

## Course Syllabus

COURSE: RSPT 1240-001 Advanced Cardiopulmonary Anatomy & Physiology  
SEMESTER: Spring 2019  
CLASS LOCATION: Reese Campus – Building 5 Room 521  
CLASS TIMES: 11:00 AM – 11:50 AM  
Monday-Wednesday-Friday  
INSTRUCTOR: Ron Edwards BS, RRT  
OFFICE: Room 519  
OFFICE HOURS: Monday & Wednesday: 2:30 PM – 4:00 PM  
Tuesday & Thursday: 1:30 PM – 4:00 PM  
Other Times by Appointment  
OFFICE PHONE: (806) 716-4625  
E-MAIL: redwards@southplainscollege.edu

*"South Plains College improves each student's life."*

### GENERAL COURSE INFORMATION

#### COURSE DESCRIPTION

This course provides an advanced presentation of anatomy and physiology of the cardiovascular and pulmonary system.

#### STUDENT LEARNING OUTCOMES

Students will:

Describe and explain advanced concepts of cardiopulmonary anatomy and physiology; Describe the neurological control of breathing, ventilation/perfusion concepts, and summarize principles of gas transport.

#### COURSE OBJECTIVES - Outline form (correlated to Scans and Foundations Skills)

1. The student will gain an understanding of the physiology of ventilation, including lung compliance, airway resistance, and time constants, and their associated calculations. (F-1, F-2, F-3, F-4, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)
2. The student will gain an understanding of the physiology of the pulmonary and systemic vascular systems, and the determinants of cardiac output. (F-1, F-2, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)
3. The student will gain an understanding of hemodynamic measurements, including the calculation of normally computed values. (F-1, F-2, F-3, F-4, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)
4. The student will gain an understanding of the various methods by which oxygen is carried in the blood, factors responsible for shifts in the oxyhemoglobin curve, and the calculations involved in oxygen transport studies. (F-1, F-2, F-3, F-4, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)
5. The student will gain an understanding of the various methods by which carbon dioxide is carried in the blood, and its effects on acid-base balance. (F-1, F-2, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)
6. The student will gain an understanding of the ventilation-perfusion ratio and the effects respiratory disorders have on it. (F-1, F-2, F-5)
7. The student will gain an understanding of the neuronal control of ventilation. (F-1, F-2, F-5)

8. The student will gain understanding of arterial blood gas interpretation and calculations (F-1, F-2, F-5, F-10, F-11, F-12, F-16, F-17, C-5, C-7, C-8)

## EVALUATION METHODS

1. Four objective unit examinations will be given, followed by a comprehensive final examination.
2. Students must complete the workbook assignments as outlined in the course syllabus prior to the unit exam. A grade of 0% will be entered for each workbook assignment not completed. **Late workbook assignments will not be accepted. Workbook assignments corresponding to assigned reading and unit are due on test day.**
3. An ABG interpretation assignment (TBA)
3. **Make-up exams will not be given.** Students will be allowed to drop their lowest unit exam grade

## ACADEMIC INTEGRITY

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

**Cheating** - Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in the office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of coursework. This applies to quizzes of whatever length, as well as final examinations, to daily reports and to term papers.

**Plagiarism** - Offering the work of another as one's own, without proper acknowledgment, is plagiarism; therefore, any student who fails to give credit for quotations or essentially identical expression of material taken from books, encyclopedias, magazines and other reference works, or from themes, reports or other writings of a fellow student, is guilty of plagiarism.

## SCANS and FOUNDATION SKILLS

This course completes the following Foundation Skills: F-1, F-2, F-3, F-4, F-5, F-10, F-11, F-12, F-16, F-17. This course completes the following SCANS competencies: C-5, C-7, and C-8. Refer also to Course Objectives. SCANS and Foundation Skills attached.

## VERIFICATION OF WORKPLACE COMPETENCIES – HEALTH OCCUPATIONS DIVISION

Successful completion of this course is required for the student to be eligible to sit for the Certification Exam for Entry-Level Respiratory Therapists, and to obtain a Texas License to practice Respiratory Care.

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## SPECIFIC COURSE INFORMATION

### TEXT AND MATERIALS

Students are required to obtain the following:

1. Des Jardins, Terry. Cardiopulmonary Anatomy and Physiology; Essentials for Respiratory Care, 6th Ed., (2013). New York, Delmar Cengage Learning.
2. Des Jardins, Terry. Workbook T/A Cardiopulmonary Anatomy and Physiology; Essentials for Respiratory Care, 6th Ed., (2013). New York, Delmar Cengage Learning.
3. Class Notes

## ATTENDANCE POLICY

Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

*Regular attendance is necessary to successfully meet the course objectives. The student is responsible for all class work covered during absences from class. Students are expected to be in class, on time. A student is tardy if he/she arrives more than 5 minutes after class begins. If a student is tardy to class three times, it will be counted as one absence. It is the student's responsibility to inform the instructor of the reason for an absence and to do so in a timely fashion. A student may be administratively withdrawn from the course if he/she has more than **five** absences from class and the instructor determines the student is unable to successfully meet the course objectives.*

*Students who are tardy are asked to respect their peers and enter the classroom quietly in order not to disrupt the class. Students who are late to a class starting with an examination will not be given additional time to complete the exam.*

## ASSIGNMENT POLICY

1. Students are expected to maintain a reading schedule at home to keep current with classroom discussions.
2. Workbook pages as listed for each unit may be completed prior to the exam for that unit. Students must bring their workbooks to class on the day of the test. **Late workbooks will not be accepted. A grade of zero will recorded and averaged in with all workbook assignments.**
3. Basic ABG interpretation assignments are due prior to TEST 2.

**GRADING POLICY** - Grades in this course will be determined using the following criteria:

<b>Exams</b>	<b>45%</b>
<b>Comprehensive Final</b>	<b>25%</b>
<b>Workbook</b>	<b>15%</b>
<b>ABG assignment</b>	<b>15%</b>

A = 90 - 100

B = 80 - 89

C = 75 - 79

D = 65 - 74

F = 0 - 64

Successful completion of this course requires a final grade average of 75 or better.

## REMEDIATION

**REMEDIATION/TUTORING:** Throughout the program, students will be assessed in the following domains: cognitive (exams), psychomotor, (lab competency check-offs): and clinic competencies, as a means to establish proficiency in designated areas.

The following information provides the student with avenues for remediation in cognitive, psychomotor, and clinical competencies.

**Exam Remediation:** If a student fails an exam that is accounted for in the grading system (non- dropped exams), the student will be required to make an appointment with the Respiratory Care faculty within one week of the exam in order to develop a written plan to gain better understanding of the material covered on the exam. This plan will designate responsibilities of all involved parties and may include but not limited to: review of exam topics, written discussion of topics, and oral discussion of topics.

## COMMUNICATION POLICY

- Electronic communication between instructor and students in this course will utilize the South Plains College “My SPC”, blackboard, and email systems. Instructor will not initiate communication using private email accounts. Students are encouraged to check SPC email and blackboard on a regular basis.
- Blackboard is an e-Education platform designed to enable educational innovations everywhere by connecting people and technology. This educational tool will be used in this course throughout the semester.

## FACEBOOK

- The Respiratory Care Program has a Facebook page at <http://www.facebook.com/SouthPlainsCollegeRespiratoryCare>. In addition to the South Plains College website, this Facebook page will be used to keep students up-to-date on program activities, weather delays, South Plains College announcements, and this will help with program recruitment. “Liking” the South Plains College Respiratory Care Facebook page is not mandatory, nor are personal Facebook accounts, in order to access this page.

## STUDENT CONDUCT

- Students in this class are expected to abide by the standards of student conduct as defined in the SPC Student Guide.

## CAMPUS CARRY

- Students in this class are expected to abide by the standards of student conduct as defined in the SPC Student Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at: [http://www.southplainscollege.edu/human\\_resources/policy\\_procedure/hhc.php](http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php) Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

## CHANGES AND AMENDMENTS TO SYLLABUS

- The program director or the clinical coordinator reserve the right to make reasonable changes to the syllabus at any time during the semester. If this occurs, the students will be notified and furnished a copy of all applicable changes or amendments.

## SPECIAL REQUIREMENTS

- **Cell Phones** – Cell phones are to be turned OFF during scheduled class periods, unless prior approval has been given from the instructor. This includes text messaging. Cell phones are to be used outside the classroom only.

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## COURSE OUTLINE

### UNIT 1: OXYGEN & CARBON DIOXIDE TRANSPORT

Reading Assignment: Chapter 6  
Workbook: Chapter 6  
TEST #1

### UNIT 2: ACID BASE BALANCE & REGULATION

Reading Assignment: Reading Chapter 7  
Workbook: Chapter 7  
Assignment : ABGs – Acid Base, Oxygenation Interpretation  
TEST #2

### UNIT 3: VENTILATION/PERFUSION RELATIONSHIPS

Reading Assignment: Chapter 8  
Workbook: Chapter 8  
TEST #3

### UNIT 4: CONTROL OF VENTILATION

Reading Assignment: Chapter 9  
Workbook: Chapter 9  
TEST #4

### UNIT 5: PULMONARY –SYSTEMIC VASCULAR SYSTEM & BASIC HEMODYNAMIC MEASUREMENTS

Reading Assignment: Chapter 5 pp. 225-247 & Chapter 15  
Workbook: Chapter 15  
Unit 5 material will be assessed on the Final Exam

## COMPREHENSIVE FINAL EXAM

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## ACCOMMODATIONS

### DIVERSITY STATEMENT

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

### PREGNANCY ACCOMMODATIONS STATEMENT

If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations, you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact Chrystal Gilster, Director of Health and Wellness at 806-716-2362 or email , [cgilster@southplainscollege.edu](mailto:cgilster@southplainscollege.edu)

## DISABILITIES STATEMENT

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Coordinator of Special Services. For more information, call or visit the Special Services Office in rooms 809 and 811, Reese Center Building 8, (806) 885-3048 ext. 4654

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## FOUNDATION SKILLS

### **BASIC SKILLS—Reads, Writes, Performs Arithmetic and Mathematical Operations, Listens and Speaks**

- F-1 Reading—locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.
- F-2 Writing—communicates thoughts, ideas, information and messages in writing and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.
- F-3 Arithmetic—performs basic computations; uses basic numerical concepts such as whole numbers, etc.
- F-4 Mathematics—approaches practical problems by choosing appropriately from a variety of mathematical techniques.
- F-5 Listening—receives, attends to, interprets, and responds to verbal messages and other cues.
- F-6 Speaking—organizes ideas and communicates orally.

### **THINKING SKILLS—Thinks Creatively, Makes Decisions, Solves Problems, Visualizes and Knows How to Learn and Reason**

- F-7 Creative Thinking—generates new ideas.
- F-8 Decision-Making—specifies goals and constraints, generates alternatives, considers risks, evaluates and chooses best alternative.
- F-9 Problem Solving—recognizes problems, devises and implements plan of action.
- F-10 Seeing Things in the Mind's Eye—organizes and processes symbols, pictures, graphs, objects, and other information.
- F-11 Knowing How to Learn—uses efficient learning techniques to acquire and apply new knowledge and skills.
- F-12 Reasoning—discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

### **PERSONAL QUALITIES—Displays Responsibility, Self-Esteem, Sociability, Self-Management, Integrity and Honesty**

- F-13 Responsibility—exerts a high level of effort and perseveres towards goal attainment.
- F-14 Self-Esteem—believes in own self-worth and maintains a positive view of self.
- F-15 Sociability—demonstrates understanding, friendliness, adaptability, empathy and politeness in group settings.
- F-16 Self-Management—assesses self accurately, sets personal goals, monitors progress and exhibits self-control.
- F-17 Integrity/Honesty—chooses ethical courses of action.

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## SCANS COMPETENCIES

- C-1 **TIME** - Selects goal - relevant activities, ranks them, allocates time, prepares and follows schedules.
- C-2 **MONEY** - Uses or prepares budgets, makes forecasts, keeps records and makes adjustments to meet objectives.
- C-3 **MATERIALS AND FACILITIES** - Acquires, stores, allocates, and uses materials or space efficiently.
- C-4 **HUMAN RESOURCES** - Assesses skills and distributes work accordingly, evaluates performances and provides feedback.

### **INFORMATION - Acquires and Uses Information**

- C-5 Acquires and evaluates information.
- C-6 Organizes and maintains information.
- C-7 Interprets and communicates information.
- C-8 Uses computers to process information.

**INTERPERSONAL–Works With Others**

C-9 Participates as member of a team and contributes to group effort.

C-10 Teaches others new skills.

C-11 Serves Clients/Customers–works to satisfy customer’s expectations.

C-12 Exercises Leadership–communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.

C-13 Negotiates-works toward agreements involving exchanges of resources; resolves divergent interests.

C-14 Works With Diversity–works well with men and women from diverse backgrounds.

**SYSTEMS–Understands Complex Interrelationships**

C-15 Understands Systems–knows how social, organizational, and technological systems work and operates effectively with them.

C-16 Monitors and Corrects Performance–distinguishes trends, predicts impacts on system operations, diagnoses systems performance and corrects malfunctions.

C-17 Improves or Designs Systems–suggests modifications to existing systems and develops new or alternative systems to improve performance.

**TECHNOLOGY–Works with a Variety of Technologies**

C-18 Selects Technology–chooses procedures, tools, or equipment, including computers and related technologies.

C-19 Applies Technology to Task–understands overall intent and proper procedures for setup and operation of equipment.

C-20 Maintains and Troubleshoots Equipment–prevents, identifies, or solves problems with equipment, including computers and other technologies.

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**COURSE AGREEMENT RSPT 1240-001**

I have received a copy of the course syllabus for RSPT 1240-200. I have reviewed the syllabus, and understand the course format, course competencies, attendance policy, and examination system. I further understand my responsibilities and rights, as explained by the instructor and listed in the syllabus, and agree to all course requirements as stated in the course syllabus.

Student's Name (print)

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Student's Signature

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Date\_\_\_\_\_