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** (432) 8226

Date taught Sept. - Dec., 1996

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

Total hrs. 27 **Lecture/wk** 3 **Lab./wk** N/A

Tutorial/wk N/A **Practicum** N/A

Offered by: **School** Health Sciences

Program Basic Health Sciences

Taught to: **School** Health Sciences

Program Medical Radiography

Option N/A

Prerequisites: Successful completion of BHSC 1113 (or equivalent)

Requisite for: MRAD 1104/2204/3304

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, & reproductive systems.

Goal(s)

-to provide 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 circulations, the vascular structures & their functions, and the physiology of blood flow.

-describe the location, structure, & function of the heart, including the cardiac cycle, and myocardial blood supply & drainage.

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

-describe the composition of blood, the function of the formed elements, erythropoiesis & r.b.c. destruction.

-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 (brain, spinal cord & spinal & cranial nerves), including the various types of protection afforded the C.N.S.

Outcomes (cont.)

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

-relate the parts of the C.N.S.to the enclosing bones of the skull & the spinal column.

-describe the glands of the endocrine system in terms of their location, the hormones produced,and the effect on target organs.

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

-identify the relationships between organs of the female & male pelvis, and recognize structures from their location & sectional appearance.

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

Lectures, with pre-reading assignments from the text book.

Evaluation

2 midterms(each 1 hour long) each worth 30%	=	60%
1 Final(2 hours long) worth 40%	=	40%
TOTAL	=	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 G 9

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 each system in class. Students are expected to have referred to their textbooks for an explanation of these terms prior to the class discussion of that system.

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.