



# BIOM\*6712 Special Topics in Physiology and Biochemistry - DRAFT

Winter 2021

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 0.50

Version 1.00 - January 12, 2021

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## 1 Course Details

### 1.1 Calendar Description

This course involves an appropriate combination of an experimental procedure (or project), seminars, selected reading or a literature review outside the thesis subject, developed according to the student's requirements.

**Restrictions:** Restricted to MSC.BMED, PHD.BMED, DVSC.BMED and MBS.BMED:L students.

### 1.2 Course Description

#### **Class Size**

Maximum of 20 students.

#### **Course Design**

The course is offered as weekly seminar series/journal club plus an independent study project, with the instructor providing students with guidance throughout the program.

The course consists of a brief class introduction to the topic of regenerative medicine. Learning material and an oral introduction to the methodology of literature review and scientific writing are provided in the beginning of the course. Hereafter, weekly seminars will be provided on a broad range of topics related to regenerative medicine as conducted at the University of Guelph. In addition to these class activities each student will complete a written literature review and an oral presentation. The literature review is to be written as a review paper of and formatted as per author guidelines of a specific journal. The topic of the literature review will be decided by the instructor in consultation with the student. The oral presentation of the literature review will be given in front of the instructor and at least two

additional faculty members. The presentation is expected to be 12 minutes in duration with a brief 3-minute questioning period after the presentation.

### 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

**Course Co-ordinator:** Thomas Koch  
**Email:** tkoch@uoguelph.ca  
**Telephone:** +1-519-824-4120 x53719  
**Office:** OVCE 3601

**Course Co-ordinator:** Mark Hurtig  
**Email:** mhurtig@uoguelph.ca  
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## 3 Learning Resources

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## 4 Learning Outcomes

The learning objective of this graduate level course is to assist the students in gaining a general understanding of topics pertaining to the overall field of regenerative medicine and provide students an opportunity to hone their skills in knowledge gathering and communication of knowledge. Overview lectures and seminars pertaining to stem cell, selected tissue biology or other areas within regenerative medicine are provided by a diverse group of faculty members from the Comparative and Translational Regenerative Medicine Network at the University of Guelph. More in-depth understanding of stem cell and or tissue biology in a specific area is obtained through a written literature review. By critically reviewing current published manuscripts in the field and orally presenting them in a friendly small group setting the students will retain the information better and build confidence in their scientific writing and public speaking skills.

### 4.1 Course Learning Outcomes

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

1. Understand what stem cells are and how they are isolated or generated
  2. Understand stem cell characterization, maintenance and differentiation methods
  3. Appreciate how (stem) cell-based therapies are being advocated/explored in human and veterinary medicine
  4. Appreciate what the field of regenerative medicine encompasses
  5. Critically evaluate current scientific literature in the field and compare it to the information provided to the general public
  6. Have enhanced scientific writing and presentation skills
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## 5 Teaching and Learning Activities

**Location: Room 1642 in Biomed Sci, OVC, Fridays at 10.00 – 11.20 AM on below dates.**

**Schedule** (*subject to change based on number of students and faculty availability*):

### 5.1 Lecture

**Thu, Jan 11**

**Topics:** Course introduction and stem cell introduction

Prof. Koch

**Thu, Jan 18**

**Topics:** Introduction to scientific review and writing

Prof. Koch

**Thu, Jan 25**

**Topics:** Class critical review of articles

Prof. Koch

### 5.2 Seminar

**Thu, Feb 1**

**Topics:** Osteoarthritis: Challenges and Opportunities for Regenerative Medicine

1st Seminar: Prof. Mark Hurtig

**Thu, Feb 8**

**Topics:** Synovial Joint Cellular Therapies

2nd Seminar: Prof. Mark Hurtig

**Thu, Feb 15**

**Topics:** Status After A Decade With Equine Cord Blood MSCs

3rd Seminar: Prof. Thomas G. Koch

**Thu, Feb 22**

**Topics:** **No Class – Winter Break**

**Thu, Mar 1**

**Topics:** Investigating The Mechanisms By Which Integrin Apha1beta1 Protects The Knee From Osteoarthritis

4th Seminar: Prof. Andrea Clark

**Thu, Mar 8**

**Topics:** Where Biology Meets Biomedicine: Tales Of Regeneration From Lizards In The Lab

5th Seminar: Prof. Matt Vickaryous

**Thu, Mar 15**

**Topics:** Angiogenic Mechanisms Associated With Tissue Regeneration

6th Seminar: Prof. Jim Petrik

**Thu, Mar 22**

**Topics:** Dividing Cells Asymmetrically In The Developing Brain: A Role For RNA-Binding Proteins And Post Transcriptional Gene Regulation

7th Seminar: Prof. John Vessey

**Thu, Mar 29**

**Topics:** Inhibition Of Fat Oxidation As A Therapeutic Strategy For Acute Myeloid Leukemia

8th Seminar: Prof. Paul A. Spagnuolo

**Thu, Apr 5**

**Topics:** TBD

9th Seminar

**Thu, Apr 12**

**Topics:** Presentation day

## 6 Assessments

### 6.1 Assessment Details

#### Written Literature Review (65%)

- Review paper itself (abstract and text body) - 50%
- Annotated bibliography discussing top 10 references of paper - 15%

The topic of the review paper must be approved by the course coordinator (Prof. Koch) by **Feb 1st** and handed in by **Mar 29th (before midnight)** at the latest (electronic word file). In order to ensure appropriate reference focus and selection the annotated bibliography (electronic word file) is due by **Mar 1st (before midnight)**. The manuscript is to be formatted as per author guidelines of a journal selected with the approval of the course coordinator. However, regardless of the journal guidelines the manuscript must not exceed 4000 words and 10 double-spaced pages (not including references, Figures and Tables) using 12-point Times New Roman font and 1 inch margins.

#### Oral Presentation of Literature Review (25%)

In addition to the above guidelines students are expected to grade the presentations of their peers. The grades will be averaged and weighted with 10% compared to 30% from each faculty member. A minimum of two faculty members will contribute to this grade, e.g. the average student grades will be multiplied with 0.1 and each faculty member grade will be multiplied with 1.3 and these 4 weighted grades are added together for the final grade.

#### Class and seminar participation (10%)

## 7 University Statements

### 7.1 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.

### 7.2 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>

### 7.3 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>

### 7.4 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.

### 7.5 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>

## 7.6 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>

## 7.7 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.

## 7.8 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>

## **7.9 Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## **7.10 Illness**

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

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