

HLTH 5100 | Fundamentals of Research Methods

Health: Science, Technology and Policy (HSTP)

Instructor: Dr. Renate Ysseldyk

Email:

Office:

Office hours: By appointment

Class meetings:

Location:

Course Description and Objectives

Welcome to HLTH5100! This course is designed to provide a foundation in research methods for students from diverse academic backgrounds. It will provide them with knowledge necessary to:

- Understand experimental design and the development of a research proposal.
- Explain differences between qualitative and quantitative research and the tools used.
- Understand the concepts of basic statistical methods and issues, and the requirement of different statistical analyses across study designs.
- Understand the role of ethics in health research.
- Value the perspectives and contribution of those from different research fields.

At the same time, this course focuses on providing students with the practical experience they will need in research methods to be successful in careers related to health research and policy. This component of the course will provide students with the ability to:

- Critically evaluate scientific research investigations.
- Develop appropriate research questions based on sound scientific evidence.
- Choose research methods that will effectively assess their research questions.
- Apply appropriate ethical considerations throughout the research process.
- Create databases that will meet the needs of their research investigations.
- Develop a research proposal in a chosen area of interest.
- Demonstrate leadership and teamwork in an applied setting.

Readings and Course Website

Required Texts:

Wilkinson, L., Bouma, G. D. & Carland, S. (2019). *The Research Process: Fourth Canadian Edition*. Oxford University Press. (Available through the Carleton University Bookstore, also through Indigo.ca, Amazon.com... and elsewhere, e.g., <https://www.vitalsource.com/en->

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[ca/products/the-research-process-lori-wilkinson-gary-d-bouma-v9780199029839](https://carleton.ca/products/the-research-process-lori-wilkinson-gary-d-bouma-v9780199029839)). New, used, digital, and/or rented copies are all fine. Approximately \$100 new.

Students will also be responsible for additional readings, which will be listed on Brightspace (<https://carleton.ca/brightspace/>). Articles will be available via free weblinks (for open access publications) or through online access via the Carleton University Library. Students are responsible for checking the course page frequently for updates, announcements, etc.

All lecture PowerPoint presentations will be posted on Brightspace (with some possible exceptions based on guest speakers' preferences). References for any supplemental readings will be posted at least one week in advance of the lecture.

Technology Checklist:

- ☐ An internet-enabled computer (laptop/desktop)
- ☐ Zoom software installed on computer (can also install on phone as backup!)
- ☐ Access to reliable internet
- ☐ Webcam (if desired)
- ☐ Headset with microphone (if desired)

Note: Although this class will be largely in-person, there may be times when a pivot to online teaching will be necessary (e.g., due to illness or inclement weather). Moreover, having access to the technology listed above will aid in your learning. For students who do not have access to these resources, options include [financial aid](#), inexpensive options for technology (Best Buy refurbished products, Kijiji), & single workspaces available for student use on campus.

Teaching Methods

This course is designed to provide students with different types of activities to maximize student engagement and learning in the area of research methods. ***In Fall 2026, this class will be in-person, with the possibility of synchronous and asynchronous online learning components.***

Classes will consist of lectures (slides available on Brightspace), class discussions and activities, videos, guest lectures, individual assignments, and a final group project. Lectures will address key issues in research methods, and discussions and activities will provide a forum for students to discuss and debate the principles learned. Assignments will allow students to apply this knowledge to a more practical context.

Respectful Classroom Space: Students are expected to attend each class prepared to participate in discussions of the assigned materials. The learning environment should reflect diversity and respect, including upholding honest communication and fairness by both students and the instructor(s). All students in the class, the instructor, and any guests should be treated with respect during all interactions. If you will arrive late or leave early, please let the instructor know, as this can be disruptive to the learning process and I want to ensure you are not missing anything.

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Respectful Online Spaces: With the growing use of online social platforms (e.g., Discord, WhatsApp) on campuses, it is important to keep in mind that university codes of conduct still apply to the behaviours of students online. Please be considerate and respectful while engaging with peers and remember that we are all humans, and that your words matter. If any student witnesses or experiences harassment, I encourage you to reach out to me. Alternatively, you can contact [Ombuds Services](#) or [Carleton Equity and Inclusive Communities](#).

Course Requirements & Methods of Evaluation

Research about learning strongly suggests the most important factor in learning is doing the work of reading, writing, recalling, practicing, synthesizing, and analyzing. Learning happens best when people actively engage material on a consistent basis, and that is why I have high standards in this course. I am confident that, with appropriate effort, you can **all** meet those standards.

Deliverable	Weight	Due Dates
Individual reflections (4 x 5%)	20%	Sept 29 th , Oct 13 th , Nov 3 rd , Nov 24 th
Group project topic approval	N/A	September 29 th (or earlier!)
Group partial draft submission	5%	October 20 th 11:30am
Group presentation	10%	December 8 th 11:30am
Group final report	30%	December 9 th 11:30am
Group self & peer-assessment	5%	December 9 th 11:59pm
Individual assignment	30%	December 11 th 11:30am

Individual Written Reflections – 20%

The purpose of the written reflection exercises is to help you engage with the course material on a deeper level. These exercises will involve asking you to reflect on the readings, lecture material and discussion, and/or new material that has been posted to Brightspace. In this regard, class attendance and keeping up with the readings is crucial to completing these reflections well. All reflection exercise responses will be completed and submitted through Brightspace. Four reflection questions (each worth 5% of your final course grade) will be posted following class approximately two weeks before the due date; your response is due by 11:30am on each due date. More details regarding the guidelines and marking scheme of these reflection exercises will be posted on Brightspace.

Individual Assignment – 30%

This individual assignment will require students to apply their knowledge on conducting literature reviews, different types of research designs, research ethics, critical appraisal and identifying bias in research, and principles of peer review. More details regarding the guidelines and marking scheme of the individual assignment will be posted on Brightspace.

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Group Research Proposal:

In small groups (to be determined by the Instructor), students will be asked to prepare a research proposal over the course of the semester. Details on the proposal will be provided separately and discussed in detail during class.

Draft group research proposal - 5%

Students will submit a working draft of their group research proposal for feedback. Elements of this proposal must include the working literature review (with reference list), research questions, and proposed study design. This will serve to ensure that there are no major concerns with the research topic and design, and to allow the instructor to provide constructive feedback that will help in the further development of the proposal.

Group presentation - 10%

Each group will present their research proposal to the class. Presentations will be 30 minutes total, which will include a 20-minute presentation, and a 10-minute question/answer period. Students will be graded on the content of their presentation, as well as their ability to respond to questions from the class. Each group member will contribute to the content and delivery of the presentation. Specific details on the presentation will be provided throughout the course of the semester.

Group research proposal report - 30%

Groups will submit a complete research proposal on the final day of class. This proposal will cover the entire research planning process from the development of a research topic and questions to the creation of an ethics application and data analysis plan. Details on the proposal will be provided separately and discussed in detail during class.

Group research project self- and peer-assessment – 5%

Students will also be asked to complete a confidential self- and peer-assessment based on the group members' contributions to the final report (and presentation). Blank assessment rubrics will be posted on Brightspace to be completed and submitted individually and confidentially.

Late or missed assignment policy (IMPORTANT!): All assignments must be turned in via Brightspace by the due date and time. After that, they will be considered **LATE** and will receive a 5% deduction per day. There are no make-up assignments in this course. Students requesting short-term extensions for extenuating circumstances or illness (i.e., lasting 5 days or less) should inform the instructor as soon as possible and no later than 24 hours after the missed deadline, and should fill out the form at the link below. Students requesting longer-term accommodation (i.e., 5 days or longer) should email the instructor for guidance, however, they will also need to alert the Registrar's office for support. For more information, see:

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<https://carleton.ca/registrar/academic-consideration-coursework/>). To request a short-term extension, see <https://carleton.ca/registrar/academic-consideration-coursework-form/>. **Please note, completion of this form does NOT guarantee that your request will be approved.** All requests are reviewed by the Registrar's office before being sent to the Instructor.

Grading

In graduate school, expectations about analytical abilities and performance are higher than in undergraduate work, and what is an acceptable grade is also different. Whereas a C+ is a passing grade in undergraduate studies, it is not in graduate school. This is an expanded version of the grading system outlined in the Graduate Calendar in order to give students a fuller description of standards. This explanation is intended to provide clarification of the Graduate Calendar and in no way overrides it.

Carleton University uses a 12-point grading scale from A+ (12) to D- (1). The student's overall Grade Point Average (GPA) will be calculated on the basis of this 12-point scale and the final evaluation received in the course will be submitted as letter grades. Here is how to interpret grades in terms of expectations of performance:

Letter Grade	Carleton Numerical System	% Equivalent	Explanation	
A+	12	90-100	Outstanding	For written work, virtually publishable. Demonstrates exceptional evaluative judgement, outstanding critical thinking, and mastery of technical as well as literary aspects of writing.
A	11	85-89	Excellent	Demonstrates superior grasp of material, very strong critical thinking, and capacity to understand and extend underlying patterns.
A-	10	80-84	Very Good	Demonstrates strong grasp of material, its component parts, and capacity to analyze their relationships to each other.
B+	9	77-79	Good	Demonstrates clear understanding of material and ability to apply concepts. Written work is competent.
B	8	73-76	Satisfactory	Satisfactory, but below average. Demonstrates comprehension of material, reasonable but not strong analytical capacity, with limitations in the ability to apply concepts.

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Letter Grade	Carleton Numerical System	% Equivalent	Explanation	
B-	7	70-72	Barely Adequate	Clearly below average. Demonstrates comprehension and understanding, with limited capacity for application. Communication skills problematic.
C+	6	67-69	Less Than Adequate	Did not demonstrate an adequate understanding of the material or the ability to apply the concepts. Writing and/or presentations show serious problems.
C to D-		50-66		Grades in this range indicate work that is passable in some respects but does not meet the standards of graduate work.
F		Failure		Did not meet minimal requirements.

In addition to the specific requirements of each assignment, written assignments will be graded using the following criteria:

1. Content

- Overall analysis – synthesis of material rather than mere repetition
- Integration of source material – sources are integrated into a coherent whole rather than presented as isolated facts or lists of study findings
- Sources are properly acknowledged and referenced
- Good use of a variety of secondary materials – books, journal articles, grey literature, government websites, etc.
- In-depth coverage and analysis of topic

2. Style

- Good sentence structure and fluent writing
- Correct spelling and grammar
- Proper length
- Clear, easy to follow the analysis
- Correct use of chosen reference style

3. Organization

- Paragraph structure is coherent and logical
- Logical structure to the argument(s)

Formatting

All assignments and references should be formatted in APA style (7th edition).

Academic Integrity

The University Senate defines **plagiarism** as “presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one's own.” This can include:

- Reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source;
- Submitting a written assignment, in whole or in part, by someone else;
- Using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- Using another person’s data or research findings;
- Failing to acknowledge sources through the use of proper citations when using another’s works and/or failing to use quotation marks;
- Handing in “substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs.”

Plagiarism and cheating at the graduate level are viewed as being particularly serious and the sanctions imposed are accordingly severe. A student found to have plagiarized an assignment may be subject to one of several penalties including: expulsion; suspension from all studies at Carleton; suspension from full-time studies; and/or a reprimand; a refusal of permission to continue or to register in a specific degree program; academic probation; award of Fail. To avoid plagiarism:

- Acknowledge every source from which you have drawn information or ideas for your paper. That is, even if you are not quoting directly from a source, you should still reference where the idea, argument, or information came from.
- Place every direct quote from a source in quotation marks (or indent it) and give a citation for the source. Nevertheless, try not to use quotes too frequently. Quotes should be used when they so beautifully or aptly sum something up that you couldn’t say it any better. A well-written paper is not a collection of quotes.
- Express other authors’ ideas in your own words. If you are outlining someone else’s argument, for example, outline it in your own words, and acknowledge the author at the end of your summation of his or her argument or idea/s. Any words not in quotation marks must be your own words. This advice has a legal as well as an intellectual purpose: being able to express an author’s ideas in your own words is part of your learning process.

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Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy (see <https://science.carleton.ca/students/academic-integrity/>). The Policy is strictly enforced and is binding on all students.

A note about Generative Artificial Intelligence (AI): AI has arrived on university campuses and is here to stay; however, there is a time and place for the use of AI... advancing your learning in this course is not one of them! Many of the assessed activities in this course were designed to be completed by an individual working alone or with the collective brainpower of the group. **Unless it is explicitly stated otherwise, the use of any generative AI-based tools will be considered academic misconduct and will be reported to the Office of the Dean as per university policy.** This includes, but is not limited to, chatbots (e.g., ChatGPT, Google Bard, Bing Chat), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E), etc. An exception to the above rule is made for automated grammar and punctuation checking tools (e.g., Microsoft Word).

Why have I adopted this policy? This policy ensures that student voices and ideas are prioritized and authentically represented, maintaining the integrity of the work produced by students while allowing basic support to enhance clarity, correctness, layout, and flow of ideas. The goal of adopting a limited use of AI is to help students develop foundational skills in writing and critical thinking by practicing substantive content creation without the support of AI.

Assistance for Students

A note about Graduate School and Mental Health: Graduate school can sometimes be overwhelming and stressful. If you are struggling, please do not hesitate to reach out. I am happy to listen, and/or direct you to resources that might help. Remember that Carleton also offers an array of academic and well-being resources:

Academic and Career Development Services: <http://carleton.ca/sacds/>

Writing Services: <http://www.carleton.ca/csas/writing-services/>

Peer Assisted Study Sessions (PASS): <https://carleton.ca/csas/group-support/pass/>

Math Tutorial Centre: <https://carleton.ca/math/math-tutorial-centre/>

Science Student Success Centre: <https://sssc.carleton.ca/>

Online Student Support Services: <https://carleton.ca/academics/support/>

Mental Health & Well-being Services: <https://carleton.ca/wellness/>

A note about Physical Health: If you are feeling sick (e.g., fever, chills, upset stomach, etc.) please do not come to class or campus! Email me as soon as possible before the class and I will do my best to set up a “Zoom” link to include you. That said, please do not mis-use this offer

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(i.e., if you are in good health), as our class discussions—and your learning—will work best if everyone is present in person.

Requests for Academic Accommodations

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the *Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances*, are outlined on the Academic Accommodations website (students.carleton.ca/course-outline).

Student Concerns

If a concern arises in this course, **your first point of contact is me**: Email or arrange a meeting and I will do my best to address your concern. If I am unable to do so, your next points of contact are (in this order): Dr. Edana Cassol (Graduate Chair) → Dr. Martin Holcik (Department Chair) → Office of the Dean of Science. **Note:** You can also bring concerns to Ombuds Services.

Important Information

- Students should always retain a hard copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- Please note that you will be able to link your Carleton account to other non-Carleton accounts and receive emails from me. However, if you are going to email me please do so from your Carleton account (so that my email account does not think your message is spam). Please make sure you include the course code ("HLTH 5100") on the subject line. If you do not have or have yet to activate your Carleton email account, please do so by visiting <http://www.carleton.ca/portal/>

Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by instructors, guest presenters, and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s). Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s).

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Date	Topic and Readings	Deliverables
September 15	Identifying a Research Question <i>Main topics: intro to health research, literature reviews, research questions</i> Chapters: 1 & 2 Horton, R. (2018). "Offline: What is science for?" <i>The Lancet</i>, 392 (10143): 198. Levine, A.S. & Matias, J.N. (2021). How to generate research ideas that impact society. <i>Inside Higher Ed</i>. https://www.insidehighered.com/advice/2021/04/22/identifying-research-topics-will-not-only-advance-science-also-improve-broader <i>Optional reading:</i> Gray, K. & Wegner, D. (2013). Six guidelines for interesting research. <i>Perspectives on Psychological Science</i>, 8, 549-553.	
September 22	Literature Searches & Systematic Reviews (Guest Lecturer: Heather MacDonald, <i>Carleton University Health Sciences Librarian</i>) <i>Main topics: literature searches; systematic reviews</i> Chapters: 3 (skip pages 42-47) Carleton University Library Guide: https://library.carleton.ca/research/course-guides/hlth-5100 <i>Optional reading:</i> Lucyk, K. & McLaren, L. (2017). Taking stock of the social determinants of health: A scoping review. <i>PlosOne</i>. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0177306	

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Date	Topic and Readings	Deliverables
September 29	Quantitative Research Methods I: Study Designs <i>Main topics: descriptive studies, cross-sectional studies, case control studies, cohort studies, experimental studies, randomized control trials</i> Chapters: 4 (until top of pg. 64) & 7	Written reflection #1 due Approval of group research proposal topic (by email)
October 6	Quantitative Research Methods II: Tools of Quantitative Research <i>Main topics: sampling; designing a study with a focus on questionnaire design; making use of secondary data; reliability and validity</i> Chapters: 5 (pg 79-81 only), 6 (pgs 117-119 only), & 8 Henrich, J., Heine, S., & Norenzayan, A. (2010). Most people are not WEIRD. <i>Nature</i>, 466, 29.	
October 13	Qualitative Research Methods <i>Main topics: focus groups, interviews, document review/analysis; participatory research</i> Chapters: 12 Eakin, J. M. (2016). Educating critical qualitative health researchers in the land of the randomized controlled trial. <i>Qualitative Inquiry</i>, 22(2), 107-118. <i>Optional reading:</i> Sparkes, A.C. & Smith, B. (2013). What is qualitative research? In A.C. Sparkes & B. Smith (Eds.) <i>Qualitative Research Methods in Sport, Exercise, and Health</i>. Routledge: New York.	Written reflection #2 due

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Date	Topic and Readings	Deliverables
October 20	Mixed Method Research Chapter: 4 (pg. 64-67 only) Östlund, U., Kidd, L., Wengström, Y., & Rowa-Dewar, N. (2011). Combining qualitative and quantitative research within mixed method research designs: A methodological review. <i>International Journal of Nursing Studies</i> , 48(3), 369-383. Moffatt, S., White, M., Mackintosh, J., & Howel, D. (2006). Using quantitative and qualitative data in health services research—What happens when mixed method findings conflict? <i>BMC Health Services Research</i> , 6 (28). doi.org/10.1186/1472-6963-6-28	Group research proposal: Partial draft of literature review, research questions, and study design due
October 27	NO CLASS (Reading Week)	

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Date	Topic and Readings	Deliverables
November 3	Research Bias and Critical Appraisal <i>Main topics: research bias, critical appraisal of research articles (and beyond)</i> Chapters: N/A Fowkes, F. G., & Fulton, P. M. (1991). Critical appraisal of published research: Introductory guidelines. <i>BMJ (Clinical research ed.)</i>, 302(6785), 1136–1140. doi:10.1136/bmj.302.6785.1136 Saini, A. (2020). Want to do better science? Admit you're not objective. <i>Nature</i>, 579, 175. doi: https://doi.org/10.1038/d41586-020-00669-2 Williams, V., Boylan, A-M., & Nunan, D. (2019). Critical appraisal of qualitative research: Necessity, partialities and the issue of bias. <i>BMJ Evidence-Based Medicine</i>. doi: 10.1136/bmjebm-2018-111132. ***Read before class: Geier, D.A., Kern, J.K., Garver, C.R., Adams, J.B., Audhya, T., Nataf, R., Geier, M.R. (2009). Biomarkers of environmental toxicity and susceptibility in autism. <i>The Journal of the Neurological Science</i>, 280, 101-108. <i>Optional (but suggested) reading:</i> Cabello, J. B. et al. (2025). Critical appraisal tools for evaluating artificial intelligence in clinical studies: Scoping Review. <i>Journal of Medical Internet Research</i>, 27, e77110. https://doi.org/10.2196/77110 Pinchbeck, G.L. & Archer, D.C. (2018). How to critically appraise a paper. <i>Equine Veterinary Education</i>. doi: 10.1111/eve.12896 Salvatore, J., & Morton, T. A. (2021). Evaluations of science are robustly biased by identity concerns. <i>Group Processes & Intergroup Relations</i>, 24(4), 568-582.	Written reflection #3 due

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Date	Topic and Readings	Deliverables
November 10	Research Ethics and Community Engagement <i>Main topics: why we have ethics policies in place, different ethics policies, vulnerable populations, ethics at Carleton University, community engaged research</i> Chapters: 9 Ysseldyk, R., Paric, A., & Luciani, T. (2016). Transferable practices for knowledge mobilization: Lessons learned from a community-engaged health research study. <i>Technology Innovation Management Review</i>. 6(9), 46–52. timreview.ca/article/1019 Skim read (unless you'd like to read all 216 pages!): http://www.pre.ethics.gc.ca/pdf/eng/tcps2-2010/TCPS_2_FINAL_Web.pdf <i>Recommended:</i> Complete the TCPS2 training course with certificate: https://tcps2core.ca/welcome <i>Optional reading:</i> Sparkes, A.C. & Smith, B. (2013). Ethical issues in qualitative research. In A.C. Sparkes & B. Smith (Eds.) <i>Qualitative Research Methods in Sport, Exercise, and Health</i>. Routledge: New York.	
November 17 (ONLINE)	“Indigenous Bundle”—Ethics of Research with Indigenous Peoples <i>Note: Asynchronous ONLINE Class only</i> <i>Main topics: ethics of research from an Indigenous perspective; cultural safety, understanding, and appreciation of Indigenous worldview; considerations when reviewing a proposal working with and Indigenous community; engaging with Indigenous communities before, during, and after the research</i>	

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Date	Topic and Readings	Deliverables
November 24	Data Management and Statistics <i>Main topics: sample size calculations, types of statistics, statistical concepts and issues, data management; meta-analyses</i> Chapters: 11 Amrhein, V., Greenland, S., & McShane, B. (2019). Scientists rise up against statistical significance. <i>Nature</i>, 567, 305-307. doi: https://doi.org/10.1038/d41586-019-00857-9 Messing, K. (2014). A statistician's toes and the empathy gap in scientific articles. In <i>Pain and Prejudice</i> (chapter available through Carleton University ARES). ***Read before class: Magrin et al., (2015). Social support and adherence to treatment in hypertensive patients: A meta-analysis. <i>Ann Behav Med</i>, 49(3), 307-18. doi: 10.1007/s12160-014-9663-2. <i>Optional reading:</i> Clayton, A. (2020). How eugenics shaped statistics: Exposing the damned lies of three science pioneers. <i>Nautilus</i>, 92. https://nautil.us/issue/92/frontiers/how-eugenics-shaped-statistics Kadam, P., & Bhalerao, S. (2010). Sample size calculation. <i>International Journal of Ayurveda Research</i>, 1(1), 55–57. doi:10.4103/0974-7788.59946	Written reflection #4 due

December 1	Writing and Reporting Health Research Findings <i>Main topics: research report writing formats; writing strategies; research funding; peer review</i> Chapters: 13 & 14 Smith, R. (2006). Peer review: A flawed process at the heart of science and journals. <i>Journal of the Royal Society of Medicine</i>, 99, 178-182. Nosek, B., et al. (2015). Promoting an open research culture. <i>Science</i>, 348, 1422-1425. http://science.sciencemag.org/content/348/6242/1422 Kozlov, M. (2024). So you got a null result. Will anyone publish it? <i>Nature</i>, 631, 728-730. https://www.nature.com/articles/d41586-024-02383-9 <i>Optional readings & resources:</i> Bem, D. (2003). Writing the empirical journal article. http://dbem.ws/WritingArticle.pdf Celik, S. U. (2025). Integrating artificial intelligence into scientific writing: A narrative review for clinical and surgical researchers. <i>The American Journal of Surgery</i>, 116657. Siler, K. et al. (2021). Predatory publishers' latest scam: Bootlegged and rebranded papers. <i>Nature</i>, https://www.nature.com/articles/d41586-021-02906-8 Stevance, H.F. (2021). Be concise, yet precise: A guide to scientific writing. https://www.hfstevance.com/beconciseyetprecise https://www.chaimcentre.ca/knowledge-translation.html http://thesiswhisperer.com/2010/06/10/how-to-write-a-lot/ http://conservationbytes.com/2015/05/04/twenty-tips-for-writing-a-research-proposal/	
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Date	Topic and Readings	Deliverables
December 8	Group Presentations <i>Main topics: Groups will present their research proposals to the class.</i> Knowles, S. (2018). How to win at academic presentations: Top tips on what to say and how to say it. <i>LSE Impact Blog</i> . http://blogs.lse.ac.uk/impactofsocialsciences/2015/02/20/how-to-win-at-academic-presentations/ Levine, A.G. (2020). Do you dread giving talks? Turn fear into joy with these four keys. <i>Science</i> . https://www.sciencemag.org/careers/2020/11/do-you-dread-giving-talks-turn-fear-joy-these-four-keys?utm_content=articles&utm_campaign=email-careers-jsnl&et rid=724580959&et_cid=3581539	Group research presentations
December 9 (NO CLASS)	Final Group Research Proposal Report	Final group report & self/peer assessments due
December 11 (NO CLASS)	Individual Assignment Due	Final individual assignment due

The instructor reserves the right to make minor adjustments to the course outline in order to adapt to the needs and progression of the course. Any modifications will be announced in class and/or posted via Brightspace.