Instructor
Instructor: Evelyn (Eve) Deshane
Office: PAS 2216
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Classroom: STC 3014
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If contacting by email, include a relevant subject and a short, clear request. Expect a reply by the end of the next business day

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.

Course Goals and Learning Outcomes
Communication is essential for scientists, and scientists communicate in many different ways for many different audiences. In this course we will introduce you to a variety of ways scientists communicate, giving you the basis to begin sharing the importance of science in more tailored, concise and effective messaging.

Upon completion of this course, students should be able to:

A. design, draft, and persuasively deliver scientific communications to expert and non-expert audiences;
B. justify decisions about the language, content, and genre used when communicating scientific information;
C. practice collaboration and peer review in support of iterative communication design processes, including revision;
D. practice research processes to find, assess, document, incorporate, and cite research resources and communicate research findings;
E. describe and appraise the purposes and ethical concerns of science communication.
**Required Text(s):**

- a popular science book of your choice (see attached list at the end)
- Other Readings Available on LEARN

**Recommended Text**

*Kitty Genovese* by Kevin Cook; any edition of this book is fine. It is the class book that will be used as an example for the finalized project. I will be asking you to read 2-4 chapters from it at the very least. Some copies are available in the bookstore, but you can also use an e-book as well.

**Course Requirements and Assessment**

In this course a passing grade is 50%. You will need to complete the following assignments and activities, and due to the importance of revision and process in writing and communication design, there is no exam.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Participation and Field Notes</td>
<td>30%</td>
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<tr>
<td>Library Quiz</td>
<td>5%</td>
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<tr>
<td>Project Report</td>
<td>30%</td>
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<tr>
<td>Grant Proposal</td>
<td>15%</td>
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<tr>
<td>Presentation</td>
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<tr>
<td>Poster</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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If you miss 5 or more classes without first discussing your situation with the professor, you will receive a failing grade in the course overall. This is because much of the writing and revision process is conducted in-class, and you are also expected to participate in peer review / editing sessions.

Here is the perhaps strange thing about this course: every assignment is going to be the same narrow topic. The trick is you’re going to present that topic to a bunch of different audiences. It might to other scientists, it might be to non-scientists who are just interested in learning about your research, or it might be to people who will give you money to complete your research. I have provided a list of Approved Books so select from on a separate page. We will also be going through one book (Kitty Genovese by Kevin Cook) together, so that you will get a sense of what's expected for each assignment in a practice run before you submit your own version.

**Participation / Field Notebook**

Participation in this class will be made up of a combination of typical class attendance, participation in oral discussions, group work, demonstrations, and writing exercises in a "Field Notebook." Building strong writing skills demands frequent practice, both in speaking about and writing about your ideas and the ideas of others. I also believe it means practicing writing in a traditional way—ie with pen and paper. Your Field Notebook will be written on paper and you will use pen/pencil to complete it; no electronic or digital devices are permitted for this assignment. Each week there will be at least one response required that will be written about in the Field Notebook, but there will also be opportunities to add more (such as keeping notes from your own book, class discussions, lecture notes). Bare minimum effort will result in a bare minin grade; immense attention to detail could result in a 5% bonus. Choose wisely and carefully how much effort you will put into this aspect of your grade overall, knowing that it will most likely be the foundation to all other assignments. The Field Notebooks will not be graded for grammar/spelling/syntax, but for completeness, seriousness, and whether or not
Instructions were followed. In addition to the Field Notebooks, you must also contribute meaningfully to the class—but that meaning is flexible and can be demonstrated in numerous ways.

Each week, the class will be divided into “theory” sessions and “practice” sessions. What this means is that every Tuesday, your attendance is required in-class for a lecture (which might involve other interactive exercises) where we will go over the reading for that week and the topics to cover. The readings are laid out week by week in the schedule and expected to be completed before class. Arrive prepared with the readings complete and your field notebook for possible exercises. Each Thursday class will involve a writing exercise—or something more dynamic like a workshop or scavenger hunt—in order to explore and demonstrate the knowledge explored on the Tuesday class. Any questions about this format, please do not hesitate to ask me. I think writing and learning are dynamic and should involve a mix of the traditional class setting, as well as real-world exploration—especially for the sciences! Consider each Thursday a chance to observe the world through the lens of a scientist, and then communicate your findings to yourself first (in your Field Notebook) and then to me in larger and more official class assignments. There will be two times when you hand in your Field Notebook so I can verify that these exercises are being completed and they are being taken seriously. Each date is marked in the calendar.

Please note: if there are mobility or ability issues associated with completing the notebook by hand or participating in the Thursday classes, please do not hesitate to contact me individually and we can work out alternative arrangements. If I do not hear from you, I will assume that you decided to not follow the instructions, and your grade will reflect that choice.

Library Quiz

One Thursday class will be devoted to a library exercise and lecture where a science librarian will come in and take us all through a demonstration. Attendance is mandatory this Thursday. Following the class, there will be a short quiz on LEARN and I expect it to be completed within three days in order to make sure that everyone understands the library's overall structure/layout and its purpose in research. No make-ups will be held for this quiz.

Project Report

This is a large assignment that will be completed in parts with various prompts for completion, though the entire project itself must be handed in together by the final due date. The project consists of picking a popular science book from the Approved Book list and using it as your core text and research area for the rest of the term. Choose wisely and carefully; there will be no changing of your book and no doubling up. Authors marked with asterisks* have numerous books that could also be used; if you'd like to select your own title that is not on this list, you must have it approved by me before the final due date of choice. After your decision has been made, you will be required to complete a research project on this book which will help you understand and summarize its content and research field. This project consists of 1) an abstract on your chosen book 2) a literature review for your chosen book, including three academic sources with an annotated bibliography for each entry 3) a paraphrase and quotation assignment consisting of three separate sections of your book and 4) a short 50-75 word biography of yourself as a researcher. There will be benchmarks to each part of this assignment in the course calendar, though the entire projected will be submitted all at once to me via LEARN. The exact due date for the *entire* project is listed in the week by week calendar.
Abstract
You will write an abstract in your own words for the book. This is for the entirety of the book in question, meant to engage with big themes and important research contributions. It should ideally be written after you have read and examined the entire work. It should be no longer than 350 words and no less than 250 words. There will be separate keywords that encapsulate these themes, approximately 5-8 in total. (Note: a keyword can be more than one word. For example, "true crime" is one keyword because it is one total theme; "gender" and "sex" are two separate keywords because they are two separate themes.

Literature Review
Your book is an original contribution to research, but it is also drawing on previous research articles and academic contributions. Find three separate articles/books that the author has drawn on to form their current conclusions; ideally stick with peer-reviewed academic articles or books, and not primary research. Read these articles. Summarize them in your own words; their key ideas and main components, along with how the author has used them in their own research. Format the bibliographic citation for these three texts and add the summary underneath them to form an annotated bibliography.

Paraphrase and Quotation
Find three chapters of your book (ideally not the intro or conclusion) and summarize them in your own words (~200 words). Then pull out three direct quotations and integrate them into a sentence of your own writing, along with paraphrasing this information. Include correct bibliographic and works cited information.

Student Researcher Bio
Write yourself a biography in 50-75 words. Be sure to include your name, degree title, and areas of research interest. Remember, a biography helps people identify you as an expert so it should be tailored to your field.

Grant Proposal
Using the information that you've gathered about your book, you will now pitch this to a larger audience in the form of a grant proposal. This proposal will have two main parts 1) behind-the-scenes questionnaire and 2) the proposal itself. The questionnaire will be given out in class and effectively asks you to consider the logistics of funding a research project, who the audience will be, and who is interested in this type of work. You will hand it in with the finalized proposal as a cover sheet. The finalized proposal will be what investors and those in the public sphere, outside of academia, will see about your research. It should be no longer than 800 words and include any relevant citations, formatted properly (double-spaced, 12pt font, readable, with your name and project title). The project will be submitted via Learn and the due date is listed in the week by week calendar.

Criteria for Evaluation
- Clear topic with a narrow focus.
- Well-organized (arrangement!) presentation with clear narrative arc.
- Clear statement of purpose along with supporting evidence
- Biography is included at the end (not included in total word count)
- Technical presentation (typed, well formatted, consistent fonts, etc).
- Spelling and grammar (including complete sentences)

Presentation & Poster
Though graded and weighted separately, think of the Presentation and Poster as two separate projects with the same goal: to communicate the importance and findings of your research. Your presentation is meant to appeal to a larger audience, be clear and succinct, and gain interest. Your poster is meant to be a visual representation
of data; a different way in which to demonstrate academic and scientific discoveries outside of jargon while still relying on evidence. They will both be due on the same day, whenever the student presents, so be sure to keep track of the assigned time in-class. Presentations will be in the last two weeks of class; exact order will be announced closer to the date.

Criteria for Evaluation (Presentation)
- Clear topic with a narrow focus.
- Well-organized (arrangement!) presentation with clear narrative arc.
- Clear statement of purpose along with supporting evidence
- Your biography--who you are as a researcher--should be mentioned

Criteria for Evaluation (Poster)
- Clear & well organized
- Must compliment the oral presentation
- Technical presentation (typed, well formatted, consistent fonts, etc).
- Spelling and grammar
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Readings for Tuesday</th>
<th>Thursday Activity</th>
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<tbody>
<tr>
<td>1</td>
<td>Sept 5</td>
<td>Syllabus</td>
<td>Syllabus + Approved Books</td>
<td>Class begins! Start thinking about your book &amp; do The Four Tendencies Quiz</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>(Recommend)</td>
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<tr>
<td>4</td>
<td>Sept 24</td>
<td>Storytelling</td>
<td>Preface, Chapter 1 &amp; 2 of Kitty Genovese by Kevin Cook</td>
<td>Keywords and Maps</td>
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<td></td>
<td></td>
<td></td>
<td>Note: Your book should be selected and approved by now</td>
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<tr>
<td>6</td>
<td>Oct 8</td>
<td>Break</td>
<td>Thanksgiving + Study Break</td>
<td>Protip: read your book over the break</td>
</tr>
<tr>
<td>7</td>
<td>Oct 15</td>
<td>Sources</td>
<td>“A Note on Sources” + “Select Bibliography” from Kevin Cook’s Book, plus front and back matter</td>
<td>Demonstration: Scavenger Hunt</td>
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<tr>
<td></td>
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<td></td>
<td>Hand in your Field Notebooks in Class</td>
<td></td>
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<tr>
<td>8</td>
<td>Oct 22</td>
<td>Social Media</td>
<td>Read complete definition page of &quot;infotainment&quot;; watch Last Week Tonight &quot;Scientific Studies&quot; (14+)</td>
<td>Exercise: Detox Challenge</td>
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<td>Project Report DUE by Thurs Oct 24</td>
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<tr>
<td>9</td>
<td>Oct 29</td>
<td>Professionalism</td>
<td>EDGE Workshop (see write-up)</td>
<td>Oct 31 Library Session</td>
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<td></td>
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<td></td>
<td>Library Quiz ON LEARN</td>
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<tr>
<td>10</td>
<td>Nov 5</td>
<td>Grants</td>
<td>Review the Natural Sciences and Engineering Research Council of Canada Website</td>
<td>Exercise: Grammar + Translation</td>
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<td>Sign up for Presentations</td>
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<tr>
<td>11</td>
<td>Nov 12</td>
<td>Presentations</td>
<td>Your Presentations</td>
<td>Practice your presentation / no written assignments</td>
</tr>
<tr>
<td>12</td>
<td>Nov 19</td>
<td>Presentations</td>
<td>Your Presentations</td>
<td>Same as previous</td>
</tr>
<tr>
<td>13</td>
<td>Nov 26</td>
<td>Remaining Presentations</td>
<td>If we are done, we have a party</td>
<td>Hand in Field Notebook Grant Proposals due Dec 10</td>
</tr>
</tbody>
</table>
Note: Each section of this course will include one 50-minute Skills Identification and Articulation Workshop, conducted by a career advisor from the EDGE Program.

The Skills Identification and Articulation Workshop helps students identify the skills they are developing throughout their undergraduate career. Students who complete this workshop will become better able to recognize their skills and develop strategies for expressing these to target audiences (e.g. to potential employers in job interviews). The workshop was developed and will be facilitated by a Career Advisor from the Centre for Career Action. It has been tailored to the Science Communications course, so as to help students gain a deeper understanding of how class activities and concepts can be applied in a variety of employment and professional contexts. Students who are actively pursuing the EDGE certificate, or who wish to pursue the program in the future, will receive a milestone for participation in the workshop.

Late Work
I will accept work up to five days late, with a penalty of 5% per day. After five days, the student receives a zero. If you know that you will not be able to meet a deadline due to medical or legitimate personal reasons (holidays don’t count!), please discuss it with me in my office hours (or by appointment) at least one week before the deadline to make alternate arrangements.

Electronic Device Policy
Students are encouraged to use laptops or tablets in class to take notes and to look up relevant information. If the use of your device disturbs other students, however, I will ask you to turn it off. Please make sure cellphones are on silent and stowed away, unless in case of emergency.

Information on Plagiarism Detection
I do not use software to detect plagiarism, but I expect your essays to cite all material that is not your original work. Plagiarised work will be penalized.

Academic Integrity
In order to maintain a culture of academic integrity, members of the University of Waterloo community 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 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/guidelines/guidelines-assessment-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 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70). 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 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-72).

Note for Students with Disabilities
The AccessAbility Services office, located on the first floor of the Needles Hall extension (NH 1401), 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.
Approved Books

1. The Origin of Species - Charles Darwin
2. Silent Spring - Rachel Carson
3. Emperor of all Maladies - Siddhartha Mukherjee*
4. A Brief History of Time - Stephen Hawking
5. The Pluto Files - Neil deGrass Tyson*
6. The Immortal Life of Henrietta Lacks - Rebecca Skloot
7. The Selfish Gene - Richard Dawkins
8. Coming of Age in Samoa - Margaret Mead
9. The Poisoner's Handbook - Deborah Blum
10. The Disappearing Spoon - Sam Kean
11. Exactly by Simon Winchester
12. The Hot Zone – Richard Preston
13. Bonk - Mary Roach*
14. The Male Brain - Louann Brizendine
15. Beyond The Body Farm - Bill Bass
16. Why We Sleep – Matthew Walker
17. This is Your Brain on Music - Daniel J. Levitin
18. The Man Who Mistook His Wife for A Hat - Oliver Sacks*
19. The Sober Truth – Lance Dodds
20. The Anatomy of Violence - Adrian Raine
21. How To Change Your Mind - Michael Pollan*
22. The Man Who Tasted Shapes - Richard Cytowic*
23. Sapiens: A Brief History of Human Kind - Yuval Noah Harari
24. Ghost Map - Steven Johnson
25. The Story of the Earth - Robert Hazen
26. Blink - Malcolm Gladwell
27. The Beauty Myth - Naomi Wolf
28. Perv - Jesse Bering
29. The Killer of Little Shepherds - Douglas Starr
30. The New Jim Crow - Michelle Alexander
31. The Metamorphoses of Fat - Georges Vigarello
32. The World Without Us - Alan Weisman
33. This Changes Everything - Naomi Klein
34. How To Survive a Plague - David France
35. The Birth of the Pill - Jonathan Eig
36. Pain: A Political History - Keith Wailoo
37. The Body Keeps The Score – Bessell van der Kolk
38. Lab Girl – Hope Jahren
39. Wasted by Marya Hornbacher
40. League of Denial - Mark Fainaru-Wada and Steve Fainaru
41. For Her Own Good – Barbara Ehrenreich

Anything not on this list (or by an author with an asterisk by their name) OR with written approval by me will not be graded.