ENGL 193
Communication in the Life Sciences
Revised May 5th, 2020

Instructor: Dr. George Lamont, Co-Developer: Dr. I-San Chan
Class hours and location:
• Section 1: Online

Email: glamont@uwaterloo.ca.
Office hours:
• UW Skype: Find me as “George Lamont” at glamont@uwaterloo.ca.
• Need another time? Just ask. We’ll set something up.
• Message me by Skype or e-mail to chat or arrange a chat.

Office location: Hagey Hall (HH) #156

Course Description
In this course you will learn about effective written, oral, and visual communication in the life sciences. You will have the opportunity to shape these communication skills through iterative design processes that emphasize attention to your audience, the purpose of your communications, and student agency. You will work individually and collaboratively to craft messages for internal and external audiences, including scientists, government stakeholders, affected communities, or broader publics. You will learn a variety of genres such as research reports, grant proposals, conference abstracts, conference posters, public talks, blog posts, and podcasts. Overall, this course will help you enhance your capacity to conduct research and report research findings, communicate ethically, and thereby effect important change.

Learning Outcomes
Specifically, by the end of the course, learners should be able to do the following:
1. design, draft, and persuasively deliver scientific communications to expert and non-expert audiences;
2. justify decisions about the language, content, and genre used when communicating scientific information;
3. practice collaboration and peer review in support of iterative communication design processes, including revision;
4. practice research processes to find, assess, document, incorporate, and cite research resources and communicate research findings;
5. describe and appraise the purposes and ethical concerns of science communication.

Required Textbook Reading:
# Course Assignments and Requirements

**Assignment and Evaluation Overview**

1. Scientific Process Analysis 15%
2. Article analysis: Introductions to Science Articles 15%
3. Poster presentation 20%
4. Research review presentation 15%
5. Scientific research literature review 20%
6. Contributions (details below) 15%

* There is no exam for this course 100%

## Individual-Only Work

<table>
<thead>
<tr>
<th>Individual-Only Work</th>
<th>Value</th>
<th>Group Work</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular-structure guide</td>
<td>15%</td>
<td>Group analysis of an introduction</td>
<td>15%</td>
</tr>
<tr>
<td>Scientific literature review</td>
<td>20%</td>
<td>Poster + group presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Research review presentation</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions (details below)</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>65%</strong></td>
<td><strong>Total:</strong></td>
<td><strong>35%</strong></td>
</tr>
</tbody>
</table>

**How and Where to Submit Written Assignments**

- Electronic format: Microsoft Word .docx format or PDF, online through LEARN.
- Paper format is accepted as an alternative, but electronic is preferred.
- All physical assignments must be put personally in my hands to be counted for grading.

**Assignment Project Phases: How They Fit Together**

Assignments in this course all build on your project idea, and form four stages of how you would undertake a project in the real world:

1. **Phase 1: Introduce**
   - 1. Process Analysis
   - 2. Introductions

2. **Phase 2: Structure**
   - 3. Poster presentation

3. **Phase 3: Research**
   - 4. Research Presentation

4. **Phase 4: Propose**
   - 5. Literature Review
   - 7. Contribution to colleague development
What will these assignments require you to do?

Assignment #1: Scientific process analysis (minimum 2 pages)
You will analyze documentation for a real scientific process, record the process of conducting this scientific work, develop a draft of a document to explain this method to other readers, test this document for its effectiveness, and then submit it for evaluation.

Assignment #2: Analysis of an introduction, group presentation (~10 minutes).
You will apply your learning of the Swales model of scientific introductions from peer-reviewed research to examine the introduction from a recent peer-reviewed article in the sciences. Then, you will work with a group to design a highly instructive presentation in which you report how and where the article applies the Swales model and synopsize the work and contributions of the article.

Assignment #3: Poster and group presentation
Creating a poster about a research project is an essential step that researchers must take in order to communicate the value of their work to important stakeholders in their fields. Science conferences emphasize poster sessions and award prizes, which can translate into extremely valuable attributes in your budding career. In this assignment, your group will translate the article you presented in the “Introductions” assignment into a highly professional, realistic conference poster, and your group will present this poster online and answer questions about your research.

Assignment #4: Research-review presentation (maximum 10 minutes)
A natural and necessary part of the research process is a proposal to justify work. This usually includes some kind of presentation to stakeholders to explain the background of a topic, the unresolved problems with our understanding of the topic, a survey of other attempts to address and resolve one or more of those problems, and a proposed plan to investigate a problem in a realistic and promising way. In this presentation, you will convert your literature review in a concise presentation that demonstrates the motivation for a research project and then explains the current state of knowledge about this issue. You will explain the limitations of current knowledge and suggest some possible future activities that you or other researchers could do to advance scientific knowledge about your chosen issue. Your classmates will ask analytical questions and be graded for contributions on the quality of these questions.

Assignment #5: Scientific research-literature review (minimum 6 pages)
The word “literature” here refers entirely to reporting past science research, nothing to do with the study of “literature.” In this assignment, you will produce a clearly structured “literature review,” in accordance with course teaching, in which you provide a thorough and logical review of past scientific research about a topic that you will choose to propose as an original research project later in the course.

Assignment #6: Contributions (artifacts and rubrics, throughout course)
Scientists work in teams to review each other’s work and suggest improvements. You will do the same. To do so, you must contribute to our common lessons in this training,
and you must participate professionally and vigorously in all class activities. I will use rubrics or artifacts to grade you for your participation in some in-class activities. I will also evaluate your responses in our lessons. You can earn contribution grades in the following ways:

1. **Smaller tasks in classes to show your learning**: you complete worksheets and small quizzes to demonstrate that you have learned the analytical skills taught in the course.
2. **Class discussion**: you regularly and consistently show that you have done the readings by volunteering insights and answering questions.
3. **Demonstrating completed readings** on readings quizzes, which I will give at my discretion if I believe that readings are not being completed.
4. **Professional courtesy**: You promote participation by others by giving others time to speak, and showing respect for others’ opinions or difficulties.
5. **Reviewing others’ work**: During peer-editing activity, you constructively and carefully apply course content to help colleagues improve their work to a professional level.
6. **Helping others’ succeed**: In group activities, you ensure others have a chance to participate. You include quiet or anxious team members. You do not complete the work for others. You lead helpfully, but you do not seize control of a project or condescend to other team members.
# Course Schedule

The following schedule is tentative and may change to suit class needs. Additional readings may be posted to LEARN, and you will be responsible for these.

<table>
<thead>
<tr>
<th>#</th>
<th>Date</th>
<th>Lesson</th>
<th>Readings</th>
<th>Assignments</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Unit 1: Writing Scientific Concepts for Multiple Audiences</strong></td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>M, May 11th</td>
<td>Introduction, office hours, diagnostic assignment for contributions grade.</td>
<td>Get the textbook!</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Th, May 14th</td>
<td>Developing scientific interests in education and research</td>
<td>Get the textbook!</td>
<td></td>
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<tr>
<td>3</td>
<td>M, May 18th</td>
<td>Documenting scientific processes</td>
<td></td>
<td><strong>Assignment #1 assigned.</strong></td>
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<tr>
<td>4</td>
<td>Th, May 21st</td>
<td>Evaluating process documents in scientific writing</td>
<td>Chapter 12: Materials and Methods</td>
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<td></td>
<td></td>
<td><strong>Unit 2: Scientific Communication with the Swales CARS Model</strong></td>
<td></td>
<td><strong>Assignment #1 DUE: Process Analysis.</strong></td>
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<tr>
<td>5</td>
<td>M, May 25th</td>
<td>The Swales model of introducing scientific research</td>
<td>Chapter 11: Introductions</td>
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<tr>
<td>6</td>
<td>Th, May 28th</td>
<td>Analysis of the Swales model in peer-reviewed research</td>
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<td><strong>Assignment #2 assigned.</strong></td>
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<tr>
<td>7</td>
<td>M, Jun 1st</td>
<td>Communicating the Swales model to scientific audiences</td>
<td>Chapter 24: Innovation</td>
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<td></td>
<td></td>
<td><strong>Unit 3: Structuring Scientific Reports as Scientists Actually Do</strong></td>
<td></td>
<td><strong>Assignment #2 DUE: Swales-analysis presentation.</strong></td>
</tr>
<tr>
<td>8</td>
<td>Th, Jun 4th</td>
<td>The IMRaD model of scientific-research documents &amp; abstracts.</td>
<td>Chapter 15: Abstracts</td>
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<tr>
<td>9</td>
<td>M, Jun 8th</td>
<td>Converting scientific research into poster presentations</td>
<td>Chapter 29: Posters and Conference Abstracts</td>
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</tbody>
</table>
10. **Th, Jun 11th**  Constructing poster presentations in collaborative research: group work  Chapter 9: Figures

**Assignment #3 assigned.**

11. **M, Jun 15th**  Finding reliable sources to understand existing knowledge and uncover gaps

12. **Th, Jun 18th**  Making your real-life experiences give you an EDGE in the scientific job market.

13. **M, Jun 22nd**  Reporting results in scientific research  Chapter 13: Results

14. **Th, Jun 25th**  Discussions in scientific research, lab-report analysis: article analysis  Chapter 14: Discussion

15. **M, June 29th**  Communicating research to diverse audiences with poster presentations

**Unit 4: Learning the Landscape of Scientific Research**

16. **Th, July 2nd**  Recording and organizing secondary research: the precis  Chapter 8: References and Plagiarism

**Assignment #4 assigned.**

17. **M, July 6th**  Writing a precis about a source relevant to your project

18. **Th, July 9th**  Precis peer reviews

19. **M, July 13th**  Justifying scientific work with the research-literature review

20. **Th, July 16th**  Examples of real scientific literature reviews  Chapter 8: References and Plagiarism

**Assignment #4 DUE: Research Proposal Presentation**
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. M, July 20th</td>
<td>Write your literature-review assignment</td>
</tr>
<tr>
<td>22. Th, July 23rd</td>
<td>Write your literature-review assignment</td>
</tr>
<tr>
<td>24. Th, July 30th</td>
<td>Getting an EDGE in scientific job markets.</td>
</tr>
<tr>
<td>F, Aug 7th</td>
<td>All overdue work due. No late submission will be accepted after this date.</td>
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* No final examination in this course.
**Important Dates: Travel plans NOT accepted for missed deadlines.**

<table>
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<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Lectures begin:</td>
<td>Monday, May 11&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>Last day to add a class:</td>
<td>Monday, May 25&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Last day to drop, no penalty:</strong></td>
<td>Monday, June 1&lt;sup&gt;st&lt;/sup&gt;</td>
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<tr>
<td>UW holiday (<strong>Canada Day</strong>):</td>
<td>Wednesday, July 1&lt;sup&gt;st&lt;/sup&gt;</td>
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<tr>
<td>Final exam schedule published:</td>
<td>Wednesday, June 10&lt;sup&gt;th&lt;/sup&gt; (approximate)</td>
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<tr>
<td><strong>Last day to drop, receive a WD:</strong></td>
<td>Tuesday, July 21&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lectures officially end:</td>
<td>Wednesday, August 5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Last day to drop, receive a WF:</strong></td>
<td>Thursday, August 6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Final assessment begins:</td>
<td>August 7&lt;sup&gt;th&lt;/sup&gt; (no exam in this course)</td>
</tr>
<tr>
<td>Final assessment ends:</td>
<td>August 15&lt;sup&gt;th&lt;/sup&gt; (no exam in this course)</td>
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**Terms:**

1. “Drop, no penalty”: no record of the course appears on your transcript.
2. “WD”: this means the word “Withdrawn” will appear on your transcript. This will let readers know that you attempted the course but decided to leave the course.
3. “WF”: this means “withdrew/failure.” This will let readers know that your withdrawal constitutes a failure in the course. This course will be calculated as a grade of 32% and will be included in your overall grade average.
4 Course Policies

Equipment you need:
- Your note-taking methods: paper/pencils, laptop, etc.

Professional Behaviour:
1. E-mail: all e-mail must come from your official uwaterloo.ca address. You must have a specific subject line that begins with “ENGL 193.” Use a professional salutation to greet me, write a specific message, and sign your name as you would complete a letter.

Late work, missed work, grade concerns, “incomplete” courses
- Extension requests: You must request an extension 48 hours or more before a due date, and provide a reasonable justification, subject to verification by me.
- Late submissions: 5% penalty per day unless the late submission is justified by medical documentation.
- Late/absent for presentations: 5% per day while the presentations are still being delivered. Once each presentation’s phase is complete, you will not be able to submit the presentation for grading.
- Missed tests, quizzes, contributions: If your absence is supported by medical documentation, your grade will be re-weighted to your other quizzes or contributions. Otherwise, you will receive a grade of 0 for the quiz or contribution.
- No “incomplete courses”: I will not grant an “incomplete course”. All course work is due by the final day of lectures (December 3rd).
- Grade challenges: You may re-submit an assignment for regrading only if you provide a detailed letter explaining why the concepts and criteria of the course justify a different grade. I do not accept any requests to challenge a grade while I am returning any papers in class.
5 Official University Policies

Cross-listed course (requirement for all Arts courses): Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

Academic Integrity and Plagiarism—Official Policy

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the UWaterloo Academic Integrity webpage and the Arts Academic Integrity webpage for more information.

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline. For typical penalties check Guidelines for the Assessment of Penalties.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4. When in doubt, please be certain to contact the department’s administrative assistant who will provide further assistance.

Appeals: A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 - Student Appeals.

Using Turnitin in this Course

Text matching software (Turnitin®) will be used to screen assignments in this course. This is being done to verify that use of all material and sources in assignments is documented. Students will be given an option if they do not want to have their assignment screened by Turnitin®. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin® in this course.
Services and Additional Support

There are services here that will help you and protect your privacy. *Use them.*

Accommodations for Students with Learning Challenges
If you have any concern about a learning challenge or learning disability, please feel free to consult with me about how to support you. You may also wish to register with the AccessAbility Services office. This office is located on the first floor of the Needles Hall extension (1401), and collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term. [https://uwaterloo.ca/accessability-services/](https://uwaterloo.ca/accessability-services/)

Counselling And Support Services
1. Counselling Services provides support free-of-charge and protects your privacy. Call them at 519-888-4567 ext. 32655, or find them at [https://uwaterloo.ca/counselling-services/](https://uwaterloo.ca/counselling-services/).
2. MATES: one-to-one peer support program offered by Federation of Students (FEDS) and Counselling Services: [https://feds.ca/feds-services/uw-mates](https://feds.ca/feds-services/uw-mates)
3. Health Services Emergency service: located across the creek form Student Life Centre.
4. More: [https://uwaterloo.ca/arts/get-mental-health-support-when-you-need-it](https://uwaterloo.ca/arts/get-mental-health-support-when-you-need-it)

Student Success Office
The Student Success Office also provides support free-of-charge and protects your privacy. This office provides academic and personal development services, resources for international students, as well as study abroad and exchange support. They are located at South Campus Hall, second floor. Office hours: Monday, Wednesday and Friday, 8:30 a.m. - 4:30 p.m.; and Tuesday and Thursday, 8:30 a.m. - 6:00 p.m. [https://uwaterloo.ca/student-success/](https://uwaterloo.ca/student-success/)

The Writing and Communication Centre
The Writing and Communication Centre works with students as they develop their ideas, draft, and revise. Writing and Communication Specialists offer one-on-one support in planning assignments, synthesizing and citing research, organizing papers and reports, designing presentations and e-portfolios, and revising for clarity and coherence. You can make multiple appointments throughout the term, or drop in at the Library for quick questions or feedback. To book a 50-minute appointment and to see drop-in hours, visit [www.uwaterloo.ca/writingand-communication-centre](http://www.uwaterloo.ca/writingand-communication-centre). Group appointments for team-based projects, presentations, and papers are also available.

Please note that communication specialists guide you to see your work as readers would. They can teach you revising skills and strategies, but will not change or correct your work for you. Please bring hard copies of your assignment instructions and any notes or drafts to your appointment.