HAN 483: Cardiopulmonary Physiology for Anesthesia Technology (3 credits)
Thursdays: 12:30 pm – 3:30 pm, Classroom 158, Level 2

Description:
Familiarizes students with the anatomical structures and physiological mechanisms and functions of the cardiopulmonary system. Reviews mathematical formulas and calculations used in clinical applications of physiologic concepts.

Goal:
To provide students with the knowledge of cardiopulmonary physiology required of an anesthesia technologist, thus enabling them to function as part of the anesthesia care team.

Behavioral Objectives: Upon completion of this course, students will be able to:
1. Categorize respiratory system structures and relate those structures to function.
2. Categorize cardiovascular system structures and relate those structures to function.
3. Explain ventilation/oxygenation and the mechanisms by which they occur.
4. Differentiate between airway resistance, lung compliance and elastic recoil.
5. Illustrate the process of diffusion as it relates to respiration and gas exchange.
6. Diagram the physical and mechanical forces involved in the breathing process.
7. Compare blood flow and perfusion in gas exchange, the cardiac cycle and cardiac output.
8. Summarize the electrophysiological function of the cardiac conduction system.
9. Illustrate how flow, pressure and resistance in blood vessels affect body hemodynamics.
10. Describe the relationship between ventilation and perfusion and the effects of matching ventilation and perfusion on the metabolic function of the body.
11. Illustrate how blood gases are transported from the lungs to the tissues and from the tissues back to the lungs.
12. Distinguish between cardiac rhythms on an EKG strip.
13. Demonstrate the ability to start an intravenous line and draw an arterial blood gas (ABG).
14. Describe how the heart and lungs adapt to changes in the environment, including aging and exercise.
15. Describe the factors involved in central and peripheral control of ventilation and pulmonary reflex mechanism.

Required Text:

Teaching Strategies: Lecture
Group discussions
Hands on demonstrations
Clinical case scenarios

Evaluation:
Participation 10%
Midterm Examination 40%
Final Examination 50%
Americans with Disabilities Act
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site. http://www.ehs.sunysb.edu/fire/disabilities/asp

Academic Integrity
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty, as per the SHTM Academic Policies and Procedures.

Critical Incident Management
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty in the HSC Schools and School of Medicine are required to follow their school specific procedures.

Blackboard
Blackboard is a web-based course management system. Students will find all course documents and announcements on Blackboard. All currently registered students have blackboard user accounts. You will see this course listed when you log into Blackboard. Visit the website to access the class (your classes using blackboard will be listed). You will log in using your Net ID and your Password/your Stonybrook ID number. You should have received instructions at registration as to how to choose and set your Net ID, as this is identification you use to access Solar System as well. You are required to check Blackboard each week. While logged into Blackboard, students must check their personal information to ensure that the email address is current.

Course Outline:
Session 1  Development of the Respiratory System
Session 2  Innervation of the Lung
            Defense of the Lung
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