

Reese Campus

### Course Syllabus

COURSE: RSPT 2314-200 2021S10 Mechanical Ventilation  
SEMESTER: Summer 2021  
CLASS LOCATION: Didactic On-line (Zoom Meetings until permitted at Reese building 5 Room 521)  
LAB LOCATION: REESE Building 5 Room 521

CLASS TIMES: 10:00 AM – 11:50 AM (Lecture)  
12:00 PM – 1:00 PM (Lab)  
Tuesday- Thursday

INSTRUCTOR: Ron Edwards, BS, RRT

OFFICE: 519

OFFICE HOURS: Monday 9:00 AM – 12:00 AM  
Tuesday 2:00 PM – 4:00 PM  
Wednesday 9:00 AM – 12:00 AM  
Thursday 2:00 PM – 4:00 PM  
Other Times by Appointment

OFFICE PHONE: (806) 716-4625

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FACEBOOK: <http://www.facebook.com/SouthPlainsCollegeRespiratoryCare>

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

## GENERAL COURSE INFORMATION

### COURSE DESCRIPTION

This course includes in-depth coverage and application of therapeutic procedures to achieve adequate, spontaneous, and artificial ventilation with emphasis on ventilator classification, methods, principles, and operational characteristics. Also included are the indications, complications, and physiologic effects/principles of mechanical ventilation, and emphasizes initiation, management, and weaning of ventilator support.

### STUDENT LEARNING OUTCOMES

Students will:

1. Describe procedures for mechanical ventilation.
2. Identify and assemble necessary equipment for mechanical ventilation.
3. State clinical goals for mechanical ventilation.

### COURSE OBJECTIVES

1. The student will discuss diseases and conditions commonly treated with mechanical ventilation. (F-1, F-2, F-5)
2. The student will recognize various artificial airways and discuss airway management techniques. (F-1, F-2, F-3, F-5, C-5, C-7, C-18, C-19, C-20)
3. The student will explain the principles of mechanical ventilation including airway resistance, lung compliance, ventilatory and oxygenation failure. (F-1, F-2, F-3, F-4, F-5, C-5, C-6, C-7, C-8, C-18, C-19)
4. The student will discuss the effects that positive pressure ventilation has on the body. (F-1, F-2, F-3, F-5, C-18, C-19, C-20)
5. The student will classify various mechanical ventilators. (F-1, F-2, F-5, C-18, C-19, C-20)
6. The student will discuss the operating modes of mechanical ventilation. (F-1, F-2, F-5, C-18, C-19)
7. The student will select, assemble, and modify common adult ventilators. (C-3, C-5, C-8, C-18, C-19, C-20)
8. The student will discuss methods used to initiate, monitor, and manage mechanical ventilation. (F-1, F-2, F-3, F-4, F-5, F-8, F-9, F-10, C-5, C-6, C-7, C-8, C-18, C-19, C-20)

9. The student will recognize and analyze basic ventilator waveforms. (F-8, F-9, F-10, F-12, C-5, C-7, C-8, C-20)
10. The student will discuss the process of weaning patients from mechanical ventilation. (F-1, F-2, F-3, F-4, F-5, F-8, F-9, F-10, C-5, C-6, C-7, C-8, C-18, C-19, C-20)
11. The student will discuss the use of negative pressure ventilation. (C-18, C-19, C-20)

## EVALUATION METHODS

Unit examinations, pop quizzes, and lab competencies will be given during the semester, followed by a comprehensive final examination. There will be no make-up examinations. The lowest scored unit exam grade will be dropped and not calculated into the exam percentages.

### Ventilation Lab Competencies

Students will be required to successfully complete the following competencies in lab:

1. Ventilator set-up
2. Ventilator parameter change
3. Ventilator circuit change
4. Routine vent check
5. Ventilator graphic analysis
6. Weaning parameters
7. Weaning
8. Non-invasive vent set-up
9. Non-invasive vent check

All competencies MUST be documented in DataArc by the clinical instructor/preceptor evaluating the student. The student will be evaluated as:

**-Satisfactory (100%)** - ready for clinical application with minimal supervision. Performed procedure accurately, or was able to correct performance without injury to the patient or decreasing effect of therapy being given.

**-Unsatisfactory performance** - not ready for clinical application. Requires remediation under one of the following categories:

- **Minor – Unsatisfactory (75%):** Needs to review fundamental concepts or requires re-evaluation of minor deficiency(s) (ex. forgets to wash hands during the **Follow-up** stage. Must be re-evaluated on this step not the whole procedure). This may be re-attempted on day.
- **Major – Unsatisfactory (50%):** Requires additional lab practice and complete re-evaluation of the procedure
- If the student receives an unsatisfactory rating (either minor or major), the student may attempt the competency on another laboratory day when he/she has reviewed the procedure and feels prepared. If the student does not successfully complete the competency after the 3<sup>rd</sup> try, he/she must schedule a conference with the instructor before attempting the competency again.
- Each competency attempt will be scored (as indicated above). Ex: If a student scores a 75% on the first attempt and then a 100% on second attempt, the score entered into the grade book is 87.5 for that particular competency.
- The student is not considered proficient in a lab competency until a satisfactory rating has been achieved.

## 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-8, F-9, F-10, F-12. This course completes SCANS competencies: C-5, C-6, C-7, C-8, C-18, C-19, C-20. 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

**Textbook and Other Materials.** Students are required to obtain the following:

1. Pilbeam's Mechanical Ventilation, Physiological and Clinical Applications, 6<sup>th</sup> Ed., (Copyright 2016 by Elsevier, Inc.) ISBN: 978-0-323-32009-2
2. Oakes, Dana. Oakes' Ventilator Management: A bedside reference guide (recommended)
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 **three** 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. The exam will be finished when the last on-time student has completed.*

#### **ASSIGNMENT POLICY**

1. Students are expected to maintain a study schedule at home to keep current with classroom discussions, quizzes, assignments, and unit exams.
2. Students must complete laboratory exercises during lab time, individually or in small groups, as assigned. Laboratory exercises and skills practice allows the student to apply the reading and lecture material to actual performance of skills.
3. Students must complete the lab proficiencies listed in the syllabus for each unit. When the student feels he/she has had sufficient lab practice and have completed any assigned lab exercises, he/she may attempt to perform the lab proficiency. When successfully completed, the student may practice the learned skill in the clinical setting under direct supervision. When the student feels sufficiently prepared, he/she may attempt the procedure in an actual patient setting under direct observation of a clinical instructor. If successfully completed, the student may then perform the skill in the clinical setting. If the proficiency is not successfully completed, the student must return to practice and attempt the skill at another time.

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

<b>Pop Quizzes and Assignments</b>	<b>10%</b>
<b>Lab Competency</b>	<b>10%</b>
<b>Unit Exams</b>	<b>60%</b>
<b>Comprehensive Final Exam</b>	<b>20%</b>

**A = 90 – 100**

**B = 80 – 89**

**C = 75 - 79**

**F = 0 – 74**

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

Students that score less than 80% on their course average should seek remedial help from the instructor on record or any program faculty for specific remediation instructions and assistance.

### **COMPUTER USAGE**

As computer technology in the field of health occupations continues to become more popular, computers will be used in this course for several assignments. All students must have access to computers and printers for printed notes. Students will be expected to utilize computers to access assignments and classroom resources. All registered students are supplied with a working email account from South Plains College. In order to take exams, students may be required to use their username and password.

**ALL STUDENTS ARE EXPECTED TO KNOW THEIR SPC STUDENT USERNAME AND PASSWORD.**

### **COMPUTER LAB USAGE**

The computer lab(s) on any campus may be used by students as assigned by an instructor. Printer paper will not be provided for students to print materials but students may seek assistance from faculty or staff to request lab paper from the college if needed. Lack of computer lab paper is not an excuse for not having homework assignments, skills lab sheets, or any other required documents. Students should come prepared for class.

### **COMMUNICATION POLICY**

Electronic communication between instructor and students in this course will utilize the South Plains College “My SPC” and email systems. The instructor will not initiate communication using private email accounts. Students are encouraged to check SPC email on a regular basis each week of class. Students will also have access to assignments, web-links, handouts, and other vital material which will be delivered via the classroom website. Any student having difficulty accessing the classroom website or their email should immediately contact their instructor for direction. The instructor will work with any student to ensure the student has access to a computer on campus and can obtain the needed class content that is located on the course website.

### **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 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**

Rules and regulations relating to the students at South Plains College are made with the view of protecting the best interests of the individual, the general welfare of the entire student body and the educational objectives of the college. As in any segment of society, a college community must be guided by standards that are stringent enough to prevent disorder, yet moderate enough to provide an atmosphere conducive to intellectual and personal development. A high standard of conduct is expected of all students. When a student enrolls at South Plains College, it is assumed that the student accepts the obligations of performance and behavior imposed by the college relevant to its lawful missions, processes and functions. Obedience to the law, respect for properly constituted authority, personal honor, integrity and common sense guide the actions of each member of the college community both in and out of the classroom. Students are subject to federal, state and local laws, as well as South Plains College rules and regulations. A student is not entitled to greater immunities or privileges before the law than those enjoyed by other citizens. Students are subject to such reasonable disciplinary action as the administration of the college may consider appropriate, including

suspension and expulsion in appropriate cases for breach of federal, state or local laws, or college rules and regulations. This principle extends to conduct off-campus which is likely to have adverse effects on the college or on the educational process which identifies the offender as an unfit associate for fellow students. Any student who fails to perform according to expected standards may be asked to withdraw. Rules and regulations regarding student conduct appear in the current 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.

### EMERGENCY MESSAGES

The student should notify his/her family that in case of an emergency during normal class schedule, they should call the Nursing Office at (806)716-2391 or (806)716-2193. Class will not be interrupted unless it is an emergency, so they must identify themselves and say it is an emergency to get immediate action.

### SPECIAL REQUIREMENTS

- Cell Phones** – Cell phones are to be turned OFF or silenced 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. Students are not allowed to have cell phones on their persons during exams.

### 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.

## COURSE OUTLINE

### UNIT 1: PRINCIPLES OF MECHANICAL VENTILATION

Reading Assignment:

Pilbeam:	Chapter 1	Basic Terms & Concepts
	Chapter 2	How Ventilators Work/ Ventilator Classification
	Chapter 3	Breath Delivery

#### TEST #1

### UNIT 2: INITIATING VENTILATION

Reading Assignment:

Pilbeam:	Chapter 4	Establish Ventilator Need
	Chapter 5	Ventilator and Mode Selection
	Chapter 6	Initial Ventilator Settings
	Chapter 7	Final Considerations in Ventilator Setup

**Lab Competencies: ventilator set-up, routine ventilator check, and ventilator parameter change**

#### TEST #2

### UNIT 3: MONITORING IN MECHANICAL VENTILATION

Reading Assignment:

Pilbeam:	Chapter 8	Initial Patient Assessment
	Chapter 9	Ventilator Graphics
	<b>Lab Competencies : vent graphic analysis assignment</b>	
	Chapter 10	Non-invasive Assessment of Respiratory Function

TEST #3

### UNIT 4: THERAPEUTIC INTERVENTIONS

Reading Assignment:

Pilbeam:	Chapter 12	Ventilation Improvement Methods
	Chapter 13	Improving Oxygenation and Management of ARDS
	Chapter 15	Sedatives, Analgesics, and Paralytics

**Lab Competencies: ARDS assignment**

TEST # 4

### UNIT 5: EFFECTS AND COMPLICATIONS OF MECHANICAL VENTILATION

Reading Assignment:

Pilbeam:	Chapter 16	Extrapulmonary Effects of Mechanical Ventilation
	Chapter 17	Effects of Positive Pressure Ventilation on Pulmonary System
	Chapter 18	Basic Troubleshooting and Problem Solving

**Lab Competencies: vent circuit change**

TEST #5

### UNIT 6: WEANING FROM MECHANICAL VENTILATION

Reading Assignment:

Pilbeam:	Chapter 19	Basic Concepts of NIV (NPPV)
	<b>Lab Competencies: non-invasive vent set-up and non-invasive vent check</b>	
	Chapter 20	Weaning and Discontinuation from Mechanical Ventilation

**Lab Competencies: weaning parameters and weaning**

### COMPREHENSIVE FINAL EXAMINATION

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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 Disability 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 Disability Services Office. For more information, call or visit the Disability Services Office at Levelland Student Health & Wellness Center 806-716-2577, Reese Center (also covers ATC) Building 8: 806-716-4675, Plainview Center Main Office: 806-716-4302 or 806-296-9611, or the Health and Wellness main number at 806-716-2529.

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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.



## 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.



**COURSE AGREEMENT RSPT 2314-200 (2021S10) Mechanical Ventilation**

I have received a copy of the course syllabus for RSPT 2314-200. 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)

\_\_\_\_\_

Student's Signature

\_\_\_\_\_

Date \_\_\_\_\_