Three Rivers
COMMUNITY COLLEGE

Course: **Human Anatomy & Physiology II / BIO K212 / CRN 33198 / T-R 6:30-9:15**

Credits: 4 hrs. credit (3 hours of lectures and 3 hours of lab each week)

Text (s): ***Fundamentals of Anatomy and Physiology***, Frederic H. Martini, 10th edition, Pearson Publisher.
Three Rivers Community College – Anatomy & Physiology II Lab Manual, Kirkpatrick, Copeland, et.al, 1st edition, Academx Publishing Services

Other required materials: Dissecting kit, non-latex disposable gloves, Lab coat (Landau model 3178) & Safety goggles.

Instructor: Dr. Peter Dukehart
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TRCC CATALOGUE COURSE DESCRIPTION:

Prerequisite: **BIO K211**

Catalogue Description: A continuation of **BIO 211-Human Anatomy & Physiology I**. The following systems will be covered: endocrine, digestive including nutrition, circulatory, lymphatic, respiratory, urinary including fluids and electrolytes, and reproductive. Human development and topics in human genetics will also be covered. This is a two-semester course. In order to receive knowledge of all of the systems of the human body, students are obligated to complete both semesters of Human Anatomy & Physiology.

CLASS ATTENDANCE POLICY:

Attendance of all class activities in lecture and laboratory is required. Absences are counted from the first meeting of class. More than four consecutive or more than six accumulative absences could result in student receiving a "F" grade in this course. You are responsible for any and all material that you miss due to an absence, excused or unexcused. **An explanation of the cause of all absences should be given to your instructor.**

ACADEMIC AND CLASSROOM INTEGRITY:

The instructor has primary responsibility for control over classroom and/or laboratory behavior and maintenance of academic integrity and can request the temporary removal or exclusion from the classroom or laboratory of any student engaged in conduct that violated the general rules and regulations of the institution. Or any student engaged in conduct deemed hazardous in the laboratory. Extended or permanent exclusion from lecture or laboratory activities or further disciplinary action can only be affected through appropriate procedures of the institution.

Plagiarism, cheating on quizzes or tests, or any form of academic dishonesty is strictly prohibited. Students guilty of academic dishonesty directly or indirectly will receive a zero for the exercise or quiz or test and may receive a "F" grade for the course in addition to other possible disciplinary sanctions with may be imposed through the regular institutional procedures. Any student that believes that he or she has been erroneously accused may appeal the case through the appropriated institutional procedure if their grade was affected.

PROCEDURE FOR DROPPING THE COURSE: ***College's Withdrawal Policy***

Any student who finds it necessary to discontinue this course MUST complete a withdrawal from in the Registrar's Office at the time of the withdrawal. If you can not withdraw in person, you may call the Registrar's Office and provides them with the appropriate information. Verbal withdrawals are not acceptable. Students may withdraw anytime up to and including November 5th, 2019. Students who do not withdraw but stop attending class will be assigned an "F" grade for the course. **Once you withdraw from class you are no longer eligible to take any remaining quizzes or tests.**

TESTS:

There will be approximately seven scheduled quizzes. All quizzes are given during the first 10 to 30 minutes of class. Four-unit tests and three-lab practicals will also be given.

GRADE DETERMINATION:

Quiz scores, Lab Practical scores, and Unit Test scores will determine your course grade.
The best six quiz scores will be added together and divided by six to determine the quiz average. The four-unit tests scores will be added together and divided by four to determine the lecture unit test average. The lab grade will be determined by averaging the three lab practical scores. Class & lab attendance will be considered in factoring your grade.

- **THERE WILL BE NO EXTRA CREDIT WORK GIVEN.**

GRADE SCALE: There will be NO grading on the normal distribution curve.

100 – 94 = A
93 – 90 = A-
89 – 87 = B+
86 – 84 = B
83 – 80 = B-
79 – 77 = C+
76 – 74 = C
73 – 70 = C-
69 – 67 = D+
66 – 64 = D
63 – 60 = D-
59 – 00 = F

It is expected that you are spending a minimum of 1 hour per day of study for this class (7-10 hours per week).

MAKE-UP POLICY

Any assignment missed can be obtained from the instructor. Lab work may be made up during free time within a week of the missed assignment if another lab section is available. Only one Unit Test or quiz will be allowed. Makeup tests or quizzes will be granted on an individual basis only following a conference with the instructor; where the reason(s) for missing the test must be determined mitigating circumstances beyond the control of the student such as, illness, death in the family, or change in condition of employment.

CLASS CANCELLATION

If school is cancelled, notification of cancellation due to inclement weather will be available by telephone by 6:00 am for daytime classes and by 2:30 pm for evening classes by calling the College's main telephone at (860) 215-9000, pressing 1, and listening to the taped announcement. The College's website will also have announcements available by accessing the www.threerivers.edu home page. The myCommnet Alert Notification System will also be used to deliver important information regarding weather-related class cancellations, via both email messages and text messages, to registered individuals. To register, log on to your myCommnet account at http://my.commnet.edu/ and follow the link to myCommnet Alert.

CELLULAR PHONE & ELECTRONIC DEVICES

Cellular phones are only allowed in class or lab if they are turned off or in silent mode. Under no circumstance are phones to be answered in class. When there are extenuating circumstances that require that a student be available by phone, that student must speak to the instructor prior to class, so that together they can arrive at an agreement. There is no texting, Snapchat, Instagram, Facebook, etc. permitted during class or lab. Cell phones, tablets, laptop computers, etc. are to be put away and out of sight during all quizzes, tests, an lab practicals.

- ***All cell phones and electronic devices such as tablets, iPads, laptops, etc. must be out of sight during quizzes, tests, and lab practicals.***

BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:

"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."

If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact the Diversity Officer and Title IX Coordinator.

NON-DISCRIMINATION

Three Rivers Community College does not discriminate on the basis of race, color, religious creed, age, sex, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, sexual orientation, gender identity and expression, or genetic information in its programs and activities.

DIGICATION

All students are required to maintain an electronic portfolio using the College template within Digication which can be accessed can be accessed at https://threerivers.digication.com.

DISABILITY

Three Rivers Community College (TRCC) is committed to the goal of achieving equal educational opportunity and full participation for individuals with disabilities. To this end, TRCC seeks to ensure that no qualified person is excluded from participation in, is denied the benefit of, or otherwise is subjected to discrimination in any of its programs, services, or activities.

REVISIONS TO THE SYLLABUS:

Students are responsible for learning all of the objectives and all of the items in the course outline whether they are discussed in lecture and/or laboratory or not. The instructor reserves the right to revise the objectives, topical outline, or academic schedule contained in this syllabus without notice. However, if the revisions affect scheduled unit test a 48 hour notice will be given for the new test date.

ACCEPTANCE POLICY:

After reading this syllabus, choosing to stay registered for this course exemplifies your acceptance of the syllabus and all policies and consequences outlined in the syllabus. If you do not agree with any of the terms in the syllabus, you are free to withdraw.

General Course Objectives:

- To aid the student in developing an understanding of the life processes.
- To aid the student in developing an understanding of the normal structures and functions of the human body.
- To provide a useful body of knowledge for biology & science related major studies, nursing, and allied health students.

Course Learning Outcomes (Objectives): Human Anatomy and Physiology II

1. The student will be able to compare the physiology of the endocrine system and the nervous systems using practical examples and/or practical applications.
2. The student will be able to compare the cellular components of the endocrine system with those of other tissues and systems and describe how endocrine organs are controlled.
3. The student will be able to compare the major chemical classes of hormones and describe the chemical composition of each class of hormones.
4. The student will be able to explain in detail the general mechanisms of hormonal action.
5. The student will be able to explain how hormones interact to produce coordinated physiological response.
6. The student will be able to name the major endocrine glands of the body describe their location in the body and the hormones they secrete.
7. The student will be able to identify the hormones that are especially important to normal growth, and discuss their roles.
8. The student will be able to explain the action of the hormones secreted by the various endocrine glands of the body.
9. The student will be able to discuss and give examples of both positive and negative feedback mechanisms.
10. The student will be able to describe the interrelationship of neural and hormonal control.
11. The student will be able to discuss the consequences of over-secretion and under-secretion of various hormones.
12. The student will be able to describe the effects that hormones have on behavior.
13. The student will be able to distinguish between physical and psychological stress.
14. The student will be able to describe the general stress response.
15. The student will be able to name the organs of the digestive system and give their location in the body.
16. The student will be able to describe the structure of the wall of the alimentary canal (G.I. Tract).
17. The student will be able to demonstrate knowledge of regulatory control of the nervous and endocrine systems over the alimentary canal (G.I. Tract).
18. The student will be able to describe the mixing and movements of material through the alimentary canal (G.I. Tract).
19. The student will demonstrate knowledge of the swallowing mechanism.
20. The student will demonstrate knowledge of the phases and the regulation of gastric secretion.
21. The student will demonstrate knowledge of the organs of digestion in the mouth and their role in the digestive process.
22. The student will be able to name, give the location and function of the salivary glands.
23. The student will be able to give the structural make-up and the functions of the pharynx and esophagus.
24. The student will demonstrate knowledge of the structural organization and the function of the stomach.

25. The student will demonstrate knowledge of the structure and function of the small and large intestines.
26. The student will demonstrate knowledge of the structure and function of the pancreas.
27. The student will demonstrate knowledge of the structure and function of the liver.
28. The student will be able to list the enzymes secreted by the various digestive glands or organs and describe the function of each.
29. The student will demonstrate knowledge of the hydrolysis of carbohydrates, neutral fats, and proteins.
30. The student will be able to explain how the products of digestion are absorbed.
31. The student will acquire knowledge of some common disorders of the digestive system.
32. The student will be able to define and explain nutrition, nutrients, and essential nutrients.
33. The student will demonstrate knowledge of the basic food groups and their major sources.
34. The student will be able to explain how carbohydrates, lipids, proteins, and amino acids are utilized by the cells.
35. The student will be able to name the major vitamins needed by the body, give their chemical make-up and describe the general function of each.
36. The student will be able to explain the consequences of vitamin deficiencies.
37. The student will be able to name and describe the general functions of the major minerals and trace elements essential to man.
38. The student will demonstrate knowledge of basic metabolism and temperature regulation.
39. The student will demonstrate knowledge of the composition and functions of the blood.
40. The student will be able to distinguish between the various types of cells found in blood.
41. The student will be able to list the major components of blood plasma and give their functions.
42. The student will be able to explain the formation of blood cells and how it is controlled.
43. The student will demonstrate knowledge of the clotting mechanism of blood.
44. The student will be able to explain the basis for blood typing and the methods used to avoid adverse reaction following blood transfusion.
45. The student will be able to describe how blood reaction may occur between fetal and maternal tissues and how such reaction can be prevented.
46. The student will demonstrate knowledge of the heart and blood vessels both structurally and functionally.
47. The student will be able to describe the cardiac conduction system.
48. The student will demonstrate knowledge of the cardiac cycle and the ECG.
49. The student will demonstrate knowledge of the regulation of heart function and blood pressure.
50. The student will demonstrate knowledge of the division of the circulatory system (circulatory circuits).
51. The student will be able to identify and describe the location of the major arteries and veins of the human body in both the pulmonary and systemic circuits.
52. The student will demonstrate knowledge of both hepatic and renal portal systems of circulation.
53. The student will demonstrate knowledge of fetal circulation.
54. The student will be able to define cardiac arrhythmia and describe several forms for arrhythmia.
55. The student will demonstrate knowledge of some disorders of the blood/cardiovascular system.
56. The student will demonstrate knowledge of the structure and function of the lymphatic vessels, nodes, and associated organs.
57. The student will demonstrate knowledge of the composition and circulation of lymphatic fluid.

58. The student will be able to distinguish between specific and nonspecific body defenses and provide an example for each.
59. The student will be able to demonstrate and/or explain how lymphocytes are formed and their role in the immune mechanisms.
60. The student will be able to name the major types of immunoglobulins and discuss their functions.
61. The student will be able to distinguish between primary and secondary immune responses as well as active and passive immunity.
62. The student will be able to explain how allergic reactions and tissue rejection reaction are related to the immune response.
63. The student will demonstrate knowledge of the structure and function of the organs of the respiratory systems and air passageways.
64. The student will demonstrate knowledge of the respiratory musculature and pressure changes produced by their action.
65. The student will demonstrate knowledge of physical and chemical changes associated with oxygen and carbon dioxide transport.
66. The student will demonstrate knowledge of the respiratory volumes and exchanges.
67. The student will demonstrate knowledge of the phases of the respiratory process.
68. The student will review the major events that occur during cellular respiration and explain how oxygen is utilized by cells.
69. The student will demonstrate knowledge of the mechanisms of regulation the respiratory system.
70. The student will demonstrate knowledge of some common physiological modification of the respiratory process.
71. The student will become familiar with some common respiratory disorders and their effect on the respiratory process.
72. The student will demonstrate knowledge of the structure, location, and functions of the kidneys.
73. The student will demonstrate knowledge of the structures, locations, and functions of the ureters, the bladder, and the urethra.
74. The student will be able to trace the pathway of blood through the renal portal system.
75. The student will demonstrate knowledge of the kidney tissues.
76. The student will be able to describe the nephron and explain the functions of its parts.
77. The student will demonstrate knowledge of the physiology of urine formation.
78. The student will be able to explain glomerular filtration and describe the composition of the filtrate.
79. The student will be able to discuss the composition of urine.
80. The student will demonstrate knowledge of the regulation of kidney functions.
81. The student will be able to discuss the process of micturition and explain how it is controlled.
82. The student will be able to describe the distribution of body fluids into the major fluid compartments.
83. The student will be able to explain what is meant by water and electrolyte balance and discuss why it is important.
84. The student will demonstrate knowledge of the mechanisms controlling the distribution of the body's water.
85. The student will demonstrate knowledge of the mechanisms of ionic homeostasis (electrolyte homeostasis).
86. The student will demonstrate knowledge of the relationship between trauma and water distribution.
87. The student will be able to explain factors leading to water intoxication and dehydration and their effects on the water/electrolyte balance.
88. The student will be able to explain or define edema and list several causes and their effects.

89. The student will be able to understand and describe the consequences of sodium and potassium imbalance as well as imbalances in various other electrolytes in the human body.
90. The student will be able to define pH and describe the major sources of hydrogen ions.
91. The student will demonstrate knowledge of the acid-base balance and buffer system.
92. The student will be able to explain acidosis and alkalosis, conditions that cause them to occur and how they may be controlled.
93. The student will be able to state the general function of the reproductive system.
94. The student will be able to describe the process of gametogenesis (spermatogenesis and oogenesis).
95. The student will be able to describe the structure, location and function of the female reproductive anatomy.
96. The student will be able to describe the structure, location and function of the female reproductive anatomy.
97. The student will be able to describe how hormones control the activities of the female reproductive system and how they are related to the development of the female secondary sexual characteristics.
98. The student will be able to describe how hormones control the activities of the female reproductive system and how they are related to the development of the female secondary sexual characteristics.
99. The student will be able to describe the physiological changes relative to the menstrual cycle.
100. The student will be able to discuss the structure and function of the mammary glands.
101. The student will be able to explain fertilization and early embryonic development.
102. The student will be able to explain the physiological and anatomical changes experienced during pregnancy and the birth process.
103. The student will be able to discuss some common methods of contraception.
104. The student will be able to distinguish between growth and development.
105. The student will be able to describe the major events that occur during the period of cleavage.
106. The student will be able to explain how the primary germ layers originate and list the structures produced by each layer.
107. The student will be able to describe the formation and function of the placenta.
108. The student will be able to list and give the functions of the extra-embryonic membranes.
109. The student will be able to define the term fetus and discuss fetal development.
110. The student will be able to trace the general path of blood through the fetal circulatory system.
111. The student will demonstrate knowledge of the Mandolin Laws of the Genetics.
112. The student will demonstrate knowledge of the various forms of gene interaction.
113. The student will be able to describe how chromosomes control the inheritance of sex.
114. The student will be able to describe the patterns of sex-linked traits.
115. The student will be able to define non-disjunction of chromosomes and explain the genetic and/or developmental consequences.
116. The student will be able to discuss some common forms of human genetic diseases.
117. The student will be able to explain the role of DNA and RNA in inheritance.