protect us from illness, including passive and active immunities;
- Describe the main different types of illnesses that can affect us;
- Describe the bodies response to pain and the process of the inflammatory response.

Session 4

Pathologies of the cardiovascular & respiratory systems

Students will be able to:

- Describe the key points of the following pathologies: hypertension, hypotension, aneurysm, arteriosclerosis / arteriosclerosis, varicose veins, anaemia, haemophilia, leukaemia, thrombosis and embolus, ischemia, palpitations, oedema, congestive heart failure, angina, heart attacks, stroke, cardiac arrhythmias, pericarditis;
- Describe the key points of the following pathologies: common cold, sinusitis, pharyngitis and other respiratory tract inflammations, bronchitis, bronchial asthma, asthma, emphysema, pneumonia, tuberculosis, primary embolus, collapse of lungs, pulmonary oedema, alveolitis, respiratory failure: acidosis /alkalosis.

Session 5

Pathologies of the Digestive system

Students will be able to:

- describe the typical symptoms of digestive disorders and the key points of the following pathologies: hiatus hernia, gastritis / peptic ulcers, hepatitis, cirrhosis, jaundice, gallstones, pancreatitis, cystic fibrosis, Crohn's disease, Coeliac disease, appendicitis, colitis, irritable bowel syndrome, diverticulitis, haemorrhoids, peritonitis.

Session 6

Pathologies of the musculoskeletal system

Students will be able to:

- Describe the key points of the following pathologies: postural deformities, herniated disc, strains and sprains, bursitis, tennis / golfers elbow, carpal tunnel syndrome, RSI, frozen shoulder, fractures, osteoarthritis, rheumatoid arthritis, gout, osteoporosis, rickets / osteomalacia, whiplash.

Session 7

Pathologies of nervous & endocrine system

Students will be able to:

- Describe the key points of the following pathologies: intra-cranial bleeding, dementias including: Alzheimer's and Parkinson's disease, migraine, headache, epilepsy, multiple sclerosis, Huntington's disease, meningitis, shingles, poliomyelitis, sciatica, Bell's palsy;
- Describe the key points of the following pathologies: acromegaly, pituitary gigantism, diabetes insipidus, galactorrhoea, hyperthyroidism, hypothyroidism, Cushing's syndrome, Addison's disease, diabetes mellitus (type 1 and 2).

Session 8

Pathologies of the urinary and reproductive systems & other pathologies

Students will be able to:

- Describe the main different types of illnesses that can affect us: cystitis and UTIs, kidney stones, polycystic kidney disease, renal failure, hypertension;
- Describe the key points of the following male reproductive system pathologies: inguinal hernia, prostatitis, benign prostatic hypertrophy, testicular torsion, varicocele;
- Describe the key points of the following female reproductive system pathologies: pelvic inflammatory disease, endometriosis, fibroids, ovarian cysts, polycystic ovary syndrome, ectopic pregnancy, vaginal infections;
- Describe the key points of the following STDs: chlamydia, gonorrhoea, genital herpes, syphilis.
- Understand the patterns and development of cancers of various parts of the body, and how the patient is affected;

- Understand how the HIV virus affects us, what the progression the AIDS means and some of the typical diseases that are experienced;
- Discuss any other diseases that may be relevant or of interest to students.

Session 9

The senses – sight, hearing, taste, touch, smell

Students will be able to:

- Describe the basic anatomy of the sense organs;
- Identify the information they are designed to respond to and the unique ways in which they do so.

Session 10

Discussion session with guest speakers

Students will be able to:

- Participate in discussion session and practice presenting information to an audience on a topic agreed by students and relevant to their practice as a complementary therapist.
- This session may also be used for a visit to the Gordon Museum of Pathology if students wish.

WEEK 3

Session 1

Different medical interventions - drugs and surgery. Complementary therapies

Students will be able to:

- Comment on different approaches to diseases and the effects and outcomes possible;
- Understand the effects and risks of general anaesthetics, surgical intervention and recovery process;
- List the main classes of drugs and comment on the pay-offs between useful effects and side effects;
- Consider some of the modes of action and known effects of different complementary therapies and when they are useful. Relate these as helpful to the AP&P syllabus we have covered.

Session 2

Participatory review of all certificate syllabus

Session 3

Assessment for Certificate qualification

Session 4

Open session

Review of exam and completion of course.