

Faculty of Science Course Syllabus (Section A)
Department of Biochemistry & Molecular Biology

Scientific Communication in Biochemistry and Molecular Biology I - BIOC5914

Transcript Title: Biochem Communications I
Fall 2023

Instructor(s): Dr. Stephen L. Bearne (Tupper 9J) sbearne@dal.ca
Dr. Aarnoud van der Spoel (CRC C305) spoela@dal.ca
Dr. Shawn Xiong (Tupper 8J-2) shawn.xiong@dal.ca

Office hours: by appointment

Class time: Tuesday from 11:35 – 12:55, beginning September 5
DMNS Halifax - Tupper, G36
DMNB Saint John - Room 221
Departmental Seminars: Mondays 2:30-3:30 – usually Theatre A

Course delivery: In-person, synchronous

Course Description

This course introduces students to a set of transferable skills that are useful in- and outside science. It focuses on different ways of communicating, including teaching, written text, slides used in presentations, and posters that are presented at conferences. Students will become familiar with principles and guidelines for communicating effectively through text, oral, and poster presentations. They will also have opportunities to put these principles into practice.

Course Co-requisites

Enrolment in BIOC9000/9530

Learning Objectives

Through this course, students will:

1. Become familiar with principles for writing non-fiction texts that can be understood in the absence of the writer, and appreciate the concepts of cohesion, coherence, flow, and clarity in writing.
2. Apply writing principles and concepts in various writing practices.
3. Become familiar with principles for (1) building a professional network, (2) preparing posters for presentation at conferences, (3) preparing slides to augment oral presentations, and (4) to deliver oral scientific presentations to peer audiences.
4. Apply their knowledge of presentation principles by (1) giving an oral presentation and (2) appraising scientific presentations and posters.
5. Appreciate the importance of responding appropriately to potential incidents of academic and scientific fraud and become familiar with Dalhousie University regulations covering issues of academic integrity.

6. Discuss seven research-based pedagogical principles based on *How Learning Works*.
7. Practice the research-based pedagogical principles in teaching.
8. Analyze real teaching cases based on the acquired pedagogical knowledge.
9. Reflect/revise one's teaching according to the acquired pedagogical knowledge.

Course Materials

Scientific Writing and Communication - Papers, Proposals, and Presentations by Angelika H. Hofmann (Oxford University Press, 4th Ed.) Paperback (highly recommended): (ISBN 978-0190063283)

This book is available at the Dalhousie Campus Bookstore:

[https://bookstore.dal.ca/CourseSearch/?course\[\]=HS-SUB,HS-F21,BIOC,BIOC5914,&](https://bookstore.dal.ca/CourseSearch/?course[]=HS-SUB,HS-F21,BIOC,BIOC5914,&)

Course Assessment

30% for the TEACHING COMPONENT (Xiong)

- 12% = 3 weekly written reflections on teaching or case study analysis.
- 10% = Synthesis of a teaching related case study or a written essay to debate a controversial teaching statement.
- 8% = Participation including but not limited to attendance, Q&A, and in-class discussion.
 - Detailed instruction for each exercise, including due dates, will be provided in advance during class.

30% for the PRESENTING COMPONENT (Bearne)

- 20% = presentation (10% from instructor, 10% from students)
- 10% = participation (e.g., attendance, participation in critiquing, science questions)

30% for the WRITING COMPONENT (van der Spoel)

The grade will be based on the final submission of each of the writing assignments.

10% for the SEMINAR CRITIQUE COMPONENT (van der Spoel/Bearne)

Critiques of 5 Departmental seminars **must be completed** over the Fall term and submitted by the last day of classes (**December 6, 2022**).

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale:

| | | | | | | | |
|----|----------|----|---------|----|---------|---|---------|
| A+ | (90-100) | B+ | (77-79) | C+ | (65-69) | D | (50-54) |
| A | (85-89) | B | (73-76) | C | 60-64) | F | (<50) |
| A- | 80-84) | B- | (70-72) | C- | (55-59) | | |

Department of Biochemistry & Molecular Biology Policy on missed examinations/mid-terms and assignments:

A student who misses an evaluation component of the course (midterm test, assignment, presentation, lab, etc.) due to illness should, if possible, notify the instructor, course coordinator, or department office either prior to, or within 48 h of the scheduled time or due date for that component. The student must also submit a Student Declaration of Absence Form (through the course Brightspace page or to their instructor via e-mail) within three (3) calendar days following the last day of absence. Special 'make-up' tests (if offered) will normally be written within 7 calendar days after the missed test. Absence for non-medical reasons is not ordinarily acceptable

unless prearranged with the instructor. A missed evaluation component for which no satisfactory arrangement has been made will be given a mark of zero. The Student Declaration of Absence form can only be submitted up to two (2) separate times per course during a term. Students who exceed this limit must inform their course instructor(s) and will be required to register with an Advisor at Student Academic Success (SAS). If students have recurring short-term absences and do not register with SAS, it is at the instructor(s)' discretion to disallow any further Student Declarations and deny alternate coursework arrangements.

Course Content & Schedule for Fall 2023

| | | |
|----------|----|---|
| Sept. 05 | 1 | Introduction: syllabus review (Bearne, van der Spoel, Xiong) scientific and academic integrity (van der Spoel) |
| Sept. 12 | 2 | Teaching: prior knowledge & knowledge organization (Xiong) |
| Sept. 19 | 3 | Teaching: motivation & mastery (Xiong) |
| Sept. 26 | 4 | Teaching: feedback, learning environment, & self-regulated learner (Xiong) |
| Oct. 03 | 6 | Presenting: the 'art' of seminar presentations (Bearne) |
| Oct. 10 | 7 | Presenting: mini-presentations I & critiques (Bearne) |
| Oct. 17 | 8 | Presenting: mini-presentations II & critiques (Bearne) |
| Oct. 24 | 9 | Writing: the importance and benefits of writing well (van der Spoel) |
| Oct. 31 | 10 | Writing: words and phrases (van der Spoel) |
| Nov. 07 | 11 | Writing: word location and emphasis (van der Spoel) |
| Nov. 14 | 12 | Study Break |
| Nov. 21 | 13 | Writing: paragraphs – coherence and cohesion (van der Spoel) |
| Nov. 28 | 14 | Writing: voice, tense, sentence length, and punctuation (van der Spoel) |
| Dec. 05 | – | No class (Monday classes) |

Course Organization:

The **TEACHING COMPONENT** is organized around seven pedagogical principles — each a gem that is based on research evidence from the science of learning and the science of instruction. The principles concern the role of the student's prior knowledge, motivation, and developmental level, as well as opportunities for the student to practice, receive feedback, and learn to become a self-directed learner. Classes are carried out in the form of case studies, in which participants discuss, analyze, and eventually solve these real cases according to the principles. Assessments emphasize on the individual growth as a competent teacher and are spaced out weekly, including reflections, case studies, and professional discussion.

The **PRESENTING COMPONENT** focuses on the development of presentation skills for short scientific seminars and posters. Two formal lectures will be presented that emphasize the 'art' of scientific communication. Students will prepare 10-min mock Honors presentations that will be presented and constructive feedback provided in class. A sampling of posters will be examined to illustrate effective (and not so effective) presentation styles if time permits.

The **WRITING COMPONENT** introduces students to principles of composition and style that are helpful for writing with clarity. Each week, students will be assigned short style exercises and writing tasks. On the basis of detailed feedback, students will have the opportunity to revise their writing through multiple rounds of revision.

The **SEMINAR CRITIQUE COMPONENT** runs throughout the term and aims to provide students with the opportunity to evaluate seminars by experienced presenters who have been invited to present in the Departmental Seminar program. By critiquing the seminar presentations of others, the student will learn how to fine-tune their presentations to maximize clarity and promote the flow of ideas.

University Policies and Statements

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit or e-mail the Indigenous Student Centre at 1321 Edward St or elders@dal.ca. Additional information regarding the Indigenous Student Centre can be found at: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: <https://www.dal.ca/about-dal/internationalization.html>

Academic Integrity

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre (https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (<https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html>)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: <http://www.dal.ca/cultureofrespect.html>

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner - perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. The full Code of Student Conduct can be found at: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates):

http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol: https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

Dalhousie Grading Practices Policies: https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): <https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html>

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Indigenous Connection: <https://www.dal.ca/about-dal/indigenous-connection.html>

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803: <https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf>

Black Student Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre.html

South House Sexual and Gender Resource Centre: <https://southhousehalifax.ca/about/>

LGBTQ2SIA+ Collaborative: <https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html>

Dalhousie Libraries: <http://libraries.dal.ca/>

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Dalhousie Student Advocacy Services: <https://www.dsu.ca/dsas?rq=student%20advocacy>

Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Human Rights and Equity Services: <https://www.dal.ca/dept/hres.html>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

Safety

Biosafety: <http://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <http://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Laser Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety/laser-safety.html>