



North Central State College
MASTER SYLLABUS
2019-2020

- A. Academic Division: Health Sciences
- B. Discipline: Respiratory Care
- C. Course Number and Title: RESP 2410 Respiratory Care Equipment/Procedures IV
- D. Course Coordinator: Tricia Winters, BBA, RRT, RCP
Assistant Dean: Melinda Roepke, MSN, RN

Instructor Information:

- Name: [Click here to enter text.](#)
- Office Location: [Click here to enter text.](#)
- Office Hours: [Click here to enter text.](#)
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- E. Credit Hours: 3
Lecture: 2 hours
Laboratory: 3 hours
- F. Prerequisites: RESP2310, RESP2390
Co-requisite(s): RESP2450, RESP2470, RESP2490
- G. Syllabus Effective Date: Fall, 2019
- H. Textbook(s) Title:

Manual of Pulmonary Function Testing

- Author: Gregg L. Ruppel
- Copyright Year: 2009
- Edition:
- ISBN #: 9780323052122

Egan's Fundamentals of Respiratory Care

- Authors: Kacmarek, Stoller, and Heuer
- Copyright Year: 2012
- Edition:
- ISBN #: 9780323082037

- I. Workbook(s) and/or Lab Manual: None
- J. Course Description: In this course, students will learn about advanced pulmonary function testing techniques and equipment, electrocardiograms, breathing exercises, pulmonary and cardiac exercise testing, bronchoscopy, polysomnography, indirect calorimetry, pulmonary rehabilitation, and home care.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	Report Paper on Pulmonary Rehabilitation Communication Written VALUE Rubric Week 12
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	Class presentations on Pulmonary Rehabilitation and Home Care, completed week 10 & 12 Information – Literacy VALUE Rubric
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Interpret the results of the following: <ol style="list-style-type: none"> a. Cardiology Testing: Electrocardiography, Holter Monitoring, Stress Testing b. Pulmonary Testing: Six Minute Walk Test, Metabolic Assessment, Stress Testing, Adult Sleep Studies c. Pulmonary Function Testing: Spirometry, Methacholine Challenge, Nitrogen Washout/Helium Dilution, Diffusion Study, Plethysmography, Pulmonary Function Test Quality Assurance 	Procedure Check-offs weeks 2, 4, 6, & 14
2. Act as an Assistant to the Physician Performing Special Procedure including: <ol style="list-style-type: none"> a. Pulmonary Testing: Bronchoscopy Assisting, Metabolic Assessment, Stress Testing, Holter Monitoring b. Endotracheal Tube/Tracheostomy Care: Securing Artificial Airway, Tracheostomy Care, Cuff Management, Heat/Moisture Exchanger, Intubation, Extubation c. Cardiology Testing: Holter monitoring, Cardiac Stress Testing d. 	Examination Week 8 lab check-off weeks 2, 4, 6, 8, 10, 12, 14, 16
3. Prescribe pulmonary rehabilitation and home care explain planned therapy and goals to patient in understandable terms to achieve optimal therapeutic outcome. Explain and assess patient and family need for disease management and smoking cessation. Summarize the Medicare laws pertaining to Home Care	Project portfolio, Rubric week 14 Examination week 8

Outcomes	Assessments – How it is met & When it is met
4. Perform procedures including: <ol style="list-style-type: none"> a. Cardiology Testing: Electrocardiography, Holter Monitoring, Cardia Stress Testing b. Endotracheal/Tracheostomy Care: Tracheostomy Care, Tracheal Suctioning c. Pulmonary Function Testing: Spirometry, Methacholine Challenge, Nitrogen Washout/Helium Dilution, Diffusion Study, Plethysmography, Pulmonary Function Test Quality Assurance 	Laboratory Check-offs weeks 2, 4, 12 Examination week 8

M. Topical Timeline (Subject to Change):

1. Basic 12 lead EKG Techniques and recognition Lecture and lab performance
 - a. ECG measurements
 - b. ECG Electrodes/Leads
 - c. ECG Instrumentation
 - d. ECG Interpretation
 - e. Rhythms
 - f. ECG Arrhythmias
 - g. Irregular rhythms
 - h. Fast rhythms
 - i. Paroxysmal tachycardia
 - j. Flutter
 - k. Fibrillation
 - l. Early and late Beats
 - m. Heart Blocks
 - n. Miscellaneous Rhythms
 - o. Axis Deviation
 - p. Hypertrophy
 - q. Myocardial Infarction:
 - 1) Anterior
 - 2) Posterior
 - 3) Lateral
 - 4) Inferior
2. Bronchoscopy:
 - a. equipment
 - b. indications, contraindication, risks, precautions
 - c. Respiratory Therapists role: pre, during and post procedure
 - d. Types of Bronchoscopy procedures:
 - 1) Bronchial alveolar lavage
 - 2) Endobronchial biopsy
 - 3) Transbronchial biopsy
 - 4) Transbronchial needle aspiration biopsy
 - 5) Cytology brush
 - 6) Cryotherapy
 - 7) Argon therapy
 - 8) Stent –placement
 - e. View BAL videos
3. Polysomnography
 - a. equipment
 - b. indications, OSA verse CSA
 - c. definitions and terms pertaining to the field
 - d. interpreting the tracing
 - e. treatment of OSA

4. Home Care
 - a. AARC Clinical Practice Guideline
 - b. Reimbursement
 - c. Oxygen
 - d. CPAP
 - e. Mechanical ventilation
 - f. Tracheostomy care
5. Pulmonary rehabilitation
 - a. program design
 - b. program implementation
 - c. content and methods for teaching nutrition
 - d. smoking cessation
 - e. muscle training/breathing exercises
 - f. control and relaxation
 - g. sexuality
6. Cardiac and Pulmonary Stress Testing
 - a. Indications, contraindications, hazards, precautions, risks
 - b. Types of cardiac Stress tests:
 - 1) Bruce protocol
 - 2) Adenoscan
 - 3) MUGA
 - 4) Dobutamine
 - 5) Persantine
 - 6) Regadenoson (Lexiscan)
 - c. Interpretation of Normal results
 - d. Interpretation of abnormal results
 - e. Pulmonary stress test
 - 1) indirect calorimetry monitoring
 - 2) CO₂ uptake
 - 3) O₂ Max
7. Pulmonary Functions:
 - a. Lung Volumes and Capacities, TLC, VC, IRV, ERV, IC, FRC, Vt, RV
 - b. Flowrate, PEFr, FEF 25-75, FEV1, FEV1/FVC
 - c. Diffusion studies, DLCO single breath
 - d. MVV, Before and After Broncho-dilation
 - e. Bronchopulmonary provocation, methacholine challenge
 - f. Interpretation of results
 - g. GOLD Standard
 - h. Tracings, Flow Volume Loop and spirogram tracing
 - i. Calculating flows and volumes from spirogram tracings and flow volume loops

N. Course Assignments:

1. Lecture, discussion
2. Laboratory exercises
3. Projects and presentations
4. Demonstrations
5. Field trips to hospital labs
6. Worksheet assignments

O. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93-100	A	4.00	Superior
90-92	A-	3.67	Superior

87-89	B+	3.33	Above Average
83-86	B	3.00	Above Average
80-82	B-	2.67	Above Average
77-79	C+	2.33	Average
73-76	C	2.00	Average
70-72	C-	1.67	Below Average
67-69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

Important information regarding College Procedures and Policies can be found on the [syllabus supplement](#) located at <https://sharept.ncstatecollege.edu/committees/1/curriculum/SiteAssets/SitePages/Home/SYLLABUS%20SUPPLEMENT.pdf>

The information can also be found Choose an item.