*We recognize and acknowledge that McMaster University meets and learns on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the “Dish with One Spoon” wampum, an agreement amongst all allied Nations to peaceably share and care for the resources around the Great Lakes.*

# BIOCHEM 3A03 – Biochemical Research Practice

# 2024 Fall Term

**Coordinator:**  Staff |  **E-mail:** [bbsug@mcmaster.ca](mailto:bbsug@mcmaster.ca) |  **Office Hours:** By Appointment

## Support Staff

|  |  |
| --- | --- |
| **Name** | **Email** |
| Taylor Gauthier | [bbsug@mcmaster.ca](mailto:bbsug@mcmaster.ca) |

## Course Details

* **Lectures: -** None
* **Lab Work** - students are expected to spend an average of ***8 hours per week***, over one term, in the lab.
  + **“Lab Work” *may* be remote, permitted on a case-by-case basis.** Remote work is suitable only if it follows the structure of a standard project, and involved data generation, analysis, and interpretation. Please email Taylor if you are unsure about your project.

## Course Description

The Department of Biochemistry and Biomedical Sciences considers research to be a vital component of an undergraduate education in Biochemistry. This course offers students the opportunity to gain valuable experience with cutting-edge research.

This course encompasses a research project conducted over one academic term, which can be undertaken in a laboratory under the supervision of a researcher at McMaster University in the Department of Biochemistry and Biomedical Sciences (BBS). Students can also conduct this course in laboratories outside the BBS department, provided that these faculty researchers:

* are currently working at McMaster University
* conduct research in the area of biomedical sciences

Students choosing to take this option must first discuss this with the course coordinator prior to submitting the required course permission form.

Students will embark on a research project designed by the lab supervisor. It is the responsibility of each student to discuss their research project with their lab supervisor.

**Prerequisite(s):** BIOCHEM 2L06 A/B; and registration in an Honours Biochemistry program; and permission of the Department

**Antirequisite(s):** BIOCHEM 3LA3, 3R06 A/B

*May not be taken concurrently with BIOMEDDC 4A15 A/B, BIOCHEM 4F09 A/B, 4T15 A/B, 4Z03, HTHSCI 4R12 A/B.*

*Not open to students with credit or registration in ISCI 2A18 A/B.*

## Course and Learning Objectives

Student initiative, hard work, strong communication and curiosity are some of the driving factors for the thesis course experience. As such, students will gain invaluable insight into both advanced technical skills and transferable skills. The latter refers to time management skills, scientific communication, resilience, perseverance, motivation, initiative, optimism, grit, curiosity, creativity, etc.

## Required Materials/ Resources

* None

## Course Overview and Assessment

### Assessment Overview

**Lab Performance and Progress (70 %) -** Lab performance will be assessed two times throughout the course by the lab supervisor(s) and will include a discussion of this assessment with the student. The lab supervisor will fill out the lab performance 1 and 2 evaluation marking schemes provided. It is recommended that students meet regularly with their supervisor/lab mentor and communicate their progress and ensure course expectations are being met.

**Written report (30%)**

Each student will prepare a written report that makes clear the relevant background, the problem that you are trying to solve, the progress made and analysis of results in the context of the research field. Maximum 20-pages, double-spaced, Times New Roman 12-point font, 2 cm margins. Figures, tables, and references do not count in the page limit and can be added at the end of the document.

**Initial Meeting Form, Safety Form(s) and Acknowledgement of Confidentiality Form (required):**

**Each student must properly complete and submit these forms by the specified due date or they will not be allowed to perform laboratory work.**

Students will meet with their supervisor to complete the “Initial Meeting Form”. Students will also complete mandatory safety form(s) and an acknowledgement of confidentiality. These forms are to be submitted to the A2L assignment folder by the specified due date. Forms will be provided on A2L.

|  |  |
| --- | --- |
| **Lab performance-1 Criteria** | **Lab performance-2 Criteria** |
| * Background knowledge * Laboratory work * Progress/ incorporation of feedback * Time management and commitment | * Data analysis * Laboratory work * Progress/ incorporation of feedback * Time management and commitment |

|  |  |  |
| --- | --- | --- |
| **Assessment/Weight** | **Due Date** | **Assessment Details** |
| **Initial meeting form**  **Safety Training Form**  **Confidentiality form** | Friday Sept. 13, 2024 to Avenue | * Full completion and on-time submission of these forms is a course requirement |
| **Lab Performance 1: 30%** | Friday Oct. 25, 2024 | * Form submitted to Taylor by supervisor |
| **Lab Performance 2: 40%** | Friday Nov. 29, 2024 | * Form submitted to Taylor by supervisor |
| **Written Report: 30%**  **\*Final Exam Equivalent** | Student deadline: Friday Dec 5, 2024 | * Form submitted to Taylor by supervisor by December 13th, 2024 |

\* As a final exam (or equivalent), the McMaster Student Absence Form (MSAF) **cannot** be used. Requests for relief must be submitted via a [Petition for Special Consideration](https://academiccalendars.romcmaster.ca/content.php?catoid=53&navoid=10750#petitions-for-special-consideration).

## Requests for Relief for Missed Academic Term Work

[McMaster Student Absence Form (MSAF):](https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/msaf-mcmaster-student-absence-form/) 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”.

## Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact [Student Accessibility Services (SAS](https://sas.mcmaster.ca/)) at 905-525-9140 ext. 28652 or [sas@mcmaster.ca](mailto:sas@mcmaster.ca) to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [*Academic Accommodation of Students with Disabilities*](https://secretariat.mcmaster.ca/app/uploads/Academic-Accommodations-Policy.pdf) policy.

## 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](https://secretariat.mcmaster.ca/app/uploads/2019/02/Academic-Accommodation-for-Religious-Indigenous-and-Spiritual-Observances-Policy-on.pdf) 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 their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

## Courses with An On-Line Element

***Some courses*** ***may*** use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names 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 a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

## Online Proctoring

***Some courses may*** use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

## 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/app/uploads/Academic-Integrity-Policy-1-1.pdf)*,* located at [https://secretariat.mcmaster.ca/university-policies-procedures- guidelines/](https://secretariat.mcmaster.ca/university-policies-procedures-%20guidelines/)

**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

***Some courses may*** use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to the [McMaster Office of Academic Integrity](https://www.mcmaster.ca/academicintegrity/)’s webpage.

## Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all our living, learning and working communities. These expectations are described in the [*Code of Student Rights & Responsibilities* (the “Code”).](https://secretariat.mcmaster.ca/app/uploads/Code-of-Student-Rights-and-Responsibilities.pdf) 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.

## Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

**Research Ethics** -N/A

## 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.