

# CARDIORESPIRATORY SCIENCE (CRSS)

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## **CRSS 453 Principles in Cardiorespiratory Science I Units: 3.00**

An advanced organ systems approach to the physiological principles underlying cardiac function and oxygen delivery using lectures, seminars, and selected readings. Topics include mechanics and regulation of heart function as well as perturbations in cardiac function. Oxygen delivery and utilization will be examined at the levels of the lung, blood, and tissue. The responses to alterations in oxygen demand and/or supply will also be addressed. Obstructive sleep apnea will be used as a model of a pathological cardiorespiratory system interactions.

NOTE Priority given to students in the CRSS Sub-Plan.

**Requirements:** Prerequisite Minimum 4th year (Level 4) standing, registration in a LISC/BHSc Major or SSP, a GPA of 2.5, and one of [(PHGY 215 and PHGY 216); PHGY 214/6.0; PHGY 212/6.0].

**Offering Faculty:** Faculty of Health Sciences

### **Course Learning Outcomes:**

1. Gain advanced understanding of cardiorespiratory systems by scrutinizing diseased states and major discoveries.
2. Build skills in presentation of complex topics and scientific writing.

## **CRSS 454 Cardiovascular Sciences Units: 3.00**

A study of the physiology, pharmacology and anatomy of the cardiovascular system. Topics include integrative mechanisms of control and pharmacotherapy involved in short-term and long-term control of the circulation in health and disease. NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

**Learning Hours:** 138 (18 Lecture, 10 Seminar, 10 Group Learning, 100 Private Study)

**Requirements:** Minimum 4th year (Level 4) standing and (registration in a LISC or BCHM MAJ or SSP Plan or BHSc program) and a GPA of 2.50. Exclusion LISC 454.

**Course Equivalencies:** CRSS454; LISC454

**Offering Faculty:** Faculty of Health Sciences

### **Course Learning Outcomes:**

1. Critically evaluate a scientific study to present the key findings and how they apply to the mechanisms of short term and long term control of the circulation.
2. Describe the time course of changes in the components that make up the baroreceptor reflex as a consequence of short term changes in blood pressure.
3. Explain the mechanistic basis and the time-course of alterations within the cardiovascular system (e.g. BP, heart rate, etc.) produced during and after a therapeutic intervention.
4. Identify a gap in knowledge regarding a lifestyle intervention that could potentially impact on blood pressure chronically in order to design a novel study to test a hypothesis.

## **CRSS 456 Molecular and Cellular Basis of Cardiovascular Disease Units: 3.00**

An intensive course surveying the molecular and cellular mechanisms underlying the pathophysiology of the major cardiovascular diseases, and the current and emerging tools used in their diagnosis and treatment. Alterations in signalling, metabolism, and structure and function will be discussed to present an integrative view of how cardiovascular diseases develop and progress.

NOTE Priority given to students in the CRSS Sub-Plan.

**Requirements:** Prerequisite (Level 4 and registration in a LISC Specialization or Major, or BHSc program and a minimum GPA of 2.5 and [PHGY 215/3.0 and PHGY 216/3.0]).

**Offering Faculty:** Faculty of Health Sciences



**CRSS 498 Cardiorespiratory Rounds Units: 3.00**

An advanced course in which students attend cardiology and respirology rounds in the Department of Medicine and prepare written and oral reports based on the material presented. The course will provide students with an in-depth exposure to topics in clinical cardiorespiratory science. The course will be offered in alternate years.

NOTE Priority given to students in the CRSS Sub-Plan.

**Requirements:** Prerequisite Level 4 and registration in a LISC Major or Specialization Plan and a GPA of 2.5 and ([PHGY 215 and PHGY 216] or PHGY 214 or PHGY 212 or PHGY 210).

**Offering Faculty:** Faculty of Health Sciences