

IBEHS 3H03, 3I06, 4H03

Research Project

(2025/26)

Course Outline

Calendar/Course Descriptions

IBEHS 3H03 – Research Project

3 unit(s)

A special course of study to be arranged by mutual consent of a supervisor and the student, to carry out experiments, research and/or theoretical investigations. Students may consider this course to advance a project conceived in the Health Solutions Design Projects courses.

One term

Prerequisite(s): Registration in Level III of any Integrated Biomedical Engineering and Health Sciences (iBioMed) program and permission of the program

Antirequisite(s): IBEHS 3I06 A/B S

IBEHS 3I06 A/B S – Research Project

6 unit(s)

A special course of study to be arranged by mutual consent of a supervisor and the student, to carry out experiments, research and/or theoretical investigations. Students may consider this course to advance a project conceived in the Health Solutions Design Projects courses.

Two terms

Prerequisite(s): Registration in Level III or above of any Integrated Biomedical Engineering and Health Sciences (iBioMed) program and permission of the program.

Antirequisite(s): CHEMENG 4Y04 A/B, CIVENG 4Z04, COMPENG 4OH4, COMPENG 4OJ4, COMP ENG 4OK4, ELECENG 4OH4, ELECENG 4OJ4, ELECENG 4OK4, ENGPYHS 3H04 A/B, ENGPYHS 4H04 A/B, IBEHS 3H03, MATLS 4KA3, MATLS 4KB3, MATLS 4K06, MECHENG 4X04 A/B, HTHSCI 3H03, HTHSCI 3H06 A/B, HTHSCI 3BM6 A/B, HTHSCI 4B06 A/B S, HTHSCI 4D03

IBEHS 4H03 – Research Project

3 unit(s)

A special course of study to be arranged by mutual consent of a supervisor and the student, to carry out experiments, research and/or theoretical investigations. Students may consider this course to advance a project conceived in the Health Solutions Design Projects courses.

One term

Prerequisite(s): IBEHS 3H03; and registration in Level III or above in any Integrated Biomedical Engineering & Health Sciences (iBioMed) Program and permission of the program

Antirequisite(s): IBEHS 3I06 A/B S, CHEMENG 4Y04 A/B, CIVENG 4Z04, COMPENG 4OH4, COMPENG 4OJ4, COMPENG 4OK4, ELECENG 4OH4, ELECENG 4OJ4, ELECENG 4OK4, ENGPYHS 3H04 A/B S, ENGPYHS 4H04 A/B S, IBEHS 3I06 A/B S, MATLS 4K06 A/B, MECHENG 4X04 A/B, HTHSCI 3H03 A/B S, HTHSCI 3H06 A/B S, HTHSCI 3BM6 A/B S, HTHSCI 4B06 A/B S

Course Schedule

- To be arranged by the student enrolled and their Supervisor (and Co-Supervisor where applicable).
- You can expect that, as a 3-unit course, your workload should equate to ~10 hours per week.
- There should be regular meetings between student and supervisor (e.g., biweekly, minimum).

Administrative Contact Information

Location

MDCL 3515

Contact

ibiomed@mcmaster.ca

Course Delivery

[Avenue to Learn](#) will be the online management system for the courses. Through **Avenue**, you will be able to:

- View course-related announcements

Assessments

Assessments will vary by project. It is recommended that the student and Supervisor(s) arrange this in advance of the course beginning. A breakdown of assessments and weightings should be discussed between the student and supervisor and agreed upon prior to the drop-add deadline.

Completion and Submission of Work

It is the student's responsibility to ensure assessments are correctly submitted to the correct location, on time, and in the specified format. **Failure to correctly submit an assessment will result in a mark deduction.**

Use of AI tools in the course.

The use of AI tools is at the discretion of the project Supervisor(s) and should be agreed upon prior to the start of the project.

Important Dates

Fall Term	
Tuesday, September 2	Fall Classes Begin!
Tuesday, September 30	National Day for Truth and Reconciliation (no classes)
October 13 – 19	Fall Reading Week (no classes)
Thursday, December 4	Fall Classes End
December 6 – 19	Fall Term Final Examinations
Winter Term	
Monday, January 5	Winter Classes Begin!
February, 16 – 22	Winter Reading Week (no classes)
Friday, April 3	Good Friday (no classes)
Tuesday, April 7	Winter Classes End
Wednesday, April 8	No classes
One week after the start of Final Exams	Final Work Submissions Due
April 9 – 22	Winter Term Final Examinations
Spring/Summer Term	
Monday, May 4	Classes Begin!
Monday, May 18	Victoria Day (no classes)



Wednesday, July 1	Canada Day (no classes)
Monday, August 3	Civic Holiday (no classes)
Friday, August 7	Classes End
As arranged by instructor in Spring/Summer Term Final Examinations class time	

Communication Policy

Please discuss the best channel of communication with your Supervisor(s). All administrative communications with respect to these courses will be done via email or Avenue to Learn.

Inclusive Environment Statement

We consider this classroom to be a place where you will be treated with respect, and we welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

We will gladly honour your request to address you by an alternate name or gender pronoun. Please advise of this preference early in the semester so that we may make appropriate changes to our records.

McMaster Approved Policy Statements

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online.**

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g.,

use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

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. **It is your responsibility to understand what constitutes academic dishonesty.**

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. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/), located at <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

The following illustrates only three forms of academic dishonesty:

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

On all work submitted for credit by students at McMaster University, the following pledge is either required or implied:

"I understand and believe the main purpose of McMaster and of a university to be the pursuit of knowledge and scholarship. This pursuit requires my academic integrity; I do not take credit that I have not earned. I believe that academic dishonesty, in whatever form, is ultimately destructive to the values of McMaster, and unfair to those students who pursue their studies honestly. I pledge that I completed this assessment following the guidelines of McMaster's academic integrity policy."

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 the following website:

www.mcmaster.ca/academicintegrity.

Academic Accommodations for Students with Disabilities

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

Academic Accommodation for Religious, Indigenous, or Spiritual Observations (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students 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 examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Academic Accommodations for Relief for Missed Academic 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](#)".

- All MSAFs are to be directed to prof1p10@mcmaster.ca. Sending to another email address will delay processing.
- It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

- In the event an MSAF is applied to either the **Graphics Design Final Assessment** or **Computing Final Assessment**, they **will be rescheduled**.

Courses with an On-Line Element

In this course, we will be using **Avenue-to-Learn** and **Microsoft Teams**. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, usernames for the 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.

Reference to Research Ethics

The two principles underlying integrity in research in a university setting are these: a researcher must be honest in proposing, seeking support for, conducting, and reporting research; a researcher must respect the rights of others in these activities. Any departure from these principles will diminish the integrity of the research enterprise. This policy applies to all those conducting research at or under the aegis of McMaster University. It is incumbent upon all members of the university community to practice and to promote ethical behaviour. To see the Policy on Research Ethics at McMaster University, please go to <https://reo.mcmaster.ca/>.

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.

Notice Regarding Possible Course Modification

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to

comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.



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

Information for Laboratory Safety and Important Contacts

This document is for users of iBioMed 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 iBioMed instructional laboratories. This document is required reading for all laboratory supervisors, instructors, researchers, staff, and students working in or managing instructional laboratories in iBioMed. It is expected that revisions and updates to this document will be done continually. At McMaster University, HR maintains Health & Safety information that is also available at https://hr.mcmaster.ca/employees/health_safety_well-being/our-safety/lab-safety/.

Details on Standard Operating Procedures (SOPs), Health and Safety videos and other resources can be found online at the [iBioMed Health and Safety webpage](#).

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.

iBioMed Specific Instructional Laboratory Concerns: For non-emergency questions specific to the iBioMed 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 Béhar-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

iBioMed Lab Technician	Leela Pilli, pillil@mcmaster.ca
iBioMed Instructional Assistant	Parmveer Bola, bolapl@mcmaster.ca
iBioMed Wet Lab Technician	Andrej Rusin, rusina@mcmaster.ca
iBioMed Co-Directors	Dr. Colin McDonald, cmcdona@mcmaster.ca Dr. Michelle MacDonald, macdonml@mcmaster.ca
iBioMed Program Manager	Alexa Béhar-Bannelier, alexa.behar@mcmaster.ca
iBioMed Course Instructor	Please contact your specific course instructor directly