

**RET 1264C-CRN# 10022**  
**Principles of Mechanical Ventilation**  
**Fall 2016**  
**Syllabus**

**Instructor:** Name: Jamy Chulak M.S. RRT  
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**Location:**

AHS Building Room 226  
Mondays  
9:30-12:30  
(*lunch break*)  
1:30-4:30

**Office Hours:**

Location	DAY	FROM (am/pm)	TO (am/pm)
AHS-235 and AHS-226	Monday	8:00 AM	8:30 AM
AHS-235 and AHS-226	Tuesday	8:00 AM	11:00 AM
AHS-235 and AHS-226	Wednesday	8:00 AM	9:00 AM
AHS-235 and AHS-226	Thursday	8:00 AM	11:00 AM
Virtual/email/phone	Friday	8:00 AM	10:30 AM

**Important Date:**

Term (Start and End Dates)	August 29 <sup>th</sup> to December 18 <sup>th</sup> 2016
Withdrawal for "W" Grade	November 11 <sup>th</sup> 2016
Drop/Refund Deadline (11:59PM)	September 6 <sup>th</sup> , 2016
Classes Do Not Meet	Sept 4 <sup>th</sup> and Nov 22 <sup>nd</sup> 2016
Final Examination	December 11 <sup>th</sup> 2016

**Introduction to the Course:**

Introduces mechanical function of equipment used in continuous and intermittent modes of ventilation for adult patients (some pediatric and neonatal).

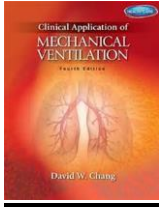
Indications, contraindications and hazards of continuous ventilation with significance given to ventilatory management and monitoring techniques. Accompanying the lectures will be hands-on experience designed to prepare students for actual clinical situations.

**Textbooks:**

*Clinical Application of Mechanical Ventilation*, David W. Chang, 4<sup>th</sup> Edition

ISBN-10: 1111539588

ISBN-13: 9781111539580

**Valencia College Core Competencies**

The Valencia Student Core Competencies (Think, Value, Act and Communicate) are an established component of the College's curriculum development and review process. A detailed overview can be found in the current Valencia catalogue or the Valencia Website: <http://valenciacollege.edu/competencies/>. Developing these core competencies will be enhanced through critical thinking exercises, classroom discussions, and reasoned choices made by acquiring, analyzing, synthesizing, and evaluating knowledge. You will also need to read, listen, write and speak effectively.

**Withdrawal Policy:**

Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals), a student who withdraws from class before the established deadline for a particular term will receive a grade of "W." A student is not permitted to withdraw after the withdrawal deadline. A faculty member MAY withdraw a student up to the beginning of the final exam period for violation of the class attendance policy. A student who is withdrawn by faculty for violation of the class attendance policy will receive a grade of "W." Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of "F." For a complete policy and procedure overview on Valencia Policy 4-07 please go to: <http://valenciacollege.edu/generalcounsel/policydetail.cfm?RecordID=75>.

**Course Disclaimer:**

These course requirements may be changed with notification, as deemed necessary by the instructor due to unforeseen circumstances.

**Overall Course objectives/Outcomes**

1. Differentiate between respiratory and ventilatory failure including elements of acid-base balance.
2. Describe the theory of ventilation including the indications for mechanical support.
3. Describe the lung-thorax relationship as well as differentiating between compliance and nonelastic resistance.
4. Differentiate between the phases and modes of ventilators.
5. Describe the various drive mechanisms as well as techniques or I/E ratio adjustment.
6. Differentiate between inspiratory and expiratory alterations including the physiologic effects.
7. Describe pressure limited ventilators including characteristics of flow sensitive and flow variable ventilators.
8. Describe bellows ventilators as well as characteristics of volume limitation.-Describe the classification, mechanism and operation of Bear ventilators.
9. Differentiate between rotary and linear piston ventilators utilizing examples of each.
10. Describe the effects and complications of patient monitoring including oxygen analyzers, graphics, capnography and pulse oximetry.
11. Describe ventilatory discontinuation including criteria and weaning techniques such as SIMV, PSV and "T" piece.
12. Describe various contemporary modes of ventilation such as inverse ratio ventilation and APRV.
13. Differentiate between high frequency positive pressure ventilation, high frequency jet ventilation and high frequency oscillation.
14. Determine the appropriate initial ventilator settings given specific patient situations.
15. Determine the appropriate ventilator changes necessary to improve oxygenation and ventilation.
16. Demonstrate knowledge in the application of various manual resuscitator bags, including valve characteristics and FIO<sub>2</sub> capabilities.

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**Overall Course objectives/Outcomes:**

The student will be able to evaluate and treat patients with cardiopulmonary illness. This includes the identification and treatment of obstructive vs. restrictive diseases, cardiopulmonary dysfunction, hemo-dynamics within chest medicine.

**Students with Disabilities:**

Students with disabilities who qualify for academic accommodations must provide a letter from the Office for Students with Disabilities and discuss specific needs with the professor, preferably during the first two weeks of class. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities. (West Campus SSB room 102, 407-582-1523)

**Mobile Devices:**

Refrain from bringing mobile devices to class. All mobile devices must be turned off during class to ensure an optimal learning environment. No use of these devices will be tolerated during class. The use of such devices during class will result in a reduction in class participation points.

**Academic Honesty:**

Students are expected to be in complete compliance with Valencia College policy on academic honesty. This policy is written in the Valencia College Catalog and Student Handbook. Academic honesty, in terms of documentation, means that you have not stolen another's ideas and misrepresented them as your own; you have given credit where credit is due. As in most areas of life, let common sense and common courtesy rule and help keep you from inadvertently committing an act of plagiarism.

**Atlas:**

Students will need to check their Atlas account daily for email, helpful hints and updated information. <https://atlas.valenciacollege.edu/>

**Blackboard:**

This course is web-enhanced. The student will be required to complete assignments, quizzes and participate in discussion topics online. Any problems or questions must be communicated to the instructor in a timely manner. <https://online.valenciacollege.edu/>

**Grading Considerations:**

- All late assignments will result in an automatic grade reduction of 10%.
- No assignment or test will be accepted after one week past the due date.
- Quizzes and online discussions may NOT be made up beyond the due date.

## **Grade Breakdown:**

### **5%- Attendance**

Attendance is essential to success in this course. Absences or failure to do the assigned reading will result in difficulty mastering the material. It will be assumed by the instructor that all assigned material has been read prior to scheduled class time. Excessive absences may result in withdrawal from the course and is defined in the student handbook as greater than two absences within a semester.

### **5%- Participation**

Participation is essential to learning. A direct correlation to your learning outcome(s) rely upon active engagement in and out of the classroom.

*Participation Rubric* (available on blackboard)

### **5%- Discussion Board- *Discussion Rubric*** (available on blackboard)

### **5%- Quiz: (will be averaged towards final grade)**

Quizzes may or may not be announced. Quizzes will be given at the beginning of class and online. The content of each may include assigned reading material and/or previously covered material. Each quiz will be timed.

### **10%- Writing Assignments**

In class writing assignments will be utilized to improve critical thinking skills and communication on difficult topics with mechanical ventilation.

### **60%- Examinations: (will be averaged towards final grade)**

Formats may be multiple choice, short answer or essay. Content will include assigned reading material, handouts and/or lecture material.

Calculators may be used. No scientific calculators or those capable of storing formulas can be used

### **10%- Final Examination: (cumulative)**

#### **Grading Scale**

A= 90-100

B= 83-89

C= 75-82

D= 70-74

F= Less than 70%

Note: A minimum grade of "C" is required to be considered for participation in RET 1874L Clinical Practice I.

## Course Itinerary

<b>Week 1</b>	<b><i>Principles of Mechanical Ventilation</i></b> - Chang: Chapter 1
<b>Week 2</b>	<b><i>Effects and Complications of Positive Pressure Ventilation</i></b> - Chang: Chapter 2
<b>Week 3</b>	<b><i>Classification of Mechanical Ventilation</i></b> - Chang: Chapter 3
<b>Week 4</b>	<b><i>Operating Modes of Mechanical Ventilation</i></b> - Chang: Chapter 4
<b>Week 5</b>	<b><i>Operating Modes of Mechanical Ventilation</i></b> - Chang: Chapter 4
<b>Week 6</b>	<b><i>Specialty Airways; Airway Management</i></b> - Chang: Chapters 5 & 6
<b>Week 7</b>	<b><i>Non-Invasive Positive Pressure Ventilation</i></b> - Chang: Chapter 7
<b>Week 8</b>	<b><i>Procedures Related to Mechanical Ventilation</i></b> - Chang: Chapter 13
<b>Week 9</b>	<b><i>Initiation of Mechanical Ventilation</i></b> - Chang: Chapter 8
<b>Week 10</b>	<b><i>Monitoring in Mechanical Ventilation</i></b> - Chang: Chapter 9
<b>Week 11</b>	<b><i>Ventilator Waveform</i></b> - Chang: Chapter 11
<b>Week 12</b>	<b><i>Ventilator Waveform</i></b> - Chang: Chapter 11
<b>Week 13</b>	<b><i>Management of Mechanical Ventilation</i></b> - Chang: Chapter 12
<b>Week 14</b>	<b><i>Critical Care Issues</i></b> - Chang: Chapter 14
<b>Week 15</b>	<b><i>Weaning from Mechanical Ventilation</i></b> - Chang: Chapters
<b>Week 16</b>	<b>FINAL EXAMINATION</b>