



## **EQN\*3050 Equine Exercise Physiology**

Winter 2019

Section(s): C01

Department of Animal Biosciences

Credit Weight: 0.50

Version 1.00 - January 03, 2019

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### **1 Course Details**

#### **1.1 Calendar Description**

This course considers the conversion of absorbed nutrients into metabolic fuels and the use of these substrates for work and heat production in horses. This knowledge is used as a basis for the understanding of the training and performance of horses used for competitive purposes.

**Pre-Requisite(s):** ANSC\*3080 or (EQN\*2040, EQN\*2050)

#### **1.2 Course Description**

Students will develop an understanding for the basic physiological principles of muscle contraction and fatigue, thermoregulation, energy utilization under differing exercise intensities, and how these principles can be applied to differential training strategies for equine athletes.

#### **1.3 Timetable**

Timetable is subject to change. Please see WebAdvisor for the latest information.

#### **1.4 Final Exam**

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

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### **2 Instructional Support**

#### **2.1 Instructional Support Team**

**Instructor:** Wendy Pearson  
**Email:** wpearson@uoguelph.ca  
**Telephone:** +1-519-824-4120 x53652

**Office:** ANNU 227  
**Office Hours:** Office hours by appointment

## 2.2 Teaching Assistant(s)

**Teaching Assistant:** Leah Wellard  
**Email:** lwellard@uoguelph.ca  
**Office Hours:** Office hours by appointment

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# 3 Learning Resources

## 3.1 Required Resource(s)

### Required texts: (Textbook)

Equine Exercise Physiology: The Science of Exercise in the Athletic Horse. Author(s): Kenneth W. Hinchcliff, BVSc(Hons) MS PhD Dip ACVIM, Raymond J. Geor, BVSc MVSc PhD Dipl ACVIM, and Andris J. Kaneps, DVM PhD Dip ACVS. ISBN: 978-0-7020-2857-1. PDF version available via University library.

## 3.2 Recommended Resource(s)

### Recommended Texts (Textbook)

1. Anatomy and Physiology of Farm Animals (Frandsen) (e-version available through UofG Library)

## 3.3 Field trips:

None

## 3.3 Additional Costs

None

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# 4 Learning Outcomes

## 4.1 Course Learning Outcomes

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

1. Specific Learning Outcomes:

*Upon completion of this course, students should/will:*

1. understand and explain basic principles of muscle contraction and relaxation within a context of energetic inputs and differential training regimens
1. define fundamental principles of energy demand, energy supply and energy utilization within muscle
2. articulate the integration of major physiological systems, including cardiovascular, respiratory, musculoskeletal and gastrointestinal systems within the context of the equine athlete.

## 5 Teaching and Learning Activities

### 5.1 Lecture

#### Week 1

**Topic(s):** Introduction to exercise physiology

#### Week 2

**Topic(s):** Muscle physiology

#### Week 3

**Topic(s):** Bones tendons and ligaments: adaptive responses to exercise and training

#### Week 4

**Topic(s):** Articulating joints and cartilage

**Week 5**

**Topic(s):** Biomechanics of appendicular skeleton and hooves

**Week 6**

**Topic(s):** Respiratory physiology in exercise and training

**Topic(s):** WINTER BREAK - NO LECTURES THIS WEEK

**Week 7**

**Topic(s):** Cardiovascular function and oxygen transport

**Week 8**

**Topic(s):** Gastrointestinal responses to exercise and training;  
ergogenic aids

**Week 9**

**Topic(s):** Hydration and thermoregulation

**Week 10**

**Topic(s):** Metabolic and endocrine responses to exercise and training

**Week 11**

**Topic(s):** Acid base physiology

**Week 12**

**Topic(s):** Exercise testing in the field

**5.2 Lab**

**Topic(s):** None

## 6 Assessments

### 6.1 Assessment Details

**Quiz 1 (20%)**

**Date:** Week 3, online via courselink

**Quiz 2 (20%)**

**Date:** Week 6, online via courselink

**Quiz 3 (20%)**

**Date:** Week 9, online via courselink

**Literature Review (20%)**

**Date:** Week 10, Submit via dropbox on courselink

**Final Exam (20%)**

**Date:** Week 12, online via courselink

Final exam is cumulative, but focuses on material since the last quiz.

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## 7 Course Statements

### 7.1 Grading Policies

Course policy on late assignments: penalty of 20% per day for maximum of three days after which no assignments will be accepted without approved academic consideration.

Alternate assessments will be offered only to students with documented medical, psychological, or compassionate reasons **for missing a scheduled assessment**. An Academic Consideration form must be submitted to the instructor. Go to <https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac-ac.shtml> for information on regulations and procedures related to Academic Consideration. Late assignments, if applicable, will be penalized at 10% per day late, commencing the day following the published due date, and will only be accepted for a maximum of 3 days following the published due date.

### 7.2 Course Policy regarding use of electronic devices and recording of Lectures

The general use of small, personal electronic devices (e.g. cell phones, iPods) during class is disruptive and disrespectful. As a result, their use in the classroom for reasons other than

instructor-led learning is prohibited.

The use of a laptop for the purpose of taking notes/learning in the classroom is a *privilege*. Any student abusing this concession by using a laptop in class for other purposes will have the privilege revoked.

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## 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>

### 8.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate 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>

## 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.

More information can be found on the SAS website  
<https://www.uoguelph.ca/sas>

## 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>

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