GROSSMONT COLLEGE

Official Course Outline

RESPIRATORY THERAPY 105 – CARDIOPULMONARY PHYSIOLOGY AND DISEASE ENTITIES

1. Course Number Course Title Semester Units Semester Hours

RESP 105 Cardiopulmonary Physiology 4 4 hours lecture: 64-72 hours

and Disease Entities 128-144 outside-of-class hours 192-216 total hours

2. Course Prerequisites

Admission to the Respiratory Therapy Program

Corequisites

A “C” grade or higher or concurrent enrollment inRespiratory Therapy 108 and 112 and 114

Recommended Preparation

None

3. Catalog Description

This course is designed to explore advanced functions of the cardiopulmonary system by building upon previous knowledge of human anatomy and physiology. The course expands on the physiological processes of ventilation, gaseous diffusion, gaseous transport, the relationship between the pulmonary and systemic circulations, and how acid-base balance is essential in maintaining cellular homeostasis. Students will compare and contrast normal and abnormal anatomy and physiology and examine the interrelationship between abnormal findings and disease.

4. Course Objectives

The student will:

1. Describe how cardiopulmonary anatomy facilitates lung clearance.
2. Relate lung compliance, airway resistance and physical gas laws to the mechanics of ventilation.

c. Summarize how partial pressure gradients effect gaseous diffusion and transport to the cells.

d. Interpret arterial blood-gases and associate the results with specific obstructive and restrictive lung diseases.

e. Describe how pulmonary function tests are obtained and classify the results.

f. Compare and contrast clinical findings that are common in patients with obstructive and/or restrictive lung diseases.

5. Instructional Facilities

a. Standard classroom

b. Computer laboratory

c**.** Respiratory Therapy skills laboratory

d. High fidelity simulation laboratory

6. Special Materials Required of Student

a. Calculator

b. Appropriate clinical attire as described in the Student Handbook

c. Access to computer, printer, and scanner

d. Watch with second hand

e. Stethoscope

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6. Special Materials Required of Student (continued)

g. Grossmont College Respiratory Therapy student name tag

h. Small scissors

i. Grossmont College Respiratory Therapy badge buddy

7. Course Content

1. Advanced cardiopulmonary anatomy and physiology
2. Mechanics of ventilation
3. Diffusion and transport of oxygen and carbon dioxide
4. Acid base balance, imbalance and interpretation of blood gases
5. Pulmonary function measurements
6. Hemodynamic measurements
7. Ventilation-perfusion relationships

8. Methods of Instruction

a. Lecture

b. Class and group discussion

c. Multimedia presentationssuch as DVDs or virtual simulation programs

d. Critical thinking activities such as concept mapping and graphic organizers

e. Analysis of case studies

9. Methods of Evaluating Student Performance

a. Quizzes

b. Written examinations including a written comprehensive final examination

c. Verbal questioning.

d. Written assignments such as short answer questions, case studies, interpretation of lab data, and research paper on topics such as cardiopulmonary pathologies, procedures and clinical best practices

e. Oral and visual presentations

10. Outside Class Assignments

a. Written research paper on topics such as cardiopulmonary pathologies, procedures and clinical best practices

b. Viewing and/or reading of handouts and PowerPoints

c Reading assignments including textbook, medical journal articles and case studies

d. Viewing of online resources and educational videos

e. Collaborative evidence-based project and presentation about cardiopulmonary pathologies

11. Texts

a. Required Text(s):

Beachey, Will. *Respiratory Care Anatomy and Physiology: Foundations for Clinical Practice*. 4th ed. St. Louis, Missouri: Elsevier. 2018.

1. Supplementary texts and workbooks:

None

Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

1. Make use of a patient scenario to assess the specific obstructive and/or restrictive disease with which the patient presents and select the appropriate laboratory tests to evaluate lung function.
2. Make use of a patient scenario to compare and contrast obstructive or restrictive pulmonary diseases.

Date approved by the Governing Board: May 21, 2019