

Comprehensive Cardiology

Course outline

Week 1: Anatomy of the Heart- Gross anatomy, vasculature

Review of the function of the heart along with the gross anatomy, focusing on the flow of blood through the heart, the chambers and valves of the heart, and surrounding structures that play a part in the heart's overall function.

Suggested Readings:

"How your Heart works": <http://www.heartandstroke.ca/heart/what-is-heart-disease/how-a-healthy-heart-works>

Medical Surgical Nursing in Canada: 2nd edition. Chapter 33- Nursing Assessment: Cardiovascular System (PDF to be provided by instructor)

*Do not focus on the nursing assessment techniques

Week 2: Anatomy of the Heart- Intro to electrophysiology

Examination of the electrical journey through the heart, cardiac conduction on a cellular level, and ECG interpretation

Suggested Readings/ Activities:

<https://www.practicalclinicalskills.com/ecg-interpretation>

<https://opentextbc.ca/anatomyandphysiology/chapter/19-2-cardiac-muscle-and-electrical-activity/>

Week 3: Cardiac Conditions and Cardiac Pharmacology: Part 1

An in depth look at common heart conditions: epidemiological data, signs and symptoms, their diagnostic tests, and treatment and prognosis.

Suggested Readings:

The Ottawa Heart Institute's page on Coronary Artery Disease: <https://www.ottawaheart.ca/heart-condition/coronary-artery-disease-atherosclerosis>

The Ottawa Heart Institute's page on Congestive Heart Failure: <https://www.ottawaheart.ca/heart-condition/heart-failure>

Resources that the lecture draws upon-

Medical Surgical Nursing in Canada: 2nd edition. Chapter 34- Nursing Management: Hypertension (PDF to be provided by instructor)

Medical Surgical Nursing in Canada: 2nd edition. Chapter 35- Nursing Management: Coronary Artery Disease and Acute Coronary Syndrome (PDF to be provided by instructor)

Medical Surgical Nursing in Canada: 2nd edition. Chapter 36- Nursing Management: Heart Failure (PDF to be provided by instructor)

Additional Readings of interest **students do not need to have completed these readings before class. They are simply here for an in depth look at the concepts covered in class.*

Russo, J., & Le, M. M. (2016). Time to Treatment: Focus on Transfer in ST-Elevation Myocardial Infarction. *Interventional cardiology clinics*, 5(4), 427-437.

"A Systematic Approach to Cardiac Pharmacology":

https://watermark.silverchair.com/010008.pdf?token=AQECAHi208BE49Ooan9kKhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAZ4wggGaBqkqhkiG9w0BBWagggGLMIIBhwIBADCCAYAGCSqGSIb3DQEHATAeBgIghkgBZQMEAS4wEQQMB4Jvfhhay_TDd5IjAgEQgIIBUd7vvdKJYgsEmNXOvENyN76mjGssrrhCDdeMXBG2_c5DXs7-vYTDWvNxHXtvtmmYiECpbpu4pW4zhwQQVAXuhsf9By5DWWuJH-X-XH1IF_uuJsOwKSSONJI5DOvuXzG9j0UgwQitPwtjdEIEeLWQKILEfWNff1jBgRs6LFw4zNy5g3nVAPZ1njbZriDCbYapXKSq_cAOf0dIqE10brAVRYmp-dYkkUeQY6KUtLNg7odUiib0SU59aIkaTEnhSFm3zX4BfmAoPi3ZwhBmF07XD6oUbQBh4uRdOX2AXopgbnXt_EYAKqgjOpg8AUHIFtdvnhInEposp1c7ofRiX8sTHw1tM_oJDvCy8Vg7CuLWua3KaCz-LHG9DbMpy0GXKBc9LoGUDFqRV4muDmKyViZLHPW4oiKqgwAQs45KauEggAJrdCl8K8E9-gl1DFK-03lhjY

Chapter 8: Cardiovascular Pharmacology:

https://www.mcgill.ca/anesthesia/files/anesthesia/wk_5a_kaplan_08_cv_pharm1.pdf

Week 4: Cardiac Conditions and Cardiac Pharmacology: Part 2

A continuation of adult cardiac pathology, focusing on conduction and valvular disorders.

Suggested Readings:

The University of Ottawa Heart Institute patient guide for Electrophysiology Studies and Complex Ablation:

<https://www.ottawaheart.ca/document/electrophysiology-studies-and-standard-ablation>

Desjardins, B. (2016). Imaging for cardiac electrophysiology. *SA Journal of Radiology*, 20(2), 1-8.

Resources that the lecture draws upon-

Medical Surgical Nursing in Canada: 2nd edition. Chapter 37- Nursing Management: Dysrhythmias (PDF to be provided by instructor)

Medical Surgical Nursing in Canada: 2nd edition. Chapter 38- Nursing Management: Inflammatory and Structural Heart Disorders (PDF to be provided by instructor)

Week 5: Pediatric and Congenital Cardiology

The cardiac conditions that are seen at birth are very different than those that are seen in adulthood. This lesson will focus on how the formation of the heart in utero can lead to a variety of unique and devastating disorders.

Suggested readings:

Heart Problems: <https://www.aboutkidshealth.ca/Article?contentid=372&language=English>

Heart related illness in young athletes: <https://www.aboutkidshealth.ca/Article?contentid=1915&language=English>

Tassabehji, M., & Urban, Z. (2006). Congenital Heart Disease. In *Congenital Heart Disease* (pp. 129-156). Humana Press.

Resources that the lecture draws upon-

Wong's essentials of pediatric nursing: 9th edition- Chapter 34: The child with Cardiac Dysfunction

Illustrated Guide to Congenital Heart Disease and Repair (3rd Edition), Allen D. Everett, D. Scott Lim.

Week 6: Risk factors for cardiac conditions and a public health perspective on cardiac disease

The final lesson will review modifiable and non-modifiable risk factors in cardiac conditions and what other social determinants of health may influence a person's recovery from heart disease.

Suggested Readings:

Wilson, P. W., D'Agostino, R. B., Levy, D., Belanger, A. M., Silbershatz, H., & Kannel, W. B. (1998). Prediction of coronary heart disease using risk factor categories. *Circulation*, 97(18), 1837-1847.

Ghosh-Swaby, O. R., Tan, M., Bagai, A., Yan, A. T., Goodman, S. G., Mehta, S. R., ... & Le May, M. R. (2018). Marital status and outcomes after myocardial infarction: Observations from the Canadian Observational Antiplatelet Study (COAPT). *Clinical cardiology*, 41(3), 285-292.

Prevention and Wellness: <https://www.ottawaheart.ca/patients-visitors/prevention-wellness>

Recommended readings for continued learning:

Bonow, R. O., Mann, D. L., Zipes, D. P., & Libby, P. (2011). *Braunwald's Heart Disease E-Book: A Textbook of Cardiovascular Medicine*. Elsevier Health Sciences.

*As this course is designed to reflect current practices and trends in cardiology, students may be provided articles or additional resources that have been released for reading closer to the lecture if novel relevant information has been published

***I taught this series last year in 5 three hour sessions- I will restructure the lessons so that there is the same content, just spread over 6 weeks.