Las Positas College
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Course Outline for ANAT 1

GENERAL HUMAN ANATOMY

Effective: Fall 2008

I. CATALOG DESCRIPTION:
ANAT 1 — GENERAL HUMAN ANATOMY — 5.00 - 0 units

Structure and function of the human body with emphasis on microscopic, gross, and developmental anatomy. Microscopic examination of normal and pathological tissues, and dissection, supplemented by use of charts, models, and computer assisted instruction. Prerequisite: Biology 31 (completed with a grade of "C" or higher). Strongly recommended: Eligibility for English 1A. 3 hours lecture, 6 hours laboratory.

3.00 Units Lecture 2.00 Units Lab

Prerequisite
BIO 30 - Intro to College Biology

ENG 1A - Critical Reading and Composition

Grading Methods:
Letter Grade

Discipline:

	MIN	MAX
Lecture Hours:	54.00	0
Lab Hours:	108.00	
Total Hours:	162.00	0.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering the course a student should be able to:

A. BIO30
B. ENG1A

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

1. speak and write using anatomical terminology
2. identify organizational levels of the body and explain how they are related
3. define homeostasis and give examples of positive and negative feedback mechanisms
4. use anatomical terminology for regions, positions, planes and cavities
5. compare the structures of a variety of human body cells and explain how their structures are related to their functions
6. describe the structures, locations, and functions of specific types of epithelial, connective, muscle and nervous tissues
7. give the structure, function, and location of body membranes
8. describe the structure and function of the integumentary system
9. identify all bones of the human body and selected features
10. describe the structure and classify different types of articulations
11. describe the structure and function of the skeletal muscles
12. give the action, insertion, and origin of selected human muscles
13. list the functional divisions of the nervous system
14. describe the anatomy of peripheral nerves including spinal and cranial nerves and the anatomy of the autonomic nervous system
15. describe the anatomy of the brain and spinal cord
16. describe the structure of sensory receptors and organs and the pathways of nerve impulse conduction to the brain
17. describe the location and structure of endocrine glands
18. identify components of blood and list their functions
19. describe the anatomy of the heart and blood vessels
20. trace the arterial and venous paths of circulation
21. describe the structure and function of the lymphatic system
22. describe the structures and functions of the airways and lungs
23. describe the structures and functions mesenteries, organs of the alimentary canal, and accessory digestive organs
24. describe the gross anatomy and functions of urinary organs and the microscopic structure of the nephron

25. describe the gross anatomy, histology and functions of the male and female reproductive organs
26. describe the events of embryonic and fetal development and the anatomy of extra embryonic membranes
27. explain how the systemic functions interact with each other within the human organism

V. CONTENT:

A. Basic concepts of anatomy and physiology
   1. Homeostasis
   2. Levels of anatomical organization
   3. Anatomical terminology
   4. Relationship of structure and function

B. Cells
   1. Structures and functions
   2. Types

C. Histology
   1. Types and functions of tissues
   2. Glands
   3. Membranes

D. The integument and its derivatives
   1. Development of the integument
   2. Histology of the integument
   3. Functions of the integument
   4. Pathological conditions of the skin

E. General osteology and arthrology
   1. Anatomical divisions of the skeleton
   2. Structure and types of skeletal materials
   3. Formation and growth of cartilage
   4. Formation and growth of bone
   5. The axial skeleton
   6. The appendicular skeleton
   7. Classification and types of articulations
   8. Movements at articulations
   9. Bone and joint pathology

F. Muscular system
   1. Anatomy of skeletal muscles
   2. Histology
   3. Development
   4. Muscle terminology
   5. Muscles of face, jaw and neck
   6. Muscles of chest and abdomen
   7. Muscles of the upper extremity
   8. Muscles of the lower extremity
   9. Muscles of back
   10. Muscle pathology

G. Nervous system
   1. Histology
   2. Development
   3. Divisions of the nervous system
   4. Peripheral nervous system
   5. Autonomic nervous system
   6. Spinal cord
   7. Brain
   8. Nervous system pathology

H. Sense organs
   1. Olfaction and taste
   2. The eye
   3. The ear

I. Endocrine system
   1. Histology
   2. Overall functions
   3. Types and positions of endocrine glands
   4. Examples of endocrine disorders

J. Cardiovascular system
   1. Composition of blood
   2. Functions of blood
   3. Formation of blood cell
   4. Structure and function of the heart
   5. Types, structure, and function of blood vessels
   6. Arterial paths and venous paths of circulation
   7. Pathology of blood and blood-forming tissues
   8. Pathology of cardiovascular structures

K. Lymphatic system
   1. Lymphatic structures
   2. Functions of the lymphatic system
   3. Lymphatic pathways
   4. Examples of lymphatic disorders

L. Digestive system
   1. Oral cavity and development and structure of teeth
   2. Salivary glands
   3. Mesenteries
   4. Gross anatomy, histology and function of the alimentary canal
   5. Gross anatomy, histology and function of the accessory organs
   6. Examples of G-I tract pathologies

M. Respiratory system
   1. Histology
   2. Air pathways
   3. Lungs and pleura
   4. Examples of respiratory pathology

N. Urinary system
   1. Gross anatomy, histology and functions of urinary organs

2. Histology of the nephron
3. Examples of urinary system pathology

O. Reproductive system
1. Development
2. Gross anatomy, histology and functions of the male reproductive organs
3. Gross anatomy, histology and functions of the female reproductive organs
4. Selected pathology

P. Developmental Anatomy
1. Fertilization
2. Prenatal development
3. Maternal events of pregnancy
4. Labor and delivery

(Laboratory):

A. Anatomical terminology
B. Microscopy
C. Cytology
D. Histology of epithelial and connective tissues
E. Integumentary system
F. Microscopic and macroscopic structure of bone
G. Major divisions of the skeleton
H. Axial and appenidcular skeleton
I. Articulations
J. Removal of skin, muscle histology
K. Axial and appendicular muscles
L. Nervous tissue
M. Spinal cord and spinal nerves
N. Brain and cranial nerves
O. Eye and ear
P. Opening the body cavity
Q. Endocrine system
R. Cardiovascular system
1. Blood
2. Heart
3. Blood vessels

S. Lymphatic system
T. Respiratory system
U. Digestive system
V. Urinary system
W. Reproductive systems
X. Development

VI. METHODS OF INSTRUCTION:

A. **Lecture** - Multimedia lecture presentations
B. **Discussion** - discussions on major themes and concepts
C. **Audio-visual Activity** - Utilization of video, CD-ROM and other audio visual aids
D. Cat dissection as well as various sheep and cow organ dissecting assignments
E. Readings from the text and the laboratory manual
F. **Lecture** -
G. **Field Trips** - At least one field trip to participate in human cadaver dissection
H. Use of Anatomy computer software programs
I. **Student Presentations** -
J. **Lab** - Written assignments and lab reports
K. **Demonstration** - Demonstrations of models and organs
L. Utilization of compound light Microscope to view histology slides

VII. TYPICAL ASSIGNMENTS:

A. Reading and discussion 1. Read Chapter 13, "The Peripheral Nervous System," Marieb, Mallatt, Wilhelm, pp. 431-439. Be prepared to list by name and number the 12 cranial nerves and describe their origins, destinations and functions. 2. Read Chapter 19, "Blood Vessels," Marieb, Mallatt, Wilhelm, pp. 555-592. Be prepared to compare and contrast the arterial and venous systems. Also be prepared to describe where in the body you expect to find fenestrated capillaries and explain why. B. Collaborative learning 1. With your lab partner work through exercise 30: The Anatomy of the Heart. Observe and draw the cardiac muscle slide, study the two heart models and perform the sheep heart dissection. C. Writing 1. Complete the review sheets for exercise 30 in your laboratory manual. 2. Research and write a brief report on your chosen topic. Be prepared to present your report to the rest of the class in no more than ten minutes. Examples of topics: Carpal Tunnel syndrome; Kyphosis, Lordosis and other vertebral malformations.

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Lab Activities

B. **Frequency**

1. Minimum of 3 midterm examination
2. Minimum of 8 quizzes
3. Minimum of 2 laboratory midterm examinations (practicals)
4. Final examination and laboratory final examination
5. Minimum of 17 written laboratory reports

IX. TYPICAL TEXTS:

1. Marieb, Mallatt *Wilhelm, Human Anatomy.* 5th ed., Pearson, Benjamin Cummings, 2008.
2. N. Marieb *Human Anatomy & Physiology Laboratory Manual.* 8th ed., Benjamin Cummings, 2006.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. Latex gloves
B. Colored pencils