



STARK STATE COLLEGE

GENERAL SYLLABUS

Course Information

Course Name: Medical Gas Administration
Course Number: RCT122

Required Materials

Textbook(s): Stoller, J. K., Heuer, A. J., Vines, D. L., Chatburn, R. L., & Mireles-Cabodevila, E. (2025). *Egan's fundamentals of respiratory care* (13th ed.). Elsevier.

Des Jardins, T., & Burton, G. G. (2024). *Clinical manifestations and assessment of respiratory disease* (9th ed.). Elsevier.

Required Readings: See weekly calendar below.

Additional Materials: Course/Lab materials which can be purchased in the college bookstore.

Course Outline/Calendar

The date of coverage and order of coverage may be modified based on the faculty member and events beyond the control of faculty members that interfere with class times and teaching.

Semester Week/Unit	Topic/Chapter (Review PPT and read assigned textbook chapter(s))	Scheduled Events
Week 1 Unit 1	Read: <input type="checkbox"/> Chapter 41 Egan's (Storage and Delivery of Medical Gases) Review: <input type="checkbox"/> Week 1 PowerPoint <input type="checkbox"/> Syllabus	Lecture plan: <ul style="list-style-type: none"> Review RCT122 Syllabus Review Brightspace and how to access PPTs and materials Review main topics for week 1 PPT
Week 2 Unit 1	Review: <input type="checkbox"/> Week 2 PowerPoint	Lecture plan: <ul style="list-style-type: none"> Review main topics from week 1 and week 2 pts In class activities: <ul style="list-style-type: none"> Tank duration calculations examples Heliox flowmeter calculations examples

Week 3 Unit 1	Read: <input type="checkbox"/> Chapter 6 Sill's (Oxygen and Medical Gas Therapy) Pgs 193 - 199 Review: <input type="checkbox"/> Week 3 PowerPoint	Lecture plan: <ul style="list-style-type: none"> • Review main topics from Week 2 and 3 PPT • Review for Test - Unit 1
Week 4 Unit 2	Read: <input type="checkbox"/> Chapter 42 Egan's (Medical Gas Therapy) Review: <input type="checkbox"/> Week 4 PowerPoint	Online work- see LMS for details.
Week 5 Unit 2	Read: <input type="checkbox"/> Chapter 6 Sill's (Oxygen and Medical Gas Therapy) Pgs. 200-219 Review: <input type="checkbox"/> Week 5 PowerPoint	Lecture plan: <ul style="list-style-type: none"> • Review Week 4 & 5 PPTs • Quiz Review
Week 6 Unit 2	Read: <input type="checkbox"/> Course Materials pgs. 4-5 Review: <input type="checkbox"/> Week 6 PowerPoint	Lecture Plan: <ul style="list-style-type: none"> • Review main topics from week 6 PPT In class activities: <ul style="list-style-type: none"> • Formula examples <ul style="list-style-type: none"> ○ Air/O₂ ratio, Total Flow, inspiratory needs
Week 7 Unit 2	Read: <input type="checkbox"/> Chapter 42 Egan's (Medical Gas Therapy)- review pg 921 (Figure 42.20) Review: <input type="checkbox"/> Week 7 PowerPoint	Online work- see LMS for details.
Week 8 Unit 3	Read: <input type="checkbox"/> Chapter 39 Egan's (Humidity and Bland Aerosol Therapy) <input type="checkbox"/> Chapter 6 Egan's (Physical Principles of Respiratory Care) Pgs. 93 – 96 only Review: <input type="checkbox"/> Week 8 PowerPoint	Lecture plan: <ul style="list-style-type: none"> • Review main topics from week 7 & 8 PPTs • Test # 2 review (Unit 2) In class activities: <ul style="list-style-type: none"> • Formula Examples <ul style="list-style-type: none"> ○ FiO₂ when mixing 2 gases ○ Desired FiO₂ ○ Humidity calculations
Week 9 Unit 3	Read: <input type="checkbox"/> Chapter 39 Egan's (Humidity and Bland Aerosol Therapy) <input type="checkbox"/> Chapter 8 Sill's (Humidity and Aerosol Therapy) Pgs. 234 – 243 Review: <input type="checkbox"/> Week 9 PowerPoint	Online work- see LMS for details.
Week 10 Unit 3	Read: <input type="checkbox"/> Chapter 8 Sill's (Humidity and Aerosol Therapy) Pgs. 243 – 245 Review: <input type="checkbox"/> Week 10 PowerPoint	Online work- see LMS for details.

Week 11 Unit 3	Read: <ul style="list-style-type: none"> <input type="checkbox"/> Week 11 PowerPoint 	Lecture plan: <ul style="list-style-type: none"> • Review main topics from Week 9, 10, & 11 PPTs • Test #3 review In class activities: <ul style="list-style-type: none"> • Formula examples <ul style="list-style-type: none"> ○ $V1XC1 + V2xC2 = V3xC3$ ○ O2 bleed in formula ○ Review Aair/O2 ratio, total flow, inspiratory flow need, etc. ○ Review posted practice problems
Week 12 Unit 4	Read: <ul style="list-style-type: none"> <input type="checkbox"/> Chapter 42 Egan’s (Medical Gas Therapy) pgs. 900 – 904 <input type="checkbox"/> Chapter 15 Egan’s (Regulation of Breathing) <input type="checkbox"/> Chapter 19 Egan’s (Analysis and Monitoring of Gas Exchange) pgs. 362 -363 Review: <ul style="list-style-type: none"> <input type="checkbox"/> Week 12 PowerPoint 	Online work- see LMS for details.
Week 13 Unit 4	Read: <ul style="list-style-type: none"> <input type="checkbox"/> Chapter 6 Sill’s review (Oxygen and Medical Gas Therapy) pgs 200 – 204 <input type="checkbox"/> Chapter 57 Egan’s (Respiratory Care in Alternative Settings) pgs. 1294 – 1298 Review: <ul style="list-style-type: none"> <input type="checkbox"/> Week 13 PowerPoint 	Online work- see LMS for details.
Week 14 Unit 4	Read: <ul style="list-style-type: none"> • Chapter 3 Sill’s (Blood Gas Sampling, Analysis, Monitoring and Interpretation) Pgs. 92 - 95 • Chapter 19 Egan’s (Analysis and Monitoring of Gas Exchange) pgs. 375 – 381 • Course Materials pgs.16 -17 Review: <ul style="list-style-type: none"> <input type="checkbox"/> Week 14 PowerPoint 	Lecture plan: <ul style="list-style-type: none"> • Review main topics from Week 12, 13, 14 PPTs • Test #4 Review In class activities: <ul style="list-style-type: none"> • Formula Examples: <ul style="list-style-type: none"> • Liquid O2 calculations
Week 15 Unit 4		In class activities: <p>***Students present Home O2 PPTs to class***</p> <ul style="list-style-type: none"> • Review for Final
Week 16		Final Exam (Comprehensive)