

COURSE OUTLINE

BIOCHEM 4C03

2021 Winter Term

INSTRUCTOR (s): Daniel Yang; YANG@mcmaster.ca; HSC-4N20A

Office Hours: by appointment

Course Description: Inquiry in Biochemistry

Course Objective:

One objective of the course is to enhance the ability of students to understand scientific findings and methods reported in primary journal articles and to communicate their content in oral presentations. Another key objective is to teach students how to write a grant proposal by building on current knowledge in the scientific literature.

Time of lectures, meetings and student presentations:

There is a single three-hours online session (Zoom/Webex/Teams) every Tuesday from 11:30 am to 2:20 pm. The course starts on Jan 12 and ends on April 6, 2021. The midterm recess occurs between Feb 15th and Feb 21th. No lectures or meetings with the students will occur during the midterm recess. The schedule for the lecture periods serves primarily to reserve a time and place for students to meet with the instructor or teaching assistants. A draft schedule of events and due dates for assignments is shown below (Schedule).

Course Communication:

Communication between the instructor or teaching assistants with the students will occur via Avenue to Learn and email. Students should check their email daily to ensure that they do not miss any events scheduled at dates/times and locations other than those noted in the schedule below.

Course Information and Requirements:

Students will be assigned a TA, who will provide a research topic for each student. Students should identify a recent high-profile full-length publication(s) on their topic. For example, a publication featured in the News and Views section of a high-impact journal such as Science, Nature or Cell is likely to be suitable. Students must obtain approval from their TA for their choice of publication(s) well in advance of their first presentation (see Schedule below). The teaching assistant will subsequently meet with the students to ensure that the student selected appropriate research articles on their assigned topic. The scientific literature associated with the research topic will serve as the foundation for two oral student presentations based on the content of the primary journal article(s).

The initial student presentation will be of an introductory nature, structured along the lines of a scientific abstract, and will set the stage for the second presentation, which will require the students to recount the original findings (results and relevant methods) of the article. The background provided in the Abstract and Introduction and any reviews or original articles cited therein should serve as the foundation for the first presentation. The original figures and tables from the chosen article(s) may be used directly as the content for the second presentation. Students may simplify the figures and tables in the article to highlight points of interest they wish to convey to the audience.

The first presentation should not exceed 10 minutes in duration with 5 minutes for questions and comments from the audience. Audience participation is required. The second presentation should not exceed 20 minutes with 10 minutes for questions and comments from the audience. Generally, a single Powerpoint “slide” will take at least 1 minute to present. Due to time constraints on scheduling, each student presentation will be strictly limited to the periods cited above.

The written grant proposal should be centered on the assigned research topic and must build on the findings (results) of the selected article. The grant proposal should comprise a scientific abstract, an introduction to the field, rationale for the proposed study, a hypothesis, 2-3 specific aims and references. A brief description of the methods to be used for the proposed study should be included in the specific aims section. The course instructor will present a lecture to introduce students to the various components of a scientific proposal and will provide the students with an example of a successful grant application.

In keeping with the new regulations concerning late withdrawal from a course, the grant proposal is considered equivalent to a final exam.

Assessments Overview:

Grade Item	Due Date	Weight (%)
First presentation	Feb 1 by 11:59 pm	15
Second presentation	Mar 1 by 11:59 pm	35
Grant proposal	April 5 by 11:59 pm	50

Students will upload each of each of their presentations and grant proposal as a PDF and send it by email to their teaching assistant by 11:59 pm on the dates identified above. The mark for late upload of the presentations or grant proposal will be reduced by 2.0% for each hour following the due time. Presentations may not be altered after submitting a PDF of the presentation.

Schedule of Events:

January 12: First lecture. The instructor will describe the course objectives, organization and student evaluations.

January 12: Students will be assigned a TA and are encouraged to communicate with their TA as soon as possible.

January 12: Each TA will identify a topic for individual students in their group by this date and communicate the topic title to their assigned students.

January 18: Students will provide their TA with the titles of the article(s) representative of their assigned topic by 11:59 pm. The TA will provide feedback to the students in their group regarding the appropriateness of the selected articles.

Feb 1: Students will email their TA a PDF of the first presentation by 11:59 pm. Feb 2: Student presentations take place this week.

Feb 15 – 21: Midterm Recess

March 1: Students will email their TA a PDF of their second presentation by 11:59 pm March 2 – 5: Student presentations take place this week.

April 5: Students will email their TA a PDF of their grant proposal by 11:59 pm.

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: <http://www.mcmaster.ca/academicintegrity/students/index.html>

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.

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. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

Requests for Relief for Missed Academic Term Work

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 for Religious, Indigenous or Spiritual Observances

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.

Courses with an On-Line Element

In this course we will be using Zoom/Webex/Teams and Avenue-to-Learn for communication with the students. 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 of your email account, then please discuss this with the course instructor and teaching assistants.

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 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.