

# PHYSIOLOGY (PHGY)

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## **PHGY 170 Human Cell Physiology Units: 3.00**

This is an introductory level course on the structure and function of human cells for students interested in pursuing human health-related disciplines. Students will also learn the principles of energy metabolism, cell growth and proliferation, and how cells interact with their environment. There is also an overall focus to relate cellular processes to human function and disease, culminating in a group presentation focused on one specific cell process and how it affects health. Students taking this course will be well-prepared for upper year molecular biology courses.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office. Learning Hours may vary. LEARNING HOURS may vary 114 (36O;78P)

**Requirements:** One-Way Exclusion KNPE 225/3.0

**Offering Faculty:** Faculty of Health Sciences

## **PHGY 215 Principles of Mammalian Physiology I Units: 3.00**

The focus of this course is on the central and peripheral nervous systems, muscle physiology, the heart, and the vascular system.

NOTE This course may be paired with PHGY 216/3.0 to achieve an introductory physiology full course (6.0 units). NOTE Although it is recommended to take PHGY 215/3.0 first, this course can be taken before, after, or concurrently with PHGY 216/3.0.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office. Learning Hours may vary.

**Requirements:** Minimum 2nd year (Level 2) standing. Exclusion (KNPE 125/3.0; KNPE 225/3.0); [PHGY 210/6.0; PHGY 214/6.0; (PHGY 215/3.0 and PHGY 216/3.0)].

**Offering Faculty:** Faculty of Health Sciences

## **PHGY 216 Principles of Mammalian Physiology II Units: 3.00**

The focus of this course is the physiology of the respiratory, renal, gastrointestinal, endocrine, and reproductive system. NOTE This course may be paired with PHGY 215/3.0 to achieve an introductory physiology full course (6.0 units).

NOTE Although it is recommended to take PHGY 215/3.0 first, PHGY 216/3.0 can also be taken before or concurrently with PHGY 215/3.0.

NOTE Also offered online. Consult the Bachelor of Health Sciences program office.

Learning hour may vary.

**Requirements:** Minimum 2nd year (Level 2) standing.

Exclusion (KNPE 125/3.0;KNPE 225/3.0); [PHGY 210/6.0;PHGY 214/6.0;(PHGY 215/3.0 PHGY 216/3.0)]. Note it is recommended to take PHGY 215/3.0 first, PHGY 216/3.0 can be taken before or concurrently with PHGY 215/3.0.

**Offering Faculty:** Faculty of Health Sciences

## **PHGY 290 Investigation of Human Physiological Responses Units: 3.00**

This course is designed to advance critical thinking and practical lab skills through collaborative experimentation on human physiological responses to various stimuli. Upon completion, students should be able to (i) plan and perform experimental protocols, (ii) collect, analyze and interpret data and (iii) produce quality presentations of findings.

LEARNING HOURS 120(36Lb;48O;36P)

**Requirements:** Corequisite Minimum 2nd year (Level 2) standing, registration in a BHSc, LISC, or BCHM program, and (PHGY 215/3.0 and PHGY 216/3.0. Note: We recommend that students should have already completed a statistics course (e.g. HSCI 190/3.0 or equivalent)

**Offering Faculty:** Faculty of Health Sciences

## **PHGY 350 Pathophysiology Units: 3.00**

An introductory course in Pathophysiology in which the underlying functional changes of cell and cell systems will be discussed in association with a variety of disease processes.

LEARNING HOURS 114 (36L;6O;72P)

**Requirements:** Prerequisite (PHGY 215 and PHGY 216) or (KNPE 125 and KNPE 225) or PHGY 210 or PHGY 212 or PHGY 214

**Offering Faculty:** Faculty of Health Sciences

**PHGY 355 Biomedical Respiratory Physiology Units: 3.00**

An intermediate course focusing on biomedical applications of lung biology. Topics include lung mechanics, gas exchange, acid-base balance and control of breathing.

**Requirements:** PREREQUISITE (PHGY 215/3.0 and PHGY 216/3.0) or PHGY 210/6.0 or PHGY 212/6.0 or PHGY 214/6.0.

**Offering Faculty:** Faculty of Health Sciences

**PHGY 370 Pathophysiology Units: 3.00**

PHGY 370, Pathophysiology is an introductory course in which the underlying functional changes of cells and physiological systems will be discussed in association with a variety of disease processes. This course builds on the knowledge and concepts learned in prerequisite physiology courses and uses that foundation to understand how human disease disrupts the function of the major systems of the body, and to a lesser degree, how it is diagnosed and treated.

**Requirements:** Minimum 3rd year (Level 3) standing and ANAT100 and one of PHGY 170; IDIS 150; PHGY 210; PHGY 214 or permission of the instructor.

**Offering Faculty:** Faculty of Health Sciences

**PHGY 424 Ion Channels of Excitable Cells Units: 3.00**

The electrophysiology and biophysics of neuronal and cardiac membranes; molecular biology, structure, and function of ion channels. Students will learn to critically evaluate scientific literature. Instructional format is primarily student-led seminars.

**Requirements:** PREREQUISITE Level 4 and registration in a LISC Major or Specialization Plan and a GPA of 2.5 and [a minimum grade of C in (PHGY 215/3.0 and PHGY 216/3.0) or PHGY 210/6.0 or PHGY 212/6.0 or PHGY 214/6.0].

**Offering Faculty:** Faculty of Health Sciences

**PHGY 444 Gastrointestinal Physiology Units: 3.00**

Cellular and molecular approaches to human intestinal function are described and synthesized into an understanding of intestinal physiology at the organ level. Taught by GI researchers and clinician-scientists; students prepare and present critical appraisals of current primary research papers.

**Requirements:** PREREQUISITE Level 4 and registration in a LISC Major or Specialization Plan and a GPA of 2.5 and [a minimum grade of C in (PHGY 215/3.0 and PHGY 216/3.0) or PHGY 210/6.0 or PHGY 212/6.0 or PHGY 214/6.0].

**Offering Faculty:** Faculty of Health Sciences

**PHGY 494 Neuroendocrinology Units: 3.00**

Students are exposed to an in depth study of selected topics in neuroendocrinology and neuroendocrine techniques. Neuroendocrinology refers to the neural control of endocrine and autonomic function. Areas of focus will include central nervous system control of cardiovascular function, reproduction, and appetite. In addition, students will learn to critically evaluate scientific literature. Instructional format is primarily student led seminars.

LEARNING HOURS 114 (36S;120;96P)

**Requirements:** PREREQUISITE A minimum grade of B in: PHGY 210 or PHGY 212 or PHGY 214 or (PHGY 215 and PHGY 216) and Level 4 in a LISC Major or Specialization Plan and (a GPA of 2.5).

**Offering Faculty:** Faculty of Health Sciences

**PHGY 499 Research Project in Physiology Units: 12.00**

An investigation in a selected area of physiology. The project involves experimental design, data collection and analysis, submission of written reports, and oral presentations. Students attend seminars/tutorials on related topics. NOTE Acceptance by a supervisor required prior to registration.

NOTE Students whose research requires the care and/or handling of animals must also complete the Introductory Animal Care Course and if required the appropriate Animal Use workshops through the Office of the University Veterinarian.

LEARNING HOURS 480 (288Lb;24G;24I;144P).

**Requirements:** Prerequisite Level 4 and registration in a LISC Specialization Plan and a cumulative GPA of 2.50 or higher. Exclusion ANAT 499; CANC 499; EPID 499; LISC 499; MICR 455; MICR 499; NSCI 499; PATH 499; PHAR 499; REPD 499.

**Offering Faculty:** Faculty of Health Sciences