

Course Outline

Instruction Team

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Student Hours

- Individual assistance is always available by appointment: talk to us.

Teaching Assistant

- N/A

Location

- **E2-164 EITC**
Tues 10:00 - 11:15 AM
Thurs 10:00 - 11:15 AM

Contact Hours

- 3 credit hours
- Lectures:
3 hours x 12 weeks = 36 hours

Prerequisites:

- Registered in the Biosystems Engineering program.

Course Website:

<http://umanitoba.ca/umlearn>

Traditional Territories Acknowledgement

The University of Manitoba campuses are located on the original lands of the Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

BIOE 7290 Biosystems Engineering Seminar

Fall 2023

Course Description

Oral and written presentations of scientific research are discussed. Students are expected to actively participate in weekly seminars and to present two seminars both orally and in writing.

*This is a required course for M.Sc. students in Biosystems Engineering. Students in the M.Eng. program may take the course, but it is not required for the M.Eng. program.

Course Objectives

Graduate students are expected to communicate the results of their research both in written form (for theses, research papers, non-technical reports) and orally (conference presentations, thesis defense). This course will provide students with instructions to improve their abilities in each of these areas:

1. Writing a literature review.
2. Writing a non-technical summary of scientific work.
3. Critiquing scientific writing to achieve an effective technical paper.
4. Making an effective oral presentation.
5. Making an effective poster

Class Schedule

- Week 1:** **September 7:** Course overview, orientation to Department of Biosystems Engineering, managing stress and being a successful graduate student.
- Week 2:** **September 12 & 14:** Direct writing strategies; writing effective project summaries for a non-technical audience (Ch. 26)
- Week 3:** **September 19 & 21:** Strategies for creating good posters (Ch 28) and presenting data
- Week 4:** **September 26 & 28:** Strategies for making and delivering effective oral presentations (i.e., research seminars, technical conferences, thesis defense) (Ch 27); forms of scientific misconduct and plagiarism (Ch 5); citations (Ch 15)
- Week 5:** **October 3 & 5:** Methods for documenting literature that is reviewed (i.e., annotated bibliography); the writing process
- Week 6:** **October 10 & 12:** Poster presentations
- Week 7:** **October 17 & 19:** Fundamentals of writing an effective technical paper: overall organization (Ch 4) and the purposes of each section: introduction (Ch 10), materials & methods (Ch 11)
- Week 8:** **October 24 & 26:** Strategies for writing an effective literature review (Ch 23); Fundamentals of writing an effective technical paper: results (Ch 12)
- Week 9:** **October 31 & November 2:** Fundamentals of writing an effective technical paper: discussion, conclusions, limitations (Ch 13), the abstract (Ch 9)
- Week 10:** **November 7 & 9:** The peer review process (Ch 6, 21, 22 & 40)
- Week 11:** **November 14 & 16: No class (Fall Break)**
- Week 12:** **November 21 & 23:** Practice presentations and peer feedback; research management
- Week 13:** **November 28 & 30:** Technical presentations by students (literature review topic)
- Week 14:** **December 5 & 7:** What to expect when attending and presenting at a technical conference; course wrap-up

Textbook

Suggested Reference Book: Day, R.A. and B. Gastel. 2011. How to Write and Publish a Scientific Paper, 7th Ed. Greenwood Press, Santa Barbara, CA.

Lecture notes will be posted on the UM Learn portal.

Important Dates

- **Early Withdrawal Deadline**
September 19, 2023

- **National Day for Truth and Reconciliation**
Mon. Oct. 2, 2023
No classes or examinations

- **Thanksgiving**
Mon. Oct. 9, 2023
No classes or examinations

- **Fall Term Break**
Nov. 13-17, 2023
No classes or examinations.

- **Remembrance Day (observed)**
Mon. Nov. 13, 2023
No classes or examinations.

- **Voluntary Withdrawal Deadline**
November 21, 2023

- **Last Day of Classes**
Mon. Dec. 11, 2023

Grading Scale

Letter Grade	Percentage out of 100
A+	92-100
A	85-91
B+	78-84
B	72-77
C+	66-71
C	60-65
D	50-59
F	Less than 50

Assignment Feedback

Students can expect to receive graded assignments within two weeks of their submission.

Late Submission Policy

Assignments submitted after the due date will be docked 10% per day.

Referencing Style

Students are expected to follow the citation style that is used by the *Canadian Biosystems Engineering* journal when citing references in course assignments.

Evaluation

Assignment	Allocation	Description	Due Date
Non-technical Summaries	10%	There are many instances where it is necessary and beneficial to explain technical findings in non-technical language to effectively convey the importance of technical findings to the general public. Students will prepare two non-technical summaries: i) a one-paragraph non-technical summary of an undergraduate thesis project and ii) a one-paragraph non-technical summary of a research article recently published by a professor in the Department of Biosystems Engineering.	Week 4 Sep 26
Poster Presentation	10%	Students will design an academic poster that presents the information from a published paper. They will then give a short (5-minute) oral presentation of that poster to the course instructors and their classmates. Note: Students will be given several papers from which to choose to enable them to select a paper that aligns with their area of interest/research.	Week 6 Oct 10&12
Annotated Bibliography	10%	Students will be expected to select a topic related to the discipline of Biosystems Engineering (preferably related to the area of the proposed research for MSc students), find 5 papers related to their chosen topic, and prepare an annotated bibliography summarizing the content of the 5 papers using the specified format.	Week 8 Oct 24
Literature Review	20%	Using the information from the 5 papers reviewed as part of the annotated bibliography assignment (or additional sources if necessary), students are required to write a 1-page (single-spaced) literature review that culminates with an unanswered research question or issue that has not been resolved by prior research. In essence, the literature review is used to identify a future research objective.	Week 10 Nov 9
Paper Critique	20%	Students will be given a draft of a technical paper that has not yet been published, and without an abstract. Students will critique the paper to identify i) aspects of the paper that have been written effectively and ii) aspects of the paper that could be improved based on the fundamentals of writing an effective technical paper that were discussed in class. Finally, students will write an informative abstract for the paper. Note: Students will be given several papers from which to choose to enable them to select a paper that aligns with their area of interest/research.	Week 12 Nov 21
Oral Presentation	10%	Prepare a 10 min presentation using PowerPoint describing the information gained during the literature review that was conducted. Prior to each presentation, presenters will be required to submit 3 key points to be conveyed by the presentation. Your presentation will be evaluated by the course instructor.	Week 13 Nov 28&30
Evaluation of Oral Presentation	10%	Evaluate the presentations made by your peers to: i) assess how well the presenter conveyed the 3 key points, ii) identify constructive feedback to enable the presenter to improve the presentation, and iii) identify presentation strategies that were well done by the presenter which could be applied to your own presentations. Feedback will be shared with the presenter.	Week 13 Nov 28&30
Course Reflection	10%	Students are required to submit a written document in which they reflect on lessons learned throughout the course. Specifically, the written reflection should include: i) an assessment of their successes and challenges in the course, and ii) their key takeaways from the course, and why those key takeaways are important to their future academic and/or professional work	Week 14 Dec 7

Academic Integrity

Students are expected to conduct themselves in accordance with the highest ethical standards of the Profession of Engineering and evince academic integrity in all their pursuits and activities at

the university. As such, in accordance with the *General Academic Regulations on Academic Integrity*, students are reminded that plagiarism or any other form of cheating in examinations, term tests, assignments, projects, or laboratory reports is subject to serious academic penalty (e.g., suspension or expulsion from the faculty or university). A student found guilty of contributing to cheating by another student is also subject to serious academic penalty.

Requirements/Regulations

- Please copy the Instruction Team in all emails (Instructors and Teaching Assistants). All email communication must conform to the Communicating with Students university policy.
[!\[\]\(746d018fdf6ab02bf5fb7681133e8b29_img.jpg\) *Communicating with Students*](#)
- As the Instruction Team, we will do our best to respond to all emails **within 48 hours during working hours** (8:30 AM – 5:30 PM Monday thru Friday). Ex. A Friday night email may not be responded to until the following Tuesday.
- Self-declaration forms may be completed for missed tests, exams, or assignments during short-term absences (≤ 72 hours) for extenuating circumstances. This form cannot be used for planned absences like vacations. It is also not to be used for longer-term absences, or ongoing circumstances (e.g., Authorized Withdrawals, Leaves of Absence, or other accommodations), which will still require additional documentation.
[!\[\]\(5daa6eee1904cb6b9d765700250de764_img.jpg\) *Self-Declaration Form for Brief or Temporary Absence*](#)
[!\[\]\(d72e437c7cc5947bc0b147aba6602563_img.jpg\) *Self-Declaration Policy for Brief or Temporary Absences*](#)
- It is the responsibility of each student to contact the instructor in a timely manner if he or she is uncertain about his or her standing in the course and about his or her potential for receiving a failing grade. Students should familiarize themselves with the University's *General Academic Regulations*.
[!\[\]\(0d2a89e6d0cbcd8e0459b972b9332401_img.jpg\) *General Academic Regulations*](#)
[!\[\]\(cdcd8a42e5993b465235781ccc1c8555_img.jpg\) *Engineering Academic Regulations*](#)
- Students should be aware that they have access to an extensive range of resources and support organizations. These include Academic Resources, Counselling, Advocacy and Accessibility Offices as well as documentation of key University policies e.g., Academic Integrity, Respectful Behaviour, Examinations, and related matters.
[!\[\]\(c0c9434f3698c901303014555ccb5687_img.jpg\) *Supplemental Resources*](#)

Retention of Student Work

Students are advised that copies of their work submitted in completing course requirements (i.e. assignments, laboratory reports, project reports, test papers, examination papers, etc.) may be retained by the instructor and/or the department for the purpose of student assessment and grading. This material shall be handled in accordance with the University's *Intellectual Property Policy* and the protection of privacy provisions of *The Freedom of Information and Protection of Privacy Act (Manitoba)*. Students who do not wish to have their work retained must inform the Head of Department, in writing, at their earliest opportunity.

Copyright Notice

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[!\[\]\(e474458956c9a37fbf9586ddb60a7fa1_img.jpg\) *Copyright Office*](#)