Course Description:

This course provides an introduction to emerging and specialty practice in which the Respiratory Therapist may find application and/or employment. The depth of instruction will provide the indications, expected outcomes, hazards and methods for hyperbaric oxygen (HBO), extracorporeal membrane oxygenation (EMCO), nitric oxide (NO), sleep studies, nutritional assessment, metabolic monitoring, exercise/stress testing, and electroencephalograms.

Text, References and Supplies:


Student Learning Outcomes:

Upon successful completion of the course the student will:

1. List & describe indications, expected outcomes and associated hazards for HBO
2. Relate monoplace HBO to multiplace HBO
3. Describe indications for ECMO
4. List inclusion criteria for ECMO
5. List exclusion criteria for ECMO
6. List expected outcomes for ECMO
7. List hazards associated with ECMO
8. Discuss methods for providing ECMO
9. Identify the components of the ECMO circuit
10. Relate veno-venous and veno-arterial ECMO
11. Describe indications for, list expected outcomes and associated hazards of Nitric Oxide (NO)
12. Describe how NO is administered
13. Identify the components of the NO circuit
14. Describe indications, list expected outcomes and associated hazards for sleep studies
15. Discuss the method for performing a sleep study
16. Identify the parameters monitored during a sleep study and discuss how a sleep study is scored
17. Describe indications, expected outcomes and associated hazards of nutritional assessment
18. Discuss methods for nutritional assessment
19. Describe indications, list expected outcomes and hazards associated with metabolic monitoring
20. Discuss direct and indirect calorimetry for metabolic monitoring
21. Describe indications, expected outcomes and hazards associated with exercise/stress testing
22. Discuss steady state exercise/stress testing
23. Discuss progressive multistage exercise/stress testing
24. Describe indications, expected outcomes and hazards associated with electroencephalograms
25. Discuss how an electroencephalogram is obtained
26. Review material presented on self-assessment exams

Student Contributions, Responsibilities and Class Policies:

Each student will spend at least 6 hours per week preparing for class. Attendance is critical in this class. All clinical performance and behavior will be considered academic.

Evaluation of Students:

A minimum of four (4) tests will be given including a comprehensive final (unless otherwise designated by the instructor). The final exam will carry the same weight as other exams (not quizzes). Weekly quizzes will be averaged and will equal one exam. Test questions will come from lecture, reading assignments and homework assignments. Most tests will be objective in nature.

1. Tests (minimum of four)
   A. Term project required  80%
   B. If term project not required  90%
2. Attendance, participation and attitude  10%
   Term project or paper if required  10%
   Total  100%

Course Schedule:

This class meets for two (2) lecture hours each week, Wednesdays 10:00 am to 12:00 am.

Americans with Disabilities Act (ADA):

Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact the Shep Grinnan as soon as possible. Mr. Grinnan’s office is located in the Scharbauer Student Center Building. These conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations/documentation.

Division Information: Health Sciences

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