Expository Writing 20: Engineering Life

Course Overview

Biology traditionally has encompassed the study of organisms and living systems, and as evidenced by the myriad tomes, articles, and symposia devoted to subjects as diverse as microbiology, physiology, and genetics, our knowledge of these and other areas is vast. However, some have predicted that the emerging field of synthetic biology will require us to develop new ways of thinking about, researching, and regulating the science of life. With synthetic biology, a field that uses approaches from genetic, molecular, and computer engineering to construct and redesign “biological parts, devices, and systems,” scientists not only can—but have—reconfigured existing biological components for specific purposes.¹ Currently, for example, researchers are able to create synthetic proteins that destroy cancer cells, are able to extract portions of DNA to provide diagnostics for Zika and Ebola, and are able to engineer microbes to create fuel.² One scientist has suggested as a motto for this new field: “Life is what we make it.”³

But while the potential benefits of synthetic biology are impressive, the field unsurprisingly has attracted controversy. For our first essay unit, we will explore the claim that scientists are desecrating the “natural,” and we will use the following sources to guide our discussion: “The Case Against Perfection” by political philosopher Michael Sandel, “A Bias for the Natural?” by psychologists Kristi Lockhart, Frank C. Keil, and Justine Aw, and "Choosing Disabilities and Enhancements in Children: A Choice Too Far?” by Timothy F. Murphy, whose research focuses on bioethics. For the second essay unit, we will examine scientists’ efforts to resurrect extinct species, a subject that helps us think through the broader critique that synthetic biology is diverting resources from more pressing areas of research. We will draw from a range of sources: The Rise of the Necrofauna by science writer Britt Wray, Nature’s Ghosts by historian Mark

³ Positioning Synthetic Biology to Meet the Challenges of the 21st Century, 8. The scientist who proposed this motto is Huanming Yang, who serves as the director of the Beijing Genomics Institute.
Barrow, and *De-Extinction and the Genomics Revolution: Life on Demand* by Amy Lynn Fletcher, whose most recent research focuses on biotechnology. For the third and final unit, students will devise a research project about the ethics of synthetic biology and will deliver a short presentation about their research to the class.

**Course Goals**

In this course, you will learn to build arguments that show a rigorous intellectual engagement with a range of materials. Ideally, by the end of the semester, you will have developed your abilities to think and write critically about pertinent biomedical and social issues. The assignments for this class also are designed to help you identify your strengths as a writer, your scholarly voice, and your intellectual interests.

This class is built on three premises:

- **Writing is a process.** You will take notes on your reading; write and revise response papers; write drafts of your essays; and fully revise those essays. This continued process of drafting and revision is the primary work of this class and is the primary way your writing grows stronger. It is worth noting that while inspiration is the moment we all hope for in our writing, it comes most readily when that inspiration is earned—*in other words, when you have dedicated sustained effort to that process of reading, thinking, questioning, drafting and revising*. This course also will ask you to be reflective about that process and about what you want to accomplish in each assignment.

- **Writing is thinking.** The evolving writing process also allows you to develop your thinking with greater depth and meaning. Writing is one of the best ways to *figure out* your ideas, and so you should expect your ideas and arguments to evolve during the writing process.

- **Writing is a conversation.** When you write, you are often in conversation with the sources you are writing about. You are likewise in conversation with your audience. You will express your ideas in your response papers, drafts and revisions. Your classmates and I will be responding to those ideas, telling you what their strengths are, and where they can grow stronger.

**Grades**

The majority of your grade comes from your three papers, according to the following breakdown: the first essay will count for 26 percent of your grade, the second essay for 28 percent, and the third for 30 percent. Class engagement and participation counts for 10 percent of the grade, and the course presentation counts for the remaining six percent. The standard for each essay also becomes more demanding as we progress because you are building on fundamental skills and techniques with each essay.
Grading Rubric

A grade of A means that the essay is excellent in all the criteria of the assignment and has a fully realized beginning, middle and end. The essay

- addresses the questions that it raises
- skillfully expresses an argumentative thesis
- provides a context for its own complex thesis
- grapples with interesting, complex ideas in the source(s)
- insightfully analyzes well-chosen evidence
- develops its argument with a clear and logical structure
- pays attention to alternate interpretations or points of view
- acknowledges and cites sources appropriately
- uses with precision the language and stylistic conventions that have been discussed in class

A grade of A- means an essay that accomplishes many of the things that an A level essay would but possesses one or two minor areas that could be improved. For example, the essay might contain one or two of the following features: It might

- convey stakes that are little underdeveloped or not fully related to the thesis
- contain a thesis that uses a key term imprecisely
- contain a claim with insufficient evidence or offer a moment of evidence that is not fully analyzed
- contain an occasional moment of repetition, digression, or confusing order
- insufficiently address counterargument (perhaps the objection is not quite strenuous enough, or the response to the objection is not sufficiently elaborated)

If the paper contains several of these features, that paper is no longer an A- paper.

A B range grade means that the essay has succeeded in many significant ways but falters either in several areas or in one very substantial area.

A grade of ‘B+’ means the essay might have a weakness in one area or a couple of weaknesses in less significant areas. For example,

- the thesis is arguable but not complex
- the essay is otherwise very strong but does not engage in counterargument
- the essay presents some uneven work with evidence (some insightful analysis as well as some more obvious explanation)
- some of the evidence it presents is weak
• the essay moves beyond a five-paragraph structure but sometimes proceeds by example rather than by developing claims

A grade of B means that the essay has more substantial weaknesses in the B+ areas above. For example,
• the thesis is more descriptive than arguable
• the essay frequently uses weak evidence
• much of the analysis is superficial
• The essay has several problems with structure (some paragraphs bury their lead claims or are unfocused, or the sequence of paragraphs is occasionally not logical)

A grade of B- means the essay is lacking significant necessary elements of argument. For example, the essay
• has no thesis
• only summarizes or describes evidence
• does not offer analysis, or offers consistently superficial analysis
• has numerous paragraphs that are burying their lead claims or are unfocused
• advances in a five-paragraph structure or uses no discernible logic for its structure

A C range grade means that the essay fails to address or complete the assignment in numerous ways. For example, the essay
• has no thesis
• engages in no real work with evidence; might not use the sources at all
• discusses the topic but not engage with actual argument
• lacks a sense of completion—it begins exploring an idea or question that never gets resolved
• is significantly under the expected page requirement

A D range grade is for the essay that is severely truncated (just a few paragraphs); the student may have tried to begin an essay but was unable to complete even a partial argument.
Harvard College Writing Program Policies

Communication

Email: I often use e-mail to communicate course announcements. As part of your participation in the course, I ask that you check your Harvard e-mail account daily; you are responsible for the information I send there.

Conferences: We will have three conferences throughout the semester. They will take place between the first draft and final version of each essay. These conferences are our chance to work closely on your writing and to focus your work in revision. Please come to each conference prepared—having reviewed your essay, considered your questions, and begun to think about revision possibilities and strategies. You should plan on taking notes during our discussions. Since the schedule during conference days is so tight, missed conferences may not be rescheduled. In addition to our formal conferences, you are of course free to come see me during office hours about your developing ideas or to set up another time to meet if office hours are not convenient.

Class Participation

One of the benefits of Expos is its small class size. That benefit is best realized when every student participates fully in the class; as in any seminar, you learn much more from formulating, articulating, and questioning your own thoughts than from simply listening to what others have to say. Our time together is largely devoted to discussion and small-group work. Therefore, you are responsible for being in class, prepared and on time, each time we meet. "Being prepared" means that you have given careful thought to the reading and writing assigned for the day, and that you are ready to offer ideas and questions to open our discussion.

Completion of Work

Because your Expos course is a planned sequence of writing, you must write all of the assigned essays to pass the course, and you must write them within the schedule of the course (not in the last few days of the semester after you have fallen behind). If you are unable to complete your work on time due to medical or family issues, please contact me before the deadline to discuss both the support you might need as well as a possible new arrangement for your deadline. Communication about your situation is essential so that we can determine how best to help you move forward. If we have not already discussed your situation and you fail to submit at least a substantial draft of an essay by the final due date in that essay unit, you will receive a letter reminding you of these requirements and asking you to meet with me and/or your Resident Dean to make a plan for catching up on your work. The letter will also specify the new date by which you must submit the late work. If you fail to submit at least a substantial draft of the essay by this new date, and if you have not documented a medical problem or been in touch with your Dean about other circumstances, you are eligible to be officially excluded from the course and given a failing grade.
Attendance

The Writing Program attendance policy is intended to make sure that you get everything you can out of your Expos course. Because Expos has fewer class hours than some other courses; because the course is largely discussion-based; and because instruction in Expos proceeds by sequential writing activities, your consistent attendance is essential to your learning in the course.

While I of course encourage you to be present every day in class, you are allowed two unexcused absences for the semester with no consequence. Some absences (religious holidays and medical situations) are automatically considered excused; some family circumstances may also be counted as excused absences. If you miss two unexcused classes, I will ask you to meet with me to discuss any issues that may be keeping you from attending, and to advise you on your plan for catching up on the missed work. If you miss a third class, you will be required to meet with your Resident Dean about those absences, so that your Dean can give you any support you may need to help you get back on track in the class. Missing four classes—the equivalent of two full weeks of the semester—puts you at risk for missing crucial material necessary to complete your work. Unless there is a medical or other emergency issue preventing consistent engagement with the class, students who miss four classes will receive a formal warning that they are eligible to be officially excluded from the course and given a failing grade.

In the case of a medical problem, you should contact me before the class to explain, but in any event within 24 hours; you should also copy your Resident Dean on that message. In the case of extended illness, you may be required to provide medical documentation. Absences because of special events or extracurricular involvement are not excused absences. If such circumstances lead you to want to miss more than two unexcused absences, you must petition the Associate Director of the Writing Program for permission.

Academic Integrity

One of the essential elements of the Expos curriculum is the work we do on effective source use, appropriate acknowledgement of sources, and expectations for citing sources in academic writing. In each unit, we will work on strategies for working with the ideas of other authors and sources, and for developing your own ideas in response to them. Most forms of academic writing involve building on the ideas of others, contributing ideas of your own, and signaling clearly for readers where each idea comes from. This complex relationship with sources is part of our work through the whole semester, and you should always feel free to ask me questions about this material.

As we become familiar with the expectations of an academic audience, we will also work on strategies to avoid errors in citation and unintentional plagiarism. As with all your courses, the expectation in Expos is that all the work that you submit for this course must be your own. That work should not make use of outside sources unless such sources are explicitly part of the assignment. Any student submitting plagiarized work is eligible to fail the course and to be subject to review by the Honor Council, including potential disciplinary action.
Course Material

The work we do together in class—discussions, exercises, workshopping essays—is intended for the members of our class. Students are not allowed to record class and are not allowed to post video or audio recordings or transcripts of our class meetings. (Students needing course recordings as an accommodation should contact the Accessible Education Office.) While samples of student work will be circulated within the course (and all work you do may be shared with your classmates), you may not share fellow students’ work with others outside the course without their written permission. As the Handbook for Students explains, students may not “post, publish, sell, or otherwise publicly distribute course materials without the written permission of the course instructor. Such materials include, but are not limited to, the following: video or audio recordings, assignments, problem sets, examinations, other students’ work, and answer keys.” Students who violate any of these expectations may be subject to disciplinary action.

Feedback and Conferences

Feedback is central to Expos. As spelled out in each assignment, you will receive substantive written feedback on your full draft and we will have a conference to discuss it. Every writer benefits from having an attentive reader respond to their work, and one of my roles as your preceptor is to provide that response: identifying the strengths of a draft; noting questions and reactions to help you develop your ideas further; and offering clear assessment of your revised work. There are educational reasons for the types of feedback I will give you: they complement one another throughout the writing process and help you think about receiving feedback from different audiences at different stages of writing. Each form of feedback will help you think about another way you can ask for and receive feedback in future writing circumstances. (Feedback throughout the course also comes in other forms, such as peer review or principles from workshop that you apply to your own essays.)

There are also educational reasons for the amount and timing of the feedback I as your instructor will offer. The goal of all my feedback is that you learn to incorporate the principles I am identifying into your own thinking and your revision, so that eventually you are making more independent decisions in your essays about what a reader needs to understand or what the most effective structure might be. If I as your instructor were to read a draft multiple times, offering several rounds of feedback, I would then in effect be taking over some of those decisions for you, and you would not be gaining the autonomy as a writer that you need to achieve this semester; that dynamic would shortchange the learning that you can accomplish in the course. I am happy, however, to have one follow-up meeting to discuss a specific issue in your essay revision, i.e., the introduction and thesis statement, topic sentences, or a paragraph with which you are struggling. In those instances, you are taking the important step of identifying what in your writing and thinking is most in need of targeted feedback, and you are using the Elements of Academic Argument to articulate the specific question you have about something you have tried out in the paper. (When you do want additional feedback, the Writing Center is a very helpful resource. Here too, you will use that resource better when you arrive with specific and targeted questions.)
There are also important reasons that I schedule one draft conference per student for each essay. Conferences are important opportunities for thinking together about questions in your argument and strategies for revision; during conference week I am meeting with all students and attempting to offer the same level of intensive work with everyone. If I were to grant a second full conference to any student, for reasons of equity I would need to offer a second meeting with everyone, and it is not possible to schedule a second round of meetings in an already busy unit.

**Collaboration**

The following kinds of collaboration are permitted in this course: developing or refining ideas in conversation with other students and through peer review of written work (including feedback from Writing Center tutors). If you would like to acknowledge the impact someone had on your essay, it is customary to do this in a footnote at the beginning of the paper. As stated in the Student Handbook: “Students need not acknowledge discussion with others of general approaches to the assignment or assistance with proofreading.” However, all work submitted for this course must be your own: in other words, writing response papers, drafts or revisions with other students is expressly forbidden.

**Electronic Submissions**

You will submit at least some of your work electronically this semester. As you send or upload each document, it is your responsibility to ensure that you have saved the document in a form compatible with Microsoft Word. It is also your responsibility to ensure that the file you are sending is not corrupted or damaged. If I cannot open or read the file you have sent, the essay will be subject to a late penalty and may be considered an Honor Council violation.

**Extensions**

You have one “free” extension per semester and may have an extra 24 hours to submit one paper without penalty.

**Late Submissions**

Across Expos sections, there is an expectation that you will turn in all assignments on time. Aside from your “free” extension, your work will be graded down by half a grade each day it is late – i.e. an A paper will receive an A- if it’s one day late, a B+ if it’s two days late, and so on.
Office Hours

Office hours will be held from 4:30 to 5:30 PM on Mondays and Wednesdays. Please email me to set up a Zoom appointment. If you would like to meet outside of these times, and I will do my best to accommodate you.

Disability Accommodations

Everyone is welcome in my classroom. If you have any concerns about any issue, great or small, please do not hesitate to reach out to me. If you think you will require some flexibility in deadlines or participation in the course for reasons of a documented disability, please schedule a meeting with me early in the semester so we can discuss appropriate accommodations. (To be eligible for such accommodations, you need to have provided documentation to the Accessible Education Office ahead of time. Please let me know if you are unfamiliar with that process.) The Accessible Education Office works closely with Expos courses, and we will develop a plan that is appropriate for your needs. Please note that it is always your responsibility to consult with me as the need for those accommodations arises.