British Columbia Institute of Technology

Course Outline

Course BHSC 2213 ANATOMY & PHYSIOLOGY 2

Instructor(s) D.W.Martin **Office** SW3 3085

Office hours as arranged with students **Local** 8226

Date taught Sept. - Dec. 1995

Term 2nd **No. of weeks** 9 **Hrs./wk** 3 (average) **Credit** 2.0

Total hrs. 27 **Lecture/wk** 3 (average) **Lab./wk** 0

Tutorial/wk 0 **Practicum** 0

Offered by: **School** Health

Program Basic Health Sciences

Taught to: **School** Health

Program Medical Radiography

Option N/A

Prerequisites: successful completion of BHSC 1113 (or equivalent)

Requisite for:

Prepared by: D.W. Martin

Associate Dean: V. Magee Shepherd

Description/summary

A continuation of BHSC 1113, this course uses a systems approach to examine the cardiovascular, lymphatic, nervous, endocrine, and reproductive systems.

Goal(s)

-to obtain a basic understanding of human anatomy & physiology that can be applied to other courses in the radiography program.

-to give the student sufficient background to function effectively in the clinical setting when confronted with both commonly encountered and unfamiliar physiologic and pathologic states.

Outcomes

~~TOPIC 1~~

Outcome 1

on successful completion of this course the student should be able to:

-describe the circulatory system in terms of the structure & function of the two divisions, the vascular structures & their functions, & the physiology of blood flow.

-describe the location, structure,& function of the heart, including the cardiac cycle & cardiac flood supply.

-relate the systolic & diastolic arterial blood pressure to the mechanical events of the cardiac cycle.

-describe the composition of blood, the function of the major cellular components, & the regulation of blood cell formation.

-differentiate between features of the fetal circulation & that of the neonate.

-describe the lymphatic system according to its structure & function, including formation & composition of lymph & its drainage paths.

-describe the major structures of the nervous system including their protection & functions. Include the brain, spinal cord, cranial & spinal nerves.

-identify the brain ventricles in a variety of different planes & sections.

cont/...

Outcomes (cont.)

-relate the parts of the central nervous system to the enclosing bones of the skull & the spinal column.

-for organs of the endocrine system, describe their location, hormonal secretions & function of the hormones at the target organs.

-describe the major components of the female & male reproductive systems & their functions.

-identify the relationships among organs of the female & male pelvis & recognise structures from their location & sectional appearance.

Delivery methods (e.g., lecture, lab, video, etc.)

Lectures (with pre-lecture reading assignments.)

Evaluation

2 "midterms"	@ 30% each	= 60%
1 Final		= 40%
	OTAL	= 100%

Texts

Required: Principles of Anatomy & Physiology , Tortora & Grabowski, 7th Ed. 1993, Harper & Row,

access to a good medical dictionary.

Reference: The BCIT library has good holdings in human anatomy & physiology books. e.g.

Gray's Anatomy QM 23.2
G 73

Textbook of Medical Physiology, Guyton, QP 34.5, G9

Equipment

Required: none

Recommended: none

Course notes

Pre-reading

a list of terms relating to a specific system is handed out prior to a discussion of that system in class. Students are expected to have referred to their textbook for the meaning of these terms before the system is covered in lectures.

CARDIOVASCULAR SYSTEM (12 hours)

overall design - arteries, veins, heart, pulmonary & systemic circulations.

heart location, anatomy, & related structures - refer to handout sheet.

the cardiac cycle - electrical & mechanical events.

arterial system - structure of elastic & muscular arteries, & arterioles. capillary structure, movement of materials through cap. walls.

venous system - structure of veins, valves.

location of arteries & veins identified in handout sheet.

fetal circulation & changes at birth.

composition of blood - erythrocytes, formation & destruction. Brief description of the leukocytes & platelets, & sites of formation.

LYMPHATIC SYSTEM (2 hours)

basic structure - lymph capillaries, lymphatics, R. lymphatic & thoracic ducts, cisterna chyli. Lymph node structure, cervical, axillary, inguinal, popliteal, periaortic, trachiobronchial nodes. Other lymphoid tissue - spleen, palatine, pharyngeal & lingual tonsils, thymus, "Peyer's patches".

functions of lymphatic system.

NERVOUS SYSTEM (6 hours)

types of nervous tissue cells - neuroglia, neurons

C.N.S. - GROSS ANATOMY & FUNCTIONS

BRAIN, SPINAL CORD, & RELATED STRUCTURES - as detailed in handout sheet.

C.N.S.PROTECTION

bony protection, the meninges, ventricular system, production & reabsorption of C.S.F.

P.N.S. - GROSS ANATOMY & FUNCTION

SOMATIC NERVOUS SYSTEM

cranial nerves - names, numbers, functions, & associated cranial foramina.

spinal nerves - numbers & spinal regions from which they arise.

cervical, brachial, lumbar & sacral plexuses, phrenic, ulnar, brachial, sciatic & femoral nerves.

AUTONOMIC NERVOUS SYSTEM

structure of the two divisions, and examples of their antagonistic actions.

ENDOCRINE SYSTEM (1 hour)

the following tissues & organs are considered briefly with respect to location, major hormones produced, & effects on target organs:

pancreas, thyroid, parathyroids, adrenals (cortex & medulla), thymus, pineal, ant. & post. pituitary. (gonads are covered in reproductive systems).

REPRODUCTIVE SYSTEMS (2 hours)

FEMALE STRUCTURE & FUNCTION

anatomy as outlined on handout sheet.

anatomic relationships of organs in pelvic cavity.

ova production & cycle - effects of F.S.H., estrogens, L.H. on development & ovulation.

uterine changes - effects of progesterone & estrogens. menstruation. Changes in pregnancy.

breast structure, cyclical changes & changes in pregnancy. Control of lactation.

MALE STRUCTURE & FUNCTION

structures as outlined on handout sheet.

anatomic relationships of organs.

role of testosterone, seminal vesicles, bulbourethral & prostate glands, in sperm production, maturation & semen production.