ANTELOPE VALLEY COLLEGE

Academic Affairs
Course Outline of Record

Academic Affairs Only

- ☐ New Course
  - ☐ Effective Date (for articulation)
- ☒ COR Revision 5/28/2009
- ☒ Pre Req/Advisories 5/28/2009
- ☐ Other Changes
- ☒ SLOs 2/8/2008

COURSE SUBJECT & NUMBER: RCP 101 RCP 101CL

COURSE NAME: Fundamentals of Respiratory Care

COURSE UNITS: 6 **COURSE HOURS:** 5 hours lecture and 3 hours clinic per week

COURSE REQUISITES: ***(Follow format of similar courses found in the college catalog.)***
Limitation on Enrollment: Admission to the Respiratory Care/Therapy program
Prerequisites: Completion of BIOL 101, BIOL 201, BIOL 202 and CHEM 101 with a grade of "C" or better. Eligibility for ENGL 101 and MATH 102
Corequisite: Concurrent enrollment in RCP 101CL and RCP 102
Advisory: College level reading

COURSE DESCRIPTION: ***(Write a short paragraph providing an overview of topics covered. Be sure to identify target audience--transfer, major, GE, degree/certificate, etc. If repeatable, state the number of times at end of description as (R#)***.
This course introduces students to atmospheric physics, cardiopulmonary anatomy and physiology, blood gas chemistry, and ventilatory dynamics. Basic concepts of health and disease with emphasis on cardiopulmonary disorders, fundamentals of problem solving techniques, and safe handling of medical gases and equipment are studied. Students are introduced to selected respiratory care and diagnostic equipment, respiratory care techniques, and common problems encountered with respiratory care equipment. (AVC)

COURSE OBJECTIVES: ***(Title 5 requires that courses show evidence of critical thinking skills. Use Bloom's taxonomy to formulate concise, performance-based measurable objectives common to all students. Objectives must be closely aligned with course content, assignments, and methods of evaluation)***

Upon completion of course, the successful student will be able to

1. Identify the composition and behavior of the atmosphere as it relates to the physiology of human respiration.
2. Identify structures and functions of the human cardiopulmonary system.
3. *Distinguish changes in the cardiopulmonary system from conception to old age.
4. *Compare and contrast signs and symptoms of various cardiopulmonary diseases.
5. *Use medical equipment and devices commonly used in the diagnosis and care of patients with cardiopulmonary diseases.
6. *Demonstrate skills in clinical therapeutic and diagnostic problem solving with instructor assistance.

* Denotes SCANS competencies.

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COURSE CONTENT: ***(Enter course content in terms of specific topics or a specific body of knowledge that each instructor must cover. Put topics in outline form with major and minor headings. Each instructor must cover all material listed below.)***

I. Atmospheric physics
   a. Measurement and nomenclature
   b. Mathematical operations
   c. States of matter
   d. Mass, weight and density
   e. Basic electrical theory
   f. Light
   g. Fluid physics
   h. Gas laws
   i. Surface tension
   j. Thermodynamics

II. Anatomy & physiology of the respiratory system
   a. Structure and function of upper airway
   b. Structure and function of lower airway
   c. Diffusion of pulmonary gases

III. Ventilation
   a. Control of ventilation
   b. Ventilation-perfusion relationships

IV. Pulmonary function measurement

V. Anatomy & physiology of the circulatory system
   a. Structure and function of the heart
   b. Structure and function of the vessels

VI. Oxygen transport and acid-base balance

VII. Effects of renal failure on the cardiopulmonary system

VIII. Effects of growth and development on the cardiopulmonary system
   a. Fetus and newborn
   b. Infancy
   c. Childhood
   d. School age
   e. Adulthood
   f. Older adulthood

IX. Asepsis and decontamination
   a. Handwashing
   b. Gloving
   c. Isolation techniques
   d. Sterilization techniques

X. Medical gases and oxygen supply systems
   a. Medical gas and delivery systems
   b. Types of oxygen delivery devices

XI. Medical gas analysis
   a. Arterial gas analysis
   b. Techniques for obtaining specimens

XII. Spirometry and Pulmonary function measurement
   a. Spirometry equipment and its use
   b. PFT equipment and its use

XIII. Humidity therapy

XIV. Aerosol therapy

XV. Environmental therapy

XVI. Incentive spirometry

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TYPICAL HOMEWORK ASSIGNMENTS: (Do not include in-class work, quizzes, or tests)
This information is necessary for all credit courses. Assignments should be closely related to course objectives, content, and methods of evaluation. (See sample of a "Model Outline" in the AP&P Standards & Practices Handbook.) Include a range of assignments (minimum of three) from which faculty may choose when designing their syllabus.

1. ***Describe nature and frequency of typical reading assignments if applicable; note if any are required:***
30-50 pages per week from the assigned texts and ancillary readings

2. ***Describe nature and frequency of typical writing assignments if applicable; note if any are required:***
One 5 page paper related to respiratory disease requiring ancillary readings

3. ***Describe nature and frequency of typical computational assignments if applicable; note if any are required:***
Calculation of mass, weight and density weekly during the first four weeks of the course

4. ***Describe other types of homework assignments that students may be asked to complete (oral presentations; special projects; visual/performing arts; etc); note if any are required:***
Computer assisted instructional programs biweekly

For categories 1-4 above, list the estimated hours per week it would take a student to complete assignments. *Title 5 (section 55002)* requires that *each unit must be shown to require three hours of work per week by the student either in or out of class.* Homework formula: 3 hours of class work *times* each unit of credit *minus* classroom hours *equals* required homework hours.

Reading Assignments: 8 hrs ***Writing Assignments***: 2

Computational Assignments: 2 ***Other Assignments***: 1

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METHODS OF INSTRUCTION: ***(Methods must be consistent with content and appropriate to objectives; state in terms of what instructor will be doing in order to present course content to students: for example, lecture, demonstration, present audio/visual materials; facilitate group work, etc. Do not list specific instructional equipment.)***

Lecture, discussion, demonstration and return demonstration, computer assignments, instructor-facilitated role play, Problem-based learning scenarios

METHODS OF EVALUATION: ***(These must be clearly related to course objectives and reflect course content and assignments in order to comply with Title 5 requirements. Describe what instructor will be looking for when evaluating various assignments and tests in order to determine whether students have met course objectives. Grades must be based on demonstrated proficiency in subject matter and determined, where appropriate, by essays, objective and essay tests, research papers or projects, problem solving exercises, or skills' demonstrations.)***

Objectives 1-4: Multiple choice, short answer and essay questions to determine students' knowledge of atmospheric physics, structure and function of the cardiopulmonary system, signs and symptoms of cardiovascular disease.
Objectives 5 & 6: Lab practical exams to determine competency in use of equipment. Paper to determine ability to compare and contrast cardiopulmonary diseases.

Suggested Texts or Other Instructional Materials
(List several when possible; include title, author, publisher, date, and latest edition. If older than five years, provide brief rationale.)

Cario, J.M. and Pilbeam, S. Mosby's Respiratory Care Equipment, 7th Ed. Mosby, 2004.
Ruppel, G. Manual of Pulmonary Function Testing, 8th Ed., Mosby, 2008
Scanlon, C.L. Spearman, C.B, & Sheldon, R.L. Egan's Fundamentals of Respiratory Care, 8th Ed., Mosby, 2003.
White, G. Basic Clinical Competencies for Respiratory Care, 4th Ed., Delmar Cengage Learning, 2003. (Most Recent edition available; This is a classic text in the field written by the most authoritative textbook author in the field.)