



# **HHNS\*6500 Cardiovascular and Respiratory Physiology**

Fall 2021

Section(s): C01

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 1.00 - September 03, 2021

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## **1 Course Details**

### **1.1 Calendar Description**

This course will use both review articles and the primary literature to build a broad base of understanding of the cardiovascular and respiratory systems as well as explore current research in specific areas in this knowledge paradigm. Further, this course will build research skills through by strengthening critical analysis skills and both oral and written communication skills through learning about the cardiovascular and respiratory system and how they integrate.

### **1.2 Course Description**

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### **1.3 Timetable**

Wed 8:30-11:20; face-to-face meetings once a week. This is a discussion based course so the face-to-face components are mandatory.

Please note the proposed course format, schedule or location for the Fall 2021 semester may change up to the first day of classes or during the semester due to personnel, resource, and public health circumstances and if conditions cannot be met to ensure the safety of our students and instructors. Continue to watch the Student Planning website as format information could be updated until the first day of classes.

The location of the course may also change. The location will be confirmed via Student Planning Guide (formerly WebAdvisor) just prior to the first day of classes.

## 1.4 Final Exam

.No final exam

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# 2 Instructional Support

## 2.1 Instructors

Dr. Coral Murrant    email: cmurrant@uoguelph.ca

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# 3 Learning Resources

## 3.1 Required Resources

### **Multiple research and review articles (Article)**

PDF links to research articles and review articles will be provided.

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# 4 Learning Outcomes

The overarching philosophy of this course is to establish research competency by developing tenants of scientific inquiry: critical evaluation, effective scientific writing and presentation skills; all done using the primary scientific literature in the areas of the cardiovascular and respiratory system and how they integrate. The goals of this course are to build strong research skills including critical analysis, oral and written communication skills. These skills will undergo multiple and continuous assessment during the course.

Critical analysis skills will be developed by evaluation of approximately 20 research papers using a template of questions to guide students through the evaluation process. The goal is to make these template questions habit when critically reading any research paper.

Oral communication skills will be developed through the presentation of information encompassed in primary research articles with the goal being to teach fellow students. This exercise will be evaluated by peers who also will have to be reflective on how this presentation will enhance their own presentation style. There will be a self-evaluation component to reflect on strengths and weaknesses. Oral communication skills will also be strengthened through a poster presentation of a proposed experiment.

Written communication skills will be developed through weekly written summaries of primary literature article. The logic of scientific writing will be reinforced through weekly critical analysis exercises of the primary literature.

All of the above skills development will be done using class presentation and class discussion of review and primary articles on the cardiovascular system and the respiratory system as our base of discussion.

## **4.1 Course Learning Outcomes**

By the end of this course, you should be able to:

1. Critically evaluate published research in the area of cardiovascular and respiratory physiology.
2. Communicate effectively through formal and informal oral presentations.
3. Communicate effectively through formal and informal writing, with an emphasis on scientific writing.
4. Integrate research findings into the basic understanding of how the cardiovascular system and the respiratory system work.
5. Effectively work with peers to meet learning goals through collaboration.
6. Appreciate scientific, ethical and practical considerations behind designing and conducting research.
7. Identify gaps in knowledge in the area of cardiovascular and respiratory physiology.

8. Develop respectful academic and professional behavioral practices.

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## 5 Teaching and Learning Activities

### 5.1 Lecture

**Topics:**

Course structure and activities may change depending on the number of students that enroll in the course. Below is an outline of the course structure when the course enrollment is over 10. If enrollment is under 10 the course structure will need to change. The course structure will be determined in the first meeting of the class.

<b>DATE</b>	<b>Reading topic</b>	<b>*Activities</b>
Sept 16	Introduction Cardiovascular overview	Introduction to course - M Assign papers
Sept 23	Cardiac function – contractile proteins	1. Overview – Murrant 2. Presentation – 3. Presentation –
Sept 30	Cardiac function – systemic links	1. Overview – Murrant 2. Presentation – 3. Presentation –

Oct 07	Vasculature – functional sympatholysis	1. Overview – Murrant 2. Presentation – 3. Presentation –
Oct 14	Vasculature – active hyperaemia	1. Overview – Murrant 2. Presentation – 3. Presentation –
Oct 21	Neural integration of the cardiovascular system – sex differences	1. Overview – Murrant 2. Presentation – 3. Presentation –
Oct 28	Neural integration of the cardiovascular system – SNS response to exercise	1. Overview – Murrant 2. Presentation – 3. Presentation -
Nov 04	Respiratory control	1. Overview – Murrant 2. Presentation – 3. Presentation –
Nov 11	Exercise – limits to performance – stroke volume	1. Overview – Murrant 2. Presentation – 3. Presentation –

Nov 18	Exercise – limits to performance – central governor?	1. Overview – Murrant 2. Presentation – 3. Presentation –
Nov 25	Student presentations	Oral presentations of own

## 6 Assessments

Weight of assessment***	Activity***	Learning outcome addressed
10%	In class peer and self assessments	2,3,5,6,8
30%	Written summaries	1,3,4,6,7,8
20%	Oral presentations of papers	2,3,5,6,7,8
20%	Oral presentation of own choice	2,3,6,7,8
20%	Professional behavior and academic development	1,2,3,4,5,6,7,8

a) In class assessments: Students will assess their peers presentations of papers and will assess their own presentations of papers.

b) Written summaries for each original research article will be completed and submitted by 10:00am on Monday, two days before the papers will be discussed. An electronic copy must be uploaded into the dropbox on the Courselink site for the course. Summaries are NOT to be completed for review articles. Written summaries will be no longer than 1 page in length and will include the hypothesis or purpose of the paper and why this is an important question to answer, key methods/protocols used, the key results (i.e. address the importance of each figure and table, and important results from the text) and the conclusions from the paper. There will be a handout of guiding questions to help with the content here.

c) Oral summaries of the papers about to be discussed will be presented by students each week. These summaries will be 5-10 minutes and consist of 8-10 slides/overheads.

d) Oral presentation of own work: Students will present an idea, they will tell why it is important know the answer (introduction), develop a hypothesis, present how they would test it (methodology), present data that they would get from this methodology (results) and present their conclusions based on their results. Presentations will be 10 minutes in length.

e) Professional behavior and academic development: This includes skills such as leadership, teamwork, intellectual independence, personal organization and time management. These skills are shown through meaningful and thoughtful contributions to conversations, leadership in discussions, engaging others in meaningful dialogue, etc. Further these skills are demonstrated through activities such as handing in assignments on time, coming to class on time, respectful classroom conduct (i.e. not distracted by computers, cell phones, etc.). These types of activities will be assessed per week throughout the course.

\*\*\*Course activities and assessment weighting may change depending on the number of students that enroll in the course. Above is a representation of the activities that are valued in this course to achieve the learning outcomes, the weightings of the assessments may change depending on the course enrollment. The course activities and assessments will be determined in the first meeting of the class.

## 7 Department of Human Health and Nutritional Sciences Statements

### 7.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

### 7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

### 7.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.selfregulationskills.ca/>



## 7.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) <http://www.e-laws.gov.on.ca/index.html>. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar.  
(<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

## 7.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

# 8 University Statements

## 8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

## 8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions  
<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

## 8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and

alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

## 8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

## 8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website

<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

## 8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that

instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## 8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

## 8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## 8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

## **8.11 Covid-19 Safety Protocols**

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.

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