



BIOM*6930 Concepts in Human Regenerative Medicine

Fall 2022
Section(s): C01

Department of Biomedical Sciences
Credit Weight: 1.00
Version 1.00 - September 06, 2022

1 Course Details

1.1 Calendar Description

This course provides a broad overview of the field of human regenerative medicine (RM), including cell-based disease models, emerging technologies, clinical applications and ethical, commercial and regulatory challenges to moving stem cell therapies from the lab to the clinic.

Restrictions: Instructor consent required.

1.2 Course Description

This capstone course will provide a broad overview of the field of regenerative medicine (RM), including cell-based disease models, emerging technologies, as well as clinical applications. Concepts in practical cell-based therapies will be explored through discussions around One Health, cell manufacturing, commercialization, and regulatory challenges. This course also includes a lab-based module to introduce learners to cell culture techniques and equipment often used in R&D and process development laboratories as well as cell manufacturing companies.

1.3 Timetable

Class date and time: Thursdays, 8:30 AM – 9:50 AM (with some exceptions noted in lecture schedule)

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

1.4 Final Exam

N/A

2 Instructional Support

Course Coordinator:

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Guest Lecturers:

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Senior Director of Operations, Centre for Commercialization of Regenerative Medicine
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3 Learning Resources

Learning materials, such as specific articles, educational videos, websites, and/or lab safety training will be provided ahead of corresponding lectures or lab modules.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Technical Skills

- Accurately and reproducibly perform RM related laboratory techniques
- Identify and describe emerging tools for RM related research
- Outline best practices for translation to the clinic

2. Research

- Critically evaluate RM related literature and peer project design
- Expand current knowledge or generate new knowledge using different forms of science communication

3. Leadership and Collaboration

- Apply strong networking and interpersonal skills in professional settings
- Identify gaps in knowledge and seek out experts for help in project design and/or troubleshooting

4. Ethics and Policy

- Describe the current regulations in place in Canada and the US for biologics and cell-based therapies
- Understand/relate to patient perspectives in clinical trials

5. Commercialization and Entrepreneurship

- Outline the production of an RM product from the idea stage to market
- Describe the development of Canadian-made start-ups in the RM space
- Understand the production and benefits of intellectual property

5 Teaching and Learning Activities

- Weekly lectures and/or lab modules will be delivered by the course

coordinators/instructors and guest lecturers on topics related to course outcomes

- Students will experience various types of training and education in this course: didactic, lecture-based learning; flipped classroom discussions; and hands-on lab training
- Lab modules will consist of two one-week long training sessions on cell culture and good laboratory techniques
- Several different assessments will be used to evaluate student progress; no midterm or final exams:
 - Lab will be used to assess understanding of techniques learned in lab training modules
 - Journal Club will be used to evaluate understanding of topic-related primary articles and assess group presentation and participation skills
 - Small formative assessments will allow students and instructors to gauge progress in learning and understanding course content
 - Dragon’s Den Express: Concurrent with the lecture(s) on commercialization and entrepreneurship, students will deliver a 60 second “elevator pitch” on an RM-related project
 - Career Day: Students will be required to participate in a Career Day hosted by the Centre for Commercialization of Regenerative Medicine (CCRM) and the Canadian Advanced Therapies Training Institute (CATTI)

6 Assessments

6.1 Marking Schemes & Distributions

Assessment	Value	Date	Associated Learning Outcome(s)
Quizzes	15%	TBD	1 and 3
Journal Club	20% (15% presentation,	TBD	2 and 3

	5% engagement)		
Self-reflection (x2)	10%	TBD	All learning outcomes
Dragon's Den Express	25%	TBD	5
Engagement (lab modules, class discussions, Career Day)	30%	TBD	All learning outcomes

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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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, 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.

7.10 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).

7.11 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.
