

**IBEHS 2R00/3R00/4R00**  
**Current Research Initiatives**  
*Fall 2021/Winter 2022 Course Outline*

**INSTRUCTOR CONTACT INFORMATION**

**Course Instructor:**

Dr. Kenneth Owen

[owenk@mcmaster.ca](mailto:owenk@mcmaster.ca)

**TA:**

Zaineb Hamoodi

[hamoodiz@mcmaster.ca](mailto:hamoodiz@mcmaster.ca)

**CLASS MEETING TIMES AND LOCATIONS**

Date	Tuesdays
Time	15:30-17:20
Location	Mixed online  ***Principally done virtually, with limited classes done in-person

**COURSE DESCRIPTION**

Each year students will complete 1.5 units of this course but final evaluation will occur in Level V. Students will attend and document 6-12 additional learning opportunities each year. This may include health science rounds and seminars in any faculty at any university. It may also include attending national or international meetings in the health science, business or engineering domains. The content of this process may inform activities in the Health Entrepreneurship courses and learning portfolios will be used for evaluation.

You will have the freedom to pave your own learning path and set your own learning goals by investigating multifaceted, broadly identified problems based on a theme, such as diabetes, ALS, and others. Through self-paced webinars and group discussions, you will have the opportunity to explore and reflect upon the fields, problems, and issues you want to work on throughout your undergraduate program and beyond.

## LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

- Analyze a current problem in the health, biomedical engineering and entrepreneurship fields.
- Create an effective education tool about a specific health- and biomedical-related problem.
- Demonstrate professional communication skills among team members.
- Demonstrate the skills that are important for a successful interview
- Contribute to a team learning project that incorporates the problems you have identified.
- Apply a learned skill to complete a deliverable showing your success.

## REQUIRED COURSE MATERIALS AND READINGS

No textbook is required for this course.

## EVALUATION

The following deliverables are expected to be submitted by the end of the course:

- Deliverable for independent skill development
- Networking worksheet
- Pack proposal
- 4 post-meeting reflections
- Project reflection
- Pack sub-topic deliverable

Failure to submit the above assignments will result in failure of the course. Late submissions of assignments without approved reasons will reduce your grade. All assignments in this course are equally graded.

## COMMUNICATION AND FEEDBACK

Communication with your course instructor can be done by emailing [owenk@mcmaster.ca](mailto:owenk@mcmaster.ca). **NEVER use Avenue to Learn's email system as it will be overlooked and will not be responded to.**

**Office Hours:** TAs and the Professor will be available during Lab time. If you wish to speak to a TA, you must e-mail them to arrange a time. If you wish to speak to the professor, you may contact him through MS Teams. If there is a green “available” badge next to his name, feel free to page him. Think of it like going to his office and seeing his door open.

## ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

The following illustrates only three forms of academic dishonesty:

- Plagiarism, e.g., the submission of work that is not one's own or for which other credit has been obtained.
- Improper collaboration in group work.
- Copying or using unauthorized aids in tests and examinations.

## AUTHENTICITY / PLAGIARISM DETECTION

In this course we will be using a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. Students will be expected to submit their work electronically either directly to Turnitin.com or via Avenue to Learn (A2L) plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish to submit their work through A2L and/or Turnitin.com must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com or A2L. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). To see the Turnitin.com Policy, please go to [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

## ON-LINE ELEMENT

In this course we will be using Avenue to Learn (A2L), Zoom, MS Teams, Webex, Macvideo, and Echo360. Students should be aware that, when they access the electronic components of this course, private information such as first and last names,

user names of McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

### **ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES**

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail [sas@mcmaster.ca](mailto:sas@mcmaster.ca). For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

### **REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK McMASTER STUDENT ABSENCE FORM (MSAF)**

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work".

MSAFs will be given a 48-hour extension. Only individual work is eligible for a MSAF extension, Group work will not be considered.

### **ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)**

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

### **EXTREME CIRCUMSTANCES**

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

<b>McMASTER UNIVERSITY GRADING SCALE</b>
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<b>Grade</b>	<b>Equivalent Grade Point</b>	<b>Equivalent Percentages</b>
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69
C	5	63-66
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	0-49

## COURSE SCHEDULE

### Term 1

Week	Tasks/Class	Major Deadlines
Week 1: Sept 5 <sup>th</sup> – 11 <sup>th</sup>	<u>Class #1 – introduction, decide on the skills you want to develop</u>	Goals form due on Sept 10 <sup>th</sup> , 2021
Week 2: Sept 12 <sup>th</sup> – 18 <sup>th</sup>	Independent skills development	
Week 3: Sept 19 <sup>th</sup> – 25 <sup>th</sup>	<u>Class #2 – Networking</u> Independent skills development	
Week 4: Sept 26 <sup>th</sup> – Oct 2 <sup>nd</sup>	Independent skills development Decide on a pack topic	Complete survey by Oct 1 <sup>st</sup> , 2021
Week 5: Oct 3 <sup>rd</sup> – 9 <sup>th</sup>	<u>Class #3 – meet your Pack</u> Independent skills development	
Oct 10 <sup>th</sup> – 16 <sup>th</sup>	<b>Reading week</b>	
Week 6: Oct 17 <sup>th</sup> – 23 <sup>rd</sup>	Independent skills development	Final deliverables due on Oct 22 <sup>nd</sup> , 2021
Week 7: Oct 24 <sup>th</sup> – 30 <sup>th</sup>	<u>Class #4 – Interview skills</u> Begin developing your sub-topic	
Week 8: Oct 31 <sup>st</sup> – Nov 6 <sup>th</sup>	Sub-topic proposal development	
Week 9: Nov 7 <sup>th</sup> – 13 <sup>th</sup>	<u>Class #5 – check-in, decide on a subtopic</u> Sub-topic proposal development	<i>Suggested deadline: Decide on a sub-topic question by class #5</i>
Week 10: Nov 14 <sup>th</sup> – 20 <sup>th</sup>	Sub-topic proposal development	
Week 11: Nov 21 <sup>st</sup> – 27 <sup>th</sup>	<u>Class #6 – check-in, write out 3 SMART goals</u> Sub-topic proposal development	<i>Suggested deadline: Write out 3 SMART goals by class #6</i>

Week 12: Nov 28 <sup>th</sup> – Dec 4 <sup>th</sup>	Sub-topic proposal development	Proposal due Dec 3 <sup>rd</sup> , 2021
Week 13: Dec 5 <sup>th</sup> – 8 <sup>th</sup>	No class	

## Term 2

Week	Tasks	Major Deadlines
Week 14: Jan 10 <sup>th</sup> – Jan 15 <sup>th</sup>	<u>Class #7: Pack check-in</u> Sub-topic investigation	
Week 15: Jan 16 <sup>th</sup> – 22 <sup>nd</sup>	Sub-topic investigation	
Week 16: Jan 23 <sup>rd</sup> – 29 <sup>th</sup>	<u>Class #8: Pack check-in</u> Sub-topic investigation	Complete check-in form by Jan 28 <sup>th</sup> , 2021
Week 17: Jan 30 <sup>th</sup> – Feb 5 <sup>th</sup>	Sub-topic investigation	
Week 18: Feb 6 <sup>th</sup> – 12 <sup>th</sup>	<u>Class #9: Pack check-in</u> Sub-topic investigation	Complete check-in form by Feb 11 <sup>th</sup> , 2021
Week 19: Feb 13 <sup>th</sup> – 19 <sup>th</sup>	Sub-topic investigation	
Feb 20 <sup>th</sup> – 26 <sup>th</sup>	<b>Reading week</b>	
Week 20: Feb 27 <sup>th</sup> – Mar 5 <sup>th</sup>	<u>Class #10: Pack check-in</u> Sub-topic investigation	Complete check-in form by Mar 4 <sup>th</sup> , 2021
Week 21: Mar 6 <sup>th</sup> – 12 <sup>th</sup>	Sub-topic investigation	
Week 22: Mar 13 <sup>th</sup> – 19 <sup>th</sup>	<u>Class #11: Pack check-in</u> Sub-topic investigation	Complete check-in form by Mar 18 <sup>th</sup> , 2021
Week 23: Mar 20 <sup>th</sup> – 26 <sup>th</sup>	Sub-topic investigation	

Week 24: Mar 27 <sup>th</sup> – Apr 2 <sup>nd</sup>	<u>Class #12: Pack check-in</u> Sub-topic investigation	
Week 25: Apr 3 <sup>rd</sup> – 9 <sup>th</sup>	Sub-topic investigation	Final deliverable and project reflection form due April 8 <sup>th</sup> , 2021
Week 26: Apr 10 <sup>th</sup> – 12 <sup>th</sup>	<u>No class</u>	



# Integrated Biomedical Engineering & Health Sciences (IBEHS) Labs/Design Studio Safety

## Information for Laboratory Safety and Important Contacts

This document is for users of IBEHS instructional laboratories at the following locations:

- ABB C104 (Design Studio)
- ETB 533 (Medical Imaging/Biomaterials Lab)
- ETB 534 (Medical Instrumentation/Robotics Lab)
- HSC 4N72 (Genetic Engineering Lab)

This document provides essential information for the healthy and safe operation of IBEHS instructional laboratories. This document is required reading for all laboratory supervisors, instructors, researchers, staff, and students working in or managing instructional laboratories in IBEHS. It is expected that revisions and updates to this document will be done continually. A McMaster University [lab manual](#) is also available to read in every laboratory.

For Standard Operating Procedures (SOPs), Health and Safety videos and other resources, follow [this link](#).

## General Health and Safety Principles

Good laboratory practice requires that every laboratory worker and supervisor observe the following:

- Food and beverages are not permitted in the instructional laboratories.
- A Laboratory Information Sheet on each lab door identifying potential hazards and emergency contact names should be known.
- Laboratory equipment should only be used for its designed purpose.
- Proper and safe use of lab equipment should be known before using it.
- The lab tech or course TA leading the lab should be informed of any unsafe conditions.
- The location and correct use of all available safety equipment should be known.
- Potential hazards and appropriate safety precautions should be determined, and the sufficiency of existing safety equipment should be confirmed before beginning new operations.
- Proper waste disposal procedures should be followed.
- [Personal ergonomics](#) should be practiced when conducting lab work.
- [Current University health and safety](#) issues and protocols should be known.

## Location of Safety Equipment

### Fire Extinguisher

On walls in halls outside of labs or within labs

### First Aid Kit

ABB C104, ETB 533, ETB 534, HSC 4N72 or dial "88" after 4:30 p.m.

### Telephone

On the wall of every lab near the door

### Fire Alarm Pulls

Near all building exit doors on all floors

## Who to Contact

### Emergency Medical / Security:

On McMaster University campus, call Security at extension **88** or **905-522-4135** from a cell phone.

### Hospital Emergency Medical / Security:

For McMaster HSC, call Security at extension **5555** or **905-521-2100** from a cell phone.

Non-Emergency Accident or Incident: Immediately inform the Lab Tech, TA on duty or Course Instructor.

### University Security (Enquiries / Non-Emergency):

Dial 24281 on a McMaster phone or dial 905-525-9140 ext. 24281 from a cell phone.

See Lab Tech, TA or Instructor: For problems with heat, ventilation, fire extinguishers, or immediate repairs.

Environmental & Occupational Health Support Services (EOHSS): For health and safety questions dial 24352 on a McMaster phone or dial 905-525-9140 ext. 24352 from a cell phone.

IBEHS Specific Instructional Laboratory Concerns: For non-emergency questions specific to the IBEHS laboratories, please contact appropriate personnel below from a McMaster phone:

- Leela Pilli, Laboratory Technician – 26888
- Parmveer Bola, Instructional Assistant – 23521
- Andrej Rusin, Wet Laboratory Technician – 28347
- Alexa Behar-Bannelier, Program Manager – 24548

## **In Case of a Fire (Dial 88)**

When calling to report a fire, give name, exact location, and building.

1. Immediately vacate the building via the nearest Exit Route. Do not use elevators!
2. Everyone is responsible for knowing the location of the nearest fire extinguisher, the fire alarm, and the nearest fire escape.
3. The safety of all people in the vicinity of a fire is of foremost importance. But do not endanger yourself!
4. In the event of a fire in your work area shout "*Fire!*" and pull the nearest fire alarm.
5. Do not attempt to extinguish a fire unless you are confident it can be done in a prompt and safe manner utilizing a hand-held fire extinguisher. Use the appropriate fire extinguisher for the specific type of fire. Most labs are equipped with Class A, B, and C extinguishers. Do not attempt to extinguish Class D fires which involve combustible metals such as magnesium, titanium, sodium, potassium, zirconium, lithium, and any other finely divided metals which are oxidizable. Use a fire sand bucket for Class D fires.
6. Do not attempt to fight a major fire on your own.
7. If possible, make sure the room is evacuated; close but do not lock the door and safely exit the building.

## **Clothing on Fire**

Do not use a fire extinguisher on people.

1. Douse with water from safety shower immediately or
2. Roll on the floor and scream for help or
3. Wrap with fire blanket to smother flame (a coat or other nonflammable fiber may be used if a blanket is unavailable). Do not wrap a standing person; rather, lay the victim down to extinguish the fire. The blanket should be removed once the fire is out to disperse the heat.

## **Equipment Failure or Hazard**

Failure of equipment may be indicative of a safety hazard - You must report all incidents.

Should you observe excessive heat, excessive noise, damage, and/or abnormal behaviour of the lab equipment:

1. Immediately discontinue use of the equipment.
2. In Power Lab, press the wall-mounted emergency shut-off button.
3. Inform your TA of the problem.
4. Wait for further instructions from your TA.
5. TA must file an incident report.

## Protocol for Safe Laboratory Practice

Leave equipment in a safe state for the next person - if you are not sure, ask!

### Defined Roles

TA	The first point of contact for lab supervision	
IBEHS Lab Technician	Leela Pilli	<a href="mailto:pillil@mcmaster.ca">pillil@mcmaster.ca</a>
IBEHS Instructional Assistant	Parmveer Bola	<a href="mailto:bolap1@mcmaster.ca">bolap1@mcmaster.ca</a>
IBEHS Wet Lab Tech	Andrej Rusin	<a href="mailto:rusina@mcmaster.ca">rusina@mcmaster.ca</a>
IBEHS Co-Directors	Dr. Greg Wohl Dr. Michelle MacDonald	<a href="mailto:wohlg@mcmaster.ca">wohlg@mcmaster.ca</a> <a href="mailto:macdonml@mcmaster.ca">macdonml@mcmaster.ca</a>
IBEHS Program Manager	Alexa Behar-Bannelier	<a href="mailto:alexa.behar@mcmaster.ca">alexa.behar@mcmaster.ca</a>
IBEHS Course Instructor	Please contact your specific course instructor directly	