

Understand the peer review process and standards for scientific writing. Provide constructive peer review feedback. Respond to constructive peer review/criticism in revision. Properly cite research in their own writing. Learn effective methods for communicating results through charts and graphs. (See Edward Tufte's work on the subject) Understand the difference between writing in a technical document compared to the writing needed for an essay in English class.	Peer review articles Persuasive technical reports - focus on communicating to decision makers who are not technical experts Proposal writing and pitch development	I think you can rotate through different disciplines so students can see that the same skills and approaches are used regardless of domain. I would think that it would be more of a technical writing class, as compared to a specific scientific discipline. More general but with nuggets that can be used across many disciplines.	Students should go through one or more mock cycles of the peer review process to draft and refine a "journal publication" on an assigned topic. Students should develop and deliver a shark tank like pitch to (non-technical) investors for a concept that is technically challenging	I would really like to see a technical writing class that reflects the types of writing that scientist and engineers have to do in practice. Peer reviewed journal articles are a big focus, but students also need to prepare for writing that persuades decision makers (corporate technical reports) and investors (grant proposals and pitch decks).
Read and interpret scientific research and journals Express themselves clearly and concisely Discuss data and make clear conclusions Suggest potential further areas of study Write to different audiences (scientific, lay people) Demonstrate mastery of primary literature inclusion Be proficient in creating their own graphs and data tables Integrate tables and graphs seamlessly into their writing Demonstrate resilience: writing is hard, and the process requires being amenable to feedback and re-working ideas, protocols, etc.	Technical Writing that is used in lab reports, abstracts, etc.			Should reading scientific journals and research be part of the course?
	Scientific blog/communication to make science more accessible?? Journal article Conference abstract?? Research paper	About writing, with scientific topics varying from unit to unit (though I think either can work, it's just that it might limit student interest if we make it about a specific topic in science)	See above	
1. Students should be able to articulate complex scientific concepts, theories, and findings clearly and succinctly in written form. 2. Students should demonstrate the ability to critically review their writing, incorporate feedback, and produce revised drafts that show improvement in content and clarity. 3. Students should be adept at constructing well-reasoned arguments backed by evidence. 4. Students should be encouraged to tackle current scientific issues in their writing, making their learning relevant and connected to real-world challenges. 5. While the emphasis is on writing, students should also demonstrate a deep understanding of the science they're writing about.	Possible types of science writing that this course should address could be: 1. Science Journalism for public consumption (e.g. press releases, opinion/editorial pieces, or other non-academic sources of writing that tackle current scientific issues). Possible pertinent topics could be: issues in public health, climate change, infectious disease, technological advancements, etc. 2. Scientific Blogs: a more informal type of science writing that could be used to document research, opinions, or commentaries on current events in science. 3. Research papers: a more formal type of academic writing that requires students to synthesize texts/primary sources, develop arguments, and critique real-world scientific texts.	It might be useful to explore multiple scientific disciplines throughout the term while maintaining certain expectations. Because writing is an iterative process, allowing students to practice similar modes of writing while exploring varied topics could help them hone more applicable scientific writing skills.	Peer reviewed journal entries (perhaps one rough draft and one final drafts) based on primary research students carry out over the course of the term; at least one major academic research paper rooted in a clear scientific concept that asks students to synthesize primary and secondary sources to form a clear framework and argument; varied smaller blog or discussion posts that ask students to reflect on and respond to peers' thoughts on readings, current events, or other media.	
-Communicate clearly about an experiment performed. This includes writing a clear introduction with background information, purpose, hypothesis; a methods section with a detailed description of what was done; a representation of data; analysis of the data that leads to the conclusion -Construct an argument based on scientific evidence using the Claim-Evidence-Reasoning framework -Create a visual guide to help present their information (a powerpoint, poster, or infographic) -Incorporate appropriate technical and general language to create a piece appropriate for a specific audience -Contextualize science's role in the world and understand the limitations of scientific inquiry and scientific knowledge (epistemology) -Read scientific research articles and be able to understand what was done	Lab reports, science in the news (journalism), citizen information (PSA), Argumentative papers Both technical science writing (what you see in a scientific journal article publishing findings) but also peer review writing and science writing for the public (like NYT). I think it would be helpful for students to see all the different ways that science can be written about and practice it.	I think that a focus will help attract students as well as give some necessary structure to those teaching the course. I think it should be "about writing" in order to explore all the different ways that science is written about. It could span across multiple disciplines and multiple styles of writing about science.	A lab report on a lab completed An informational video/podcast about a relevant popular science topic A letter to a government official advocating for policy change based on scientific knowledge A paper discussing the merit of an experiment/or the scientific method in general A reflection on the career possibilities that are related to science and how science is applied in different areas	Can we only have one course? I feel like I could design an entire course about lab writing, but also an entire course on philosophy of science and one on applications of science knowledge in the world
Better understand all the different ways to write about science and all the different ways to share data with colleagues or the public.	Science journalism Write a short story (sci-fi or that incorporates elements of science)	This class should be about writing. The students will have varied science background to begin with. Obviously one needs to understand the science to write about it, so some deep science learning will happen naturally.	Write an article on a recent scientific development Write for and give a TED talk on a topic.	
convey complex scientific ideas in writing in a variety of formats, considering a variety of realistic audiences. Additionally, I believe reading scientific ideas in a variety of formats and analyzing that writing will be valuable.	not sure I have 1 course in mind - but I assume non-fiction :)	Would it being focused on a specific discipline require certain pre-requisites? Ex: physics-focus would need a physics pre-req? If I'm thinking outside the box here: It seems fun to me to have it be multidisciplinary and therefore have it be co-taught or bring in guest facilitators that are experts in a discipline. Additionally, it might be cool to have the kids guide the topics rather than the teacher... could be a class that is responsive. What if I kid really wants to focus on physics and another on ES? Would that be okay? What if they could have more voice and choice in the way they learn, with the overall skills of reading/writing being the same for all students?	Anything from papers that analyze findings from lab, to science non-fiction that could be more like a book. I mean - why not a graphic novel explaining various scientific topics or the story of some discovery or whatever? Trying to think creatively here.	This is a cool opportunity for us and our students!
Develop researching skills (investigating existing scientific studies)	Writing about science/scientific work for general audience.	This should be guided by the strengths and motivations of the teacher(s) responsible for developing and teaching the course.		
			Explain [science concept] five ways (like this: https://www.youtube.com/watch?v=oppq45liuwu , but written) Read a primary research article, then rewrite it for a website like Science Journals for Teens (https://www.sciencejournalforkids.org/articles/reading_level/high-school-upper/) Similarly, submit to Frontiers for Young Minds: https://kids.frontiersin.org/participate/authors Script TikTok that convey, in an exciting manner for teens/young adults, ACCURATE information about cool science facts, health, etc. (not sure if this one would have enough writing for this course) Conduct a simple experiment and write their own APA-style paper Imagine an experiment that they do not actually conduct, but write a grant proposal for it, explaining the design of the study and arguing for its significance	
Read primary research articles (that have been carefully selected to be at an appropriate, comprehensible level for our students) Communicate science to a variety of audiences, adapting the medium and level of jargon as needed to be most understandable and impactful for each audience Relatedly to both of the above, TRANSLATE professional science writing for a lay audience while maintaining accuracy - The of ways technical writing practices are used in STEM fields (organization, formal language, clarity) - The scientific publication process - How to properly cite a paper (without Noodle tools) - How to incorporate findings from others in research work - How to communicate findings to a general audience - How to communicate with researchers in the field, connect with professional scientific organizations, submit an abstract for a conference - The use of tables and graphs to support scientific research - The various ways scientific research is presented (posters, literature reviews, proposals, presentations, as well as papers) - How to type correctly	I think we would best serve our students by having them focus on improving scientific writing for the communication of research findings. This allows for a focus on scientific research papers, science communication, and working with collaborators/research mentors.	I think it should be a class about science communication, but maybe each mini-unit could use a different scientific topic/theme to be the thing about which they are practicing those communication skills? And thus by necessity, they would need to learn a bit about that topic area before communicating it to others.	Practice argumentative writing by discussing a debate within scientific ethics and then arguing for the best way to move forward (e.g. how should we use or not use a particular new type of technology like genetic testing or gene editing, etc)	So excited to offer a class like this, however it ends up looking!
Be able to read primary and other scientific literary sources (peer reviews, etc.) Be able to write in the spirit of scientific literature (scientific abstract) Writing using scientific methodology as a guide and communicating both to a science literate and lay audience.	Abstracts/summaries, technical lab procedure and data analysis, methodology/techniques based on different disciplines.	science writing in general and making it as applicable to all disciplines within science (biological and physical). Make it as user friendly as possible	reading, reflecting and writing on all aspects of scientific literature, mock peer reviews	prereq for all Guided Independent Study course offerings?
1) Write with a scientific voice, using appropriate vocabulary and targeting an audience of peer reviewers. 2) Explain methods and protocols of an experiment, identifying limitations of their data collection or conclusions. 3) Identify sources of error and humbly explain why their results may not be perfect but still constitute a positive contribution to the body of scientific knowledge - Differentiate between primary, secondary and tertiary science writing, and replicate each one on a given topic - Effectively give and receive "peer review" - explore moral/ethical aspects of scientific advancements and communicate those in a nuanced manner via writing - Make effective scientific arguments and relatedly, identify misinformation/disinformation in science writing (i.e. unpacking misconceptions and the "controversial" parts of science) - Critique (and commend!) representations of science in media, including film, book, etc. analysis - See themselves in scientists by reading a scientists autobiography, then writing their own.	Literature review. Experimental design. Preparation of a scientific journal publication. - Writing up an inquiry experiment of their own - Reflective writing about their own scientific journeys - Writing about a topic at multiple levels/for different audiences (ex. writing about a scientific advancement from a current events/news perspective, primary perspective, and review article perspective)	I would advocate for a course where students bring specific interests that they wish to study or experiments they would like to conduct. Almost like a graduate school program where they write a lit review and/or collect data and have a crack at writing a scientific journal article. At this moment, I personally that it should be rooted in Biology/EnviroSci (biased), and then the writing will be related to the topics. I think this because this is the part of our discipline that has the most controversy, and that is an excellent area to mine in writing. It is not exciting to write about things everyone agrees about, I fear). Though with a science fiction critique, I do think astrophysics/space would be cool. It probably would be more interesting to mine lots of topics, and be adaptable to student interest though.	Literature review on topic of a student's choosing. Publication of a student's own research.	Great idea!
			1) Classic scientific lab report 2) Review paper about a topic of interest- thesis driven, and matching in style to field (e.x. what do Biology review papers look like?) 3) Science fiction (book, movie, etc.) critique and commendation 4) Ethical/moral stance taking on a particular topic 5) Short write-ups of a topic at various levels of depth	ChatGPT came up with a cool possible title- "Scientific Narratives: Bridging Literature and Lab"

<p>1. Clearly articulate scientific concepts/theories/models/findings through various forms of writing.</p> <p>2. Apply Claim-Evidence-Reasoning (or similar) approach to form coherent, logical arguments in their writing.</p> <p>3. Demonstrate a deep/robust understanding of key scientific principles/laws/models through writing.</p> <p>4. Evaluate scientific literature, identifying key arguments, evidence, methodologies, etc.</p> <p>5. Revise/refine their own written work to improve clarity, coherence, rigor, etc.</p> <p>6. Engage in metacognitive work to understand and improve upon their own writing skills.</p>	<p>1. Writing for personal understanding</p> <p>2. Writing for research</p> <p>3. Writing for informing others</p>	<p>A hybrid approach, perhaps:</p> <ul style="list-style-type: none"> - Discipline-specific for research articles/lab reports - General for pop science/opinion pieces. 	<p>1. Research papers</p> <p>2. Pop science articles</p> <p>3. Opinion pieces</p> <p>4. Lab reports</p> <p>5. Research proposals</p>
<p>They should be able to effectively communicate complex scientific concepts in clear, concise, and coherent language so that diverse readers (including non scientist) can understand what is being discussed.</p>	<p>How to construct well organized, evidence based arguments to support their positions while demonstrating academic integrity (by using proper Chicago style citations in their papers).</p>	<p>I think there should be a variety of topics as there will be students who are interested in different topics...keeps things interesting as well as them learning something new from others passions.</p>	<p>A scientific research paper, hopefully something that they are interested in. Otherwise it may be more difficult to write.</p> <p>Not really, this is new and it will be exciting to see where it leads.</p>
<p>- synthesize the main takeaways of scientific research articles in a number of writing formats</p> <p>- use reliable data/evidence to support an argument</p> <p>- understand and apply principles of clear, concise, and detailed science writing</p>	<p>- research articles (empirical, case studies, surveys, etc.)</p> <p>- scientific journals and periodicals</p> <p>- news articles/blogs/podcasts relating to scientific research</p>	<p>- I think it could be effective and attract students with varying perspectives if the course addresses a variety of scientific fields (can separate units by scientific discipline)</p> <p>- I also recognize the argument to focus the course on one discipline at a time (per term)</p>	<p>- assign a number of scientific research articles for the students to read and learn from; task the students with writing a newspaper article discussing the findings</p>
<p>Communicate through the formal writing/presenting process. (Likely reviews since I'm assuming there will be no labs.)</p> <p>Communicate information less formally to a more general public</p> <p>Integrate their ideas and research with others</p> <p>Navigate between scientific and non-scientific audiences</p>	<p>Formal lab reports/reviews</p> <p>Magazine-style articles</p> <p>Presentations</p> <p>Grant/Research Proposals</p> <p>Collaborative Writing</p>	<p>I think having no discipline keeps it interesting for the students and the teachers (having to read essentially the same lab report gets old). Keeping it open allows students to find their voice and is good practice if they continue in their science discipline. I think it should be more rooted in the fundamentals of scientific writing and scientific writing styles.</p>	<p>Formal Review/Article, "Scientific American" style articles, presentations of research, Grant proposal.</p> <p>It would be great to have the students present to a head of school, the town of Windsor, or to a group of their peers.</p> <p>There are also 500,000 publications on campus, so why could this class not work on a term-ly publication piece of communicating their finding in their independent research?</p> <p>What if they wrote grant proposals for things here at Loomis, highlight our scientific achievement and research opportunities?</p>
<p>Present scientific information comprehensively and clearly.</p> <p>Write scientific information so that a non-scientist can understand a challenging scientific concept.</p> <p>Write at a level that could be published in a scientific journal.</p>	<p>Write to another scientist as well as a layperson and a range in between. Our (LC) scientists will need to be able to explain clearly their science to a wide range of readers in the future.</p> <p>Writing that includes data presentation.</p> <p>Writing that includes the appropriate scientific bibliography/recognition of the original research</p>	<p>The course should vary it's focus from unit to unit. Not only is science writing different from some other sorts of writing, but it also varies from discipline to discipline due to the varied nature of the fields. The focus should be writing for science (writing for a journal, writing for the non-science reader, writing for a grant, editing scientific writing....) across the disciplines.</p>	
<p>-Write for a variety of audience, including a scientifically-literate audience</p> <p>-Read and understand non-fiction scientific writing like what is found in journals</p> <p>-Give constructive feedback to peers and incorporate feedback from teacher and peers</p>	<p>Journal articles, science journalism/pop science writing</p>	<p>I personally think a class rooted in a specific discipline would be easier to design/teach.</p>	<p>Students could design and carry out an experiment and write a journal article about their work. They could choose a science topic to research and write about it for two different audiences -- a scientifically-literate audience as well as an audience of non-scientists.</p>
<p>communicate science in clear and concise language</p> <p>be able to adjust writing based on target audience</p>	<p>how to write for a science journal</p> <p>how to write for a poster presentation</p> <p>storytelling as a scientist/writing for a lay audience</p>	<p>it would be great if each unit focused on a different discipline. Ex: 3 weeks on bio, 3 weeks on chem, etc.</p>	<p>students could be giving the option to work on their poster, application, etc for a science competition.</p>