JEFFERSON COLLEGE
COURSE SYLLABUS

RCP110
Cardiopulmonary Anatomy and Physiology
4 Credit Hours

Prepared by:
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RCP110 Cardiopulmonary Anatomy and Physiology

I. CATALOGUE DESCRIPTION
   A. Prerequisite – Admission to the Program
   B. Credit hour award - 4
   C. Description - This course provides a detailed discussion of the normal physiologic principles utilized by the cardiopulmonary system, to include: anatomy and physiology of the upper and lower airway, neurogenesis of breathing, reflexes governing respiration, properties of elastance, resistance, compliance, and conductance, physiologic properties of the pulmonary and systemic vascular systems. The application of mathematics to physiologic principles with a focus on the sciences used in the practice of respiratory care will be practiced. Emphasis will be placed upon physics, chemistry, nutrition, and microbiology as related to the cardiopulmonary system. (S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

<table>
<thead>
<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
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<tbody>
<tr>
<td>Describe the cardiopulmonary system in detail</td>
<td>Class activity</td>
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<td>Homework</td>
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<td>Summative Exam</td>
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<td>Explain the effects of gases on the cardiopulmonary system</td>
<td>Class activity</td>
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<td>Summative Exam</td>
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<td>Relate the interactions of the cardiopulmonary system and the renal system</td>
<td>Class activity</td>
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<td>Summative Exam</td>
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<td>Explain the mechanics of ventilation</td>
<td>Class activity</td>
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<td>Summative Exam</td>
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<td>Describe the renal system and its function</td>
<td>Class activity</td>
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<td>Summative Exam</td>
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<td>Apply gas law principles to the respiratory system</td>
<td>Class activity</td>
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<td>Identify EKG tracings and its application to the cardiovascular system</td>
<td>Class activity</td>
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<td>Evaluate acid-base levels and its effects on the respiratory system</td>
<td>Class activity</td>
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<td>Analyze the effects of aging on the cardiopulmonary system</td>
<td>Class activity</td>
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<td>Homework</td>
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<td>Summative Exam</td>
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III. OUTLINE OF TOPICS
A. Respiratory System
   1. Anatomy of the respiratory system
   2. Mechanics of ventilation
   3. Ventilation and gas interactions
   4. Pulmonary blood flow
   5. Gas diffusion
   6. Oxygen and carbon dioxide equilibrium and transport
   7. Control of ventilation
   8. Ventilation Perfusion
   9. Assessment of oxygenation and acid-base status
   10. Lung protection strategies
B. Cardiovascular system
   1. Anatomy of the cardiovascular system
   2. Physiology of the cardiovascular system
   3. Cardiac electrophysiology
   4. EKG’s
   5. Control of cardiac output and hemodynamic measurements
C. Renal System and its effects on the cardiopulmonary system
   1. Anatomy and physiology of the renal system
   2. Electrolyte and acid-base regulation
D. Effects of aging on the cardiopulmonary system

IV. METHOD(S) OF INSTRUCTION
A. Lecture
B. Readings from textbook
C. Supplemental handouts
D. Classroom activities
E. Participation in active learning by computer programs, games, and internet based activities.
F. Peer interactive activities and discussions in classroom and online

V. REQUIRED TEXTBOOKS


VI. REQUIRED MATERIALS (student)
A. Course homepage available through jeffco.edu
B. A computer with internet access (available through the Jefferson College Labs).
C. Paper, notebooks, pens, pencils with erasers

VII. SUPPLEMENTAL REFERENCES
A. Class handouts
B. Videos

VIII. METHOD OF EVALUATION (basis for determining course grade)
A. Classroom activities 10%
B. Homework 20%
C. Summation examinations-comprehensive 60% - Final is worth at least 30% of total grade
D. Attendance 10%
E. Grading scale:
   A=92-100%
   B=86-91.9%
   C=80-85.9%
   D=70-79.9%
   F=0-69.9%

IX. ADA STATEMENT
Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library; phone 636-797-3000, ext. 169).

X. ACADEMIC HONESTY STATEMENT
All students are responsible for complying with campus policies as stated in the Student Handbook. Any student who cheats or plagiarizes will be subject to dismissal from the respiratory program and will be referred to the college for disciplinary action. (see College website, http://www.jeffco.edu/jeffco/index.php?option=com_weblinks&catid=26&Itemid=84 )