Global Semesters
Course Syllabus
Course: BIOL-310 Special Topics in Clinical Anatomy and Skills
Department: Medical School
Host Institution: University of Nicosia, Nicosia, Cyprus

Course Summary		
Course Code	**Course Title**	**Recommended Credit Hours**
BIOL-310	Special Topics in Clinical Anatomy & Skills	4
Subject	**Contact Hours**	**Prerequisites**
Health Sciences	63-65	1 Biology course
Department	**Level of Course**	**Language of Instruction**
Medical School	Upper-Division	English

Course Description

The clinical anatomy course gives a sound knowledge of the anatomy of the human body in relation to medicine and surgery. It also gives an opportunity to learn clinical skills related to anatomy.

Prerequisites (if applicable)

1 Biology course

Instructor Information

Prof. Edna Yamasaki Patrikiou (Anatomy and Neuroscience) has a Medical degree from her home country, Brazil, as well as a MSc and PhD in Neurosciences. She has completed postdoctoral training at the Departments of Neurology and Neurosurgery at the Massachusetts General Hospital/Harvard Medical School (Boston, MA), at the Department of Anatomy at the Virginia Medical School (Richmond, VA), before taking a faculty position at the Federal University of Rio de Janeiro where she worked for 13 years before moving to Cyprus. She is currently the Head of the Department of Life and Health Sciences and teaches anatomy and physiology, developmental biology and embryology and cellular neuroscience. Besides teaching, Prof. Yamasaki has an extensive experience in basic research, and is a member of the Senate and the Ethics Committee at the University of Nicosia.

Mr. Chad Schou (Laboratory Associate): Before joining the St. George's, University of London Medical Program at the University of Nicosia, Chad Schou worked as a biochemist for over 10 years in a variety of sectors, which included academic research, industrial pharmaceutical research, and governmental regulation and analysis. He brings his technical skills to the medical program where he facilitates the learning process in the anatomy laboratory by producing cadaveric prosections. In addition, he maintains the anatomical manikins and models used in the clinical skills laboratory at the medical school. He immigrated to Cyprus with his wife from the United States, where he studied and worked.

Learning Outcomes

Here are the learning outcomes of the course:

Thorax 1 and 2

- Learn the anatomy of the upper respiratory tract including the nasal cavities, the paranasal sinuses, the pharynx and the larynx.
- Describe the surface markings of the pleura, the lungs and fissures.
- Learn the lower respiratory tract including the tracheobronchial tree, lungs and pleura.
- Begin to become familiar with chest radiographs.
- Relate the anatomy of the thorax to clinical examination.
- Understand the anatomy of the diaphragm and the mechanics of breathing.
- Describe the boundaries of the mediastinum and its constituent parts and content.
- Indicate the flow of blood through the heart.
- Describe the coronary circulation.
- Describe the principal arteries of the trunk and neck.
- Identify the surfaces of the heart and its chambers.
- Describe the closing and opening of the heart valves during the cardiac cycle.
- Indicate on a skeleton and a living subject the best sites for auscultation of the heart valves.
- Relate the anatomy of the heart to surface anatomy and to x-rays.
- Describe the major arteries and the territories they supply
- Locate clinically important superficial and deep veins.
- Define blood pressure.

Abdomen 1 and 2

- Describe the anatomy of the mouth, teeth, muscles of mastication, pharynx, oesophagus and stomach.
- Demonstrate the anatomy of the abdominal wall and inguinal region.
- Show an understanding of the anatomy of the midgut and hindgut, together with their blood supply, venous and lymphatic drainage.
- Show an understanding of the anatomy of the liver, gall bladder, pancreas and spleen.
- Describe the hepatic portal circulation.
- Identify the sites of the main porto-caval anastomoses.
- Describe the biliary tree.
- Understand the surgical importance of the hepatic segments of the liver.
- Identify the parts of the pancreas and describe its relations.

The male reproductive system

- Describe the anatomy of the male urogenital triangle and its contents.
- Describe the anatomy of the male reproductive tract and external genitalia.

The female reproductive system

- Describe the general disposition of the pelvic viscera in the female.
- Describe the bony pelvis and its musculature, identify the ischioanal passages and their contents.
- Describe the anatomy of the female urogenital triangle and its contents.
- Describe the anatomy of the female reproductive tract and external genitalia.
- Describe the anatomy of the breast.

The urinary tract – kidneys and ureters

- Describe the position, shape and size of the kidneys and relate this to their surface anatomy.
- Describe the features seen in a coronal section of the kidney.
- Describe the blood supply and venous drainage of the kidneys.
- Describe course and relations of the ureters, noting places of constriction.
- Describe the anatomy and relations of the urinary bladder in both sexes.
- Describe the course and relations of the urethra noting sex differences.

CNS 1 and 2

- Describe the bony spine and identify the different areas.
- Describe the joints and ligaments of the spine.
- Describe the principal sensory pathways.
- Describe the main regions of the CNS.
- Describe the anatomy of the spinal cord.
- Describe the major motor pathways.
- Predict the likely consequences of pathological conditions and trauma.
- Identify the major surface and internal features of the brainstem and describe its major connections.
- Describe the ventricular system.
- Describe the anatomy and functions of the cerebellum.
- Describe the clinical anatomy of the meninges.
- Identify functional regions on the surface and within the cerebral cortex.
- Predict the deficits likely to follow damage to each region.
- Identify the major sulci and gyri and the internal structures of the hemispheres.
- Describe the blood supply of the CNS.
- Give an outline of the autonomic nervous system.
- Describe the dermatomes.

Upper limb 1 and 2

- Describe the arterial supply, venous and lymph drainage of the upper limb.
- Point out the anatomical features of the scapula, the clavicle and the humerus.
- Describe the muscles responsible for movement of the shoulder girdle.
- Define the boundaries of the axilla and list its principal contents.
- Describe the brachial plexus and its main branches
- Identify the lymph groups in the axilla and name the areas they drain.
- Revise the lymph drainage of the breast.
- Describe the muscles of the anterior and posterior compartments of the arm.
- Describe the innervation and actions of these muscles.
- Look at normal and abnormal radiographs of the upper limb.
- Describe the cubital fossa and its contents.
- Identify the muscles of the anterior and posterior compartments of the forearm.
- Describe the innervation and actions of these muscles.
- Identify the surface markings of the main arteries in the upper limb.
- Describe the movements that occur at all the joints of the upper limb.
- Describe the flexor retinaculum and the carpal tunnel.
- Name the carpal bones and the bones of the hand.
- Identify the muscles of the hand.
- Describe the innervation and actions of these muscles.

Lower limb 1 and 2

- Describe the main arteries, veins and lymphatics in the lower limb.
- Point out the main anatomical features of the hip lint and femur.
- Describe the structure of the hip joint.
- Identify the major nerves of the lower limb and describe the distribution.
- Give an overview of the compartments of the lower limb.
- Identify the muscles of the gluteal region and all compartments of the thigh and leg.
- Describe the innervation and actions of these muscles.
- Discuss the knee joint and movements.
- Identify the popliteal fossa, its boundaries and contents.
- Review the surface markings of the major arterial pulses in the power limb.
- Discuss the ankle, subtalar and midtarsal joints and movements.

Neck and mouth

- Describe the triangles of the neck and all major contents.
- Revise the anatomy of the mouth.
- Discuss the actions of the muscles of the tongue and their nerve supply.
- Discuss the anatomy of the thyroid gland, its blood supply and major relations.
- Give a brief overview of the main glands in the body and discuss their functions.

Cranial nerves

- Describe the origin, course and distribution of the cranial nerves.
- Revise the main features of the bony skull and face.

Eye and ear

- Describe the orbital cavity and list its major contents.
- List the extrinsic muscles of the eye giving its functions and innervation.
- Describe the innervation of the eyeball.
- List the intrinsic muscles of the eye giving its functions and innervation.
- Describe the external, middle and inner part of the ear and its contents.
- Comment on the clinical anatomy of the middle ear in relation to infection.
- Discuss the clinical significance of the auditory tube.

Course Outline

Week 1

Lecture: Thorax, part 1

- Nose
- Pharynx
- Larynx
- Trachea
- Lungs

Clinical Skills

- Respiratory Exam
- Mouth Inspection

Lecture: Thorax, part 2

- Mediastinum
- Thoracic wall/respiration
- Heart

Clinical Skills
- Cardiovascular Exam
- ECG

Lecture: Abdomen, part 1
- Mouth to anal canal

Clinical Skills
- Abdomen exam

Lecture: Abdomen, part 2
- Liver
- Spleen
- Pancreas

Clinical Skills
- Abdomen exam
- Rectal exam

Week 2

Lecture: Male Reproductive System/Pelvis
- Male Reproductive organs
- Pelvis

Clinical Skills
- Pelvis – male and female

Lecture: Female Reproductive System/Pelvis
- Female Reproductive organs
- Pelvis

Clinical Skills
- Male pelvis/groin exam
- Female pelvis exam

Lecture: Kidneys and Ureters
- Kidneys
- Bladder
- Ureter

Clinical Skills
- Urine testing (ketones, protein, glucose)

Lecture: Central Nervous System, part 1
- Spinal cord
- Ascending/descending pathways
- Brain stem

Clinical Skills
- Dermatomes
- Eye/pupil exam
- Muscle strength exam

Week 3

Lecture: Central Nervous System, part 2
- Autonomic nervous system
- Brain

Clinical Skills
- Neurological exam

Lecture: Upper Limbs, part 1
- Chest wall to elbow

Clinical Skills
- Peripheral vascular exam (pulses, ABPI/Doppler)

Week 4

Lecture: Upper Limbs, part 2
- Forearm
- Hand

Clinical Skills
- Phlebotomy

Lecture: Lower Limbs, part 1
- Gluteal region to knee

Clinical Skills
- Hip exam

Lecture: Lower Limbs, part 2
- Knee to foot

Clinical Skills
- Knee exam (incl. ACL exam)

Lecture: Neck and Mouth
- Neck
- Mouth
- Thyroid gland

Clinical Skills
- Thyroid exam
- Glands

Week 5

Lecture: Cranial Nerves
- Cranial nerves

Clinical Skills
- Cranial nerves

Lecture: Eye and Ear
- Eye
- Ear

Clinical Skills
- Eye exam
- Ear exam

Lab Activities

Respiratory System
- Respiratory exam - inspection of chest, annotating any deformities, irregularities; observe symmetry and bilateral expansion; auscultation.
- Mouth inspection - colour, presence of lesions, general aspect of teeth

Thorax

- cardiovascular exam - identify sites to auscultate valves; auscultation
- simulation suite - auscultation of lungs (rattles, decreased vesicular murmur, wheezing); auscultation of heart (murmurs, 3rd and 4th sounds)

Abdomen
- abdomen exam - identify quadrants and location of viscera, percussion, palpation, auscultation of bowel sounds
- rectal exam - using male and female mannequins, perform digital rectal exam. Evaluation of normal and abnormal prostate.

Male Reproductive System
- male pelvis/groin exam - inspection and palpation

Female Reproductive System
- female pelvis exam - vaginal exam with speculum, how to obtain material for a PAP smear, digital exam. Evaluation of uterus and ovaries.

Kidney and ureters
- urine testing (dip sticks), interpreting the results

Central Nervous System
- Neurological exam - cognition, walking, reflexes
- dermatomes - identification and discussion on clinical relevance
- muscle strength exam - examining muscle strength, palpation, inspection

Upper limbs
- Peripheral vascular exam - check for pulses, observe pulse deficit, ABPI/Doppler to assess blood flow
- Phlebotomy - in models, students perform phlebotomy.

Lower limbs
- hip exam - inspection, palpation
- knee exam - inspection, palpation, testing for different ligaments

Neck and mouth
- thyroid exam - inspection, palpation
- glands - identify in models, discuss clinical aspects of endocrine disorders related to specific glands

Cranial nerves
- cranial nerves - identifying and testing

Eye and Ear
- eye exam
- - inspection, visual acuity and pupillary reflexes, fundoscopy
- ear exam
- - inspection, using an otoscope visualise ear canal, and tympanic membrane. Tuning fork tests for air and bone conduction

Readings and Resources

Recommended Reading

Moore and Agur, essential clinical anatomy. Lippincott, Williams & Wilkins.

Materials and Supplies

No additional materials or supplies are required for this course.