

Human Anatomy and Physiology

Course Description

The course is designed for those students wanting a depth of understanding in the structure and function of the human body. Focus will be at both micro and macro levels reviewing cellular functions, biochemical processes, tissue interactions, organ systems, and the interaction of those system as it relates to the human organism. This course will be appropriate for college bound students as well as those choosing a health services career cluster. Students will engage in active inquires, investigations, and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated into all activities. (Noncredit course: 45 lect/pres hrs, 45 lab hrs, 45 other hrs)

Text and References

Approved county texts and supplements.

Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A). (*designates a CRUCIAL goal)

1. (9) examine scientific knowledge contributors
2. (9) explore occupational science opportunities
3. (9) trace scientific concept historical development
4. (9) describe scientific knowledge cultural impact
5. (9) prepare /present oral and written presentations
6. conduct hands-on activities
- 7.* (6) exhibit safe laboratory practices
8. (6) exhibit scientific inquiry skills and attitudes
9. utilize Internet resources
10. (6) organize scientific data
11. (6) examine graph analysis
12. (6) examine data analysis methods
13. (6) conduct varied environmental explorations
14. (6) dissect fetal pigs
15. (6) design experiments
16. (6) demonstrate ethical science practices
17. (9) investigate science and technology
18. analyze directional terminology
19. use directional terminology
20. define course terminology
21. (22) analyze enzymes
22. compare organic compounds
23. (6) utilize SI (metric) measurements
24. describe cell function
25. (24) describe cell structure
26. (24) describe organizational levels
27. (24) analyze transport mechanisms
28. (24) analyze DNA/RNA protein synthesis
29. categorize four major tissue functions
30. (6) manipulate independent/ dependent variables
31. (29) categorize four major tissue structures
32. examine integumentary system
33. describe potential systems failures

34. sequence various body functions
35. (34) sequence various body structures
36. (33) describe systems interdependency
37. examine skeletal system
38. (37) describe bone tissue
39. (37) describe human skeletal development
40. (37) relate bone/tissue to skeletal development
41. (37) label human bones
42. (37) relate muscle and joint movement
43. (37) differentiate joint type movements
44. examine muscular system
45. (44) analyze muscle contraction
46. (44) analyze skeletal - neural - muscular interrelationships
47. (44) label human muscles
48. (51) classify neuron structure
49. (51) classify structure function
50. (52) dissect sheep eyes
51. examine autonomic nervous system
52. examine eye structure
53. examine ear structure
54. analyze endocrine system/ hormones
55. (9) utilize computers and electronic technology
56. examine circulatory system
57. (56) explain blood functions
58. (56) examine lymph system
59. (6) dissect sheep hearts
60. (61) relate respiratory system/ gas exchange
61. analyze respiratory system/ communication
62. (6) recognize scientific limitations
63. examine digestive system
64. (63) examine food/nutrition relationship
65. (63) examine metabolism requirements
66. (63) explain human body temperature regulators
67. (6) examine graphical analysis
68. analyze excretory system
69. (80) examine human growth/development
70. apply covalent/ionic bonding
71. (24) analyze DNA/ human inheritance
72. (80) compare meiosis/mitosis processes
73. (37) differentiate joint/muscle movement
74. (52) examine eye function
75. (6) dissect cow eye
76. (53) examine ear function
77. analyze hormones/ endocrine system
78. (6) dissect sheep heart
79. (61) relate respiratory system/ cellular respiration
80. analyze male/female reproductive system
81. (6) dissect small mammal
82. (6) observe human cadavers

ADDENDUM A

PERFORMANCE OBJECTIVES

6. The student will be allowed references. The student will be provided tools. The student will conduct hands on activities. Performance will be satisfactory if activities are conducted and the conducting is consistent with criteria established in advance by the teacher. The following Content Goals are related to this PO: 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 23, 30, 59, 62, 67, 75, 78, 81, and 82.
9. The student will be provided tools. The student will utilize Internet resources. Performance will be satisfactory if resources are utilized and the utilization is consistent with criteria established by the teacher. The following Content Goals are related to this PO: 1, 2, 3, 4, 5, 9, 17, and 55.
22. The student will be allowed references except during exams. The student will analyze 4 types of organic compounds. Performance will be satisfactory if compounds are analyzed and the analysis is consistent with material presented by the teacher, text, and lab exercises. The following Content Goals are related to this PO: 21, 22.
24. The student will be allowed references except during exams. The student will describe cell structures/functions. Performance will be satisfactory if the student satisfactorily completes an examination that is consistent with the material presented by the teacher, text, and lab exercises. The following Content Goals are related to this PO: 24, 25, 26, 27, 28, and 71.
29. The student will be allowed references except during exams. The student will categorize four major tissue functions. Performance will be satisfactory if student satisfactorily completes an examination that is consistent with the material presented by the teacher, text, and lab exercises. The following Content Goals are related to this PO: 29, 31.
32. The student will be allowed references except during exams. The student will examine integumentary system. Performance will be satisfactory if system is examined and the examination is consistent with material presented by the teacher.
33. The student will be allowed references except during exams. The student will describe potential systems failures. Performance will be satisfactory if failures are described and the description is consistent with material presented by the teacher and text and a test can be completed under the criteria determined by the teacher. The following Content Goals are related to this PO: 33, 36.
34. The student will be allowed references except during exams. The student will sequence various body functions. Performance will be satisfactory when given a list of structures or processes the student can sequence the structures or processes on an exam. The following Content Goals are related to this PO: 34, 35.
37. The student will be allowed references except during exams. The student will examine skeletal system. Performance will be satisfactory if system is examined and the examination is consistent with the material presented by the text, teacher, and lab exercises and a test can be completed satisfactorily in a time determined by the teacher. The following Content Goals are related to this PO: 37, 38, 39, 40, 41, 42, 43, and 73.
44. The student will be allowed references except during exams. The student will examine muscular system. Performance will be satisfactory if the student satisfactorily completes examinations consistent with the text, teacher lectures, and labs. The following Content Goals are related to this PO: 44, 45, 46, and 47.

51. The student will be allowed references except during exams. The student will examine autonomic nervous system. Performance will be satisfactory if system is examined and the examination is consistent with material presented by the teacher and a test can be satisfactorily completed within the appropriate criteria established by the teacher. The following Content Goals are related to this PO: 48, 49, and 51.
52. The student will be allowed references. The student will examine eye structure/function. Performance will be satisfactory if structure/function are examined and the examination is consistent with material presented by the teacher, text and lab and the student can satisfactorily pass an exam within standards established by the teacher. The following Content Goals are related to this PO: 50, 52, and 74.
53. The student will be allowed references except during exams. The student will examine ear structure/function. Performance will be satisfactory if structure/function is examined and the examination is consistent with material presented by the teacher, text, and labs and the student can satisfactorily pass an exam with the criteria established by the teacher. The following Content Goals are related to this PO: 53, 76.
54. The student will be allowed references except during exams. The student will analyze endocrine system/ hormones. Performance will be satisfactory if hormones are analyzed and the analysis is consistent with the material presented by the text and teacher.
56. The student will be allowed references during exams. The student will examine circulatory system. Performance will be satisfactory if system examined and examination is consistent with materials provided. The following Content Goals are related to this PO: 56, 57, and 58.
61. The student will be allowed references except during exams. The student will relate respiratory system/cell respiration. Performance will be satisfactory if the student can satisfactorily completes an exam consistent with the material presented by the text, teacher, and labs. The following Content Goals are related to this PO: 60, 61, and 79.
63. The student will be allowed references except during exams. The student will examine digestive system. Performance will be satisfactory if digestive system is examined and the examination is consistent with material presented by the text, teacher, and lab exercises. The following Content Goals are related to this PO: 63, 64, 65, and 66.
68. The student will be allowed references except during exams. The student will analyze excretory system. Performance will be satisfactory if system is analyzed and the analysis is consistent with material presented by the teacher and text and the student satisfactorily completes an exam based on criteria established by the teacher.
70. The student will be allowed references. The student will apply covalent/ionic bonding. Performance will be satisfactory if bonding is applied and the application is consistent with student text.
77. The student will be allowed references except during exams. The student will examine circulatory/lymph systems. Performance will be satisfactory if systems are examined and the examination is consistent with the material presented by the teacher, text, and labs and a test is satisfactorily completed according to criteria established by the teacher.
80. The student will not be allowed references. The student will analyze male/female reproductive system. Performance will be satisfactory if system is analyzed and the analysis is consistent with text and a test can be completed in allotted time. The following Content Goals are related to this PO: 69, 72, and 80.

Developed/Revised: May 3, 2004