



I. GENERAL COURSE INFORMATION

Subject and Number: Respiratory Care 288
Descriptive Title: Fundamentals of Pulmonary Function Testing
Course Disciplines: Respiratory Technologies
Division: Health Sciences and Athletics

Catalog Description:

This course will review the fundamental procedures and equipment used to measure pulmonary function in non-symptomatic populations and in populations of people with chronic pulmonary diseases. Experience with exhaled air data collection will be provided through hands-on procedures at the college and at health service organizations' diagnostic laboratories. Skills to be learned will include performance of public health screening and diagnostic pulmonary function testing.

Conditions of Enrollment:

Enrollment Limitation

Students must be admitted to the El Camino College Respiratory Care Program or have graduated from an accredited respiratory care program.

Course Length:	X Full Term	Other (Specify number of weeks):
Hours Lecture:	2.00 hours per week	TBA
Hours Laboratory:	3.00 hours per week	X TBA
Course Units:	3.00	

Grading Method: Letter
Credit Status: Associate Degree Credit

Transfer CSU: Yes **Effective Date:**
Transfer UC: No **Effective Date:**

General Education:

El Camino College:

CSU GE:

IGETC:

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

SLO #1 Appropriate and Competent PFT Administration

Given an in-class patient care scenario during an oral examination based on assigned reading, demonstrate appropriate and competent clinical competencies for performing basic bedside Pulmonary Function Testing found in the section of the Data Arc system for clinical practice.

SLO #2 Explain RC PFT Administration

During classes & labs, students will demonstrate and explain appropriate respiratory care Pulmonary Function Testing competencies such as performing a FEV1, FVC and the calculations to convert to FEV1%.

SLO #3 Comprehensive Final Exam on Pulmonary Function Testing

Students who stay in the course till the end of semester will take a comprehensive final multiple choice examination on Pulmonary Function Testing and 80% will obtain a grade of 70% or better.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below)

1. Calibrate exhaled flow and volume measuring devices used in pulmonary function testing.
2. Operate exhaled flow and volume measuring devices used in pulmonary function testing.
3. Identify components, operational sequence and valid values given access to test results, patient information and quality control data.
4. Identify proper pulmonary function methods, tests and equipment for public health screening, bedside measurements and laboratory diagnostic testing.
5. Perform exhaled flow and volume measurements for public health screening, bedside measurements and laboratory diagnostic testing.
6. Identify appropriate assembly, function, operation, and cleanliness of pulmonary function equipment.
7. Instruct patients to perform valid pulmonary function tests at public health fairs, the bedside and in the laboratory.

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topic
Lecture	9	I	Patient instruction before, during, and after pulmonary function testing such as: A. Proper patient position for Forced Vital Capacity. B. Proper breathing pattern for Maximal Voluntary Ventilation Maneuver.
Lecture	9	II	Pulmonary function tests on non-symptomatic populations and patients with chronic respiratory diseases such as: A. Slow vital capacity B. One second Forced Expiratory Volume

Lecture	9	III	Calibration, operation and quality control of pulmonary function equipment such as: A. Body plethysmograph B. Bedside spirometer
Lecture	9	IV	Interpretation of pulmonary function test results from screening, bedside measurement and diagnostic testing for patients with issues such as: A. Active smoking B. Chronic bronchitis
Lab	54	V	Lab/Clinic hours to be arranged
Total Lecture Hours		36	
Total Laboratory Hours		54	
Total Hours		90	

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Problem solving demonstrations (computational or non-computational)

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Given access to a patient with chronic obstructive pulmonary disease and/or a patient with normal lungs, the student will perform a pulmonary function screening and record the patient results.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Given access to quality control data and simulated spirometry results, identify if the values are valid for patient care decision-making.
2. After reviewing patient pulmonary function evaluation data, identify appropriate interpretations of the degree and type of disease present.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams

Objective Exams

Quizzes

Reading reports

Written homework

Laboratory reports

Field work

Class Performance

Homework Problems

Term or other papers

Multiple Choice

Completion

Matching Items

True/False

Other (specify):

Case study workup on patients and reporting in writing and orally the information gathering and decision making in managing the patient's care.

Clinical rotations in neonatal and pediatric units performing patient care and answering oral

questions indicating information gathering and problem-solving skills.

Equipment and patient simulation situation problems students workup and report in writing and orally the information gathering and decision making in trouble-shooting the equipment until resolution of the problem or achieve functionality.

Multiple true/false, Patient Management Problems, and branching logic

V. INSTRUCTIONAL METHODS

Demonstration

Discussion

Field trips

Group Activities

Guest Speakers

Internet Presentation/Resources

Laboratory

Lecture

Multimedia presentations

Role Play

Simulation

Other (please specify)

Clinical performance at the patient's bedside in our clinical affiliate hospitals, clinics, health fairs and elementary schools indicating understanding of patient's therapy and capable of recommending changes when indicated.

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study

Answer questions

Skill practice

Required reading

Problem solving activities

Written work

Observation of or participation in an activity related to course content

Other (specify)

Group active learning assignments simulating clinical situations that require information collection and decision making in order to solve patient problem and determine course of therapy.

Estimated Independent Study Hours per Week: 4

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Gregg Ruppel. Manual of Pulmonary Function Testing. 9th ed. ed. Mosby Publishers, 2009.
Qualifier Text: Discipline Standard

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

D. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

Requisites	Category and Justification
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B. Requisite Skills

Requisite Skills

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification
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D. Recommended Skills

Recommended Skills

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact
Students must be admitted to the El Camino College Respiratory Care Program or have graduated from an accredited respiratory care program.	Students begin the clinical phase (A.S. degree requirements) of the Respiratory Care program after being accepted into the program.

Course created by Stanley M. Baldwin

BOARD APPROVAL DATE: 07/01/1990

LAST BOARD APPROVAL DATE: 05/18/2020

Last Reviewed and/or Revised by: Roy Mekar

Date: 02/02/2020

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