Syllabus for Syllabus for EEPS0160, Monsters of the Abyss: Oceanography and Sea Tales

Baylor Fox-Kemper

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1 Contacts

The professor for this class is: Baylor Fox-Kemper
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Office: Lincoln Field room 214
`http://fox-kemper.com/teaching`, `http://fox-kemper.com/0160`

Some portions of the website are password-protected to ensure that fair use and copyrights are correctly obeyed as I share images from books, etc. You can access these by using:

```
username:  io
password:  ocean
```

2 Getting Help!

I am usually available by email. My office hours this semester will be most Wednesdays 1:30-2:30PM. You can also request an appointment at other times. Just check my calendar at `http://fox-kemper.com/contact` and suggest a time that works for you.

We also have an undergraduate teaching assistant (UTA) for the class (Dorian Park Wang dorian_wang@brown.edu, Office: Lincoln Field room ???). They will also be offering help with discussions, planning our field trip, and helping you to draft and refine papers.

3 Meetings and Places

We will meet Tuesdays and Thursdays from 1 to 2:20PM in Lincoln Field 117. Professor office hours will be Wednesday 1:30-2:30 or by appointment in Lincoln Field 214 (see my schedule at `http://fox-kemper.com/contact`). UTA office hours will be ??? in Lincoln Field ???.

4 Goals

The goals for this class[1] are that you will:

1. Learn about some of the physical, biological, chemical, and geological processes that occur in the ocean

[1] Many are drawn from Liberal Learning at Brown.

2. Learn about some of the sea creatures that lurk in the ocean
3. Work on your speaking and writing
4. Evaluate human behavior
5. Learn what it means to study the past
6. Experience scientific inquiry
7. Expand your reading skills
8. Enhance your understanding of art and aesthetics in the context of science, history, and the oceans
9. Alternate among the roles of lecturer, questioner, notetaker in classroom discussions and journalist, writer, or reviewer in writing assignments, so as to resist falling into the expected dominant class structures and gain new perspectives
10. Collaborate fully

What professional work involves these tasks? Some examples are

1. Scientists create illustrations and storylines to illustrate scientific concepts.
2. Writers engage with the ideas from science, but in a less constrained context, to bring new ideas into their writing.
3. Nature photography and art blends scientific and aesthetic appreciation.

Which sites of public discourse make this kind of work visible? Museums, articles, newspapers, magazines, websites, documentaries, and movies. We will be experiencing all of these media together during the course. This course will provide demonstrable professional improvements as it may improve your artist portfolio, writing samples, personal essays and statements, cover letters, and presentation and interviewing skills.
The readings and other media in this class will be drawn from:

- Complete reading of[2]
  We will read and discuss all of Verne, *20,000 Leagues Under the Sea*
  We will read and discuss all of Melville, *Moby Dick*
- Selections from[3]
  Selections from Cook, *The Three Voyages of Captain James Cook Round the World*
  Selections from Darwin, *The Voyage of the Beagle* and *The Structure and Distribution of Coral Reefs* and *The Origin of Species*
  Selections from Douglass, *Narrative of the Life of Frederick Douglass, an American Slave, Written by Himself*
  Selections from Mitchell, *Maria Mitchell: Life, Letters, and Journals*
  Selections from Nansen, *Farthest North*
  Selections from Wallace, *The Malay Archipelago: The Land of the Orang-utan and the Bird of Paradise, A Narrative of Travel, with Studies of Man and Nature*
- Short Articles
  A Franzen *New Yorker* article, called "Farther Away: *Robinson Crusoe*, David Foster Wallace, and the island of solitude".
  A Rush *New York Times* article, called "What Antarctica's disintegration asks of us".
  A variety of scientific papers, including Sheldon & Kerr, 1972: The Population Density of Monsters in Loch Ness

[2]Verne and Melville are available as inexpensive paperbacks in the bookstore, which will be the versions we'll use in class. Other (similar, but not identical) versions are available for free through Google Books at `http://fox-kemper.com/0160`).

[3]All of these are available online through links at `http://fox-kemper.com/0160`. *The Voyage of the Beagle* can also be purchased as an inexpensive paperback in the bookstore.

- Films and Recordings
  Vonnegut, The Shape of Stories, or a longer version.
- Museums
  The New Bedford Whaling Museum

A list of some science topics addressed in this class is:

- Observations in oceanography
- Fluids Mechanics and Physical Oceanography
  Hydrostatic pressure
  Ocean circulation basics
  Earth's rotation, the Coriolis force, Ekman layers, and sea ice drift
  Temperature, salinity, and density stratification of the ocean
- Biological and Chemical Oceanography
  Zonation, diversity, speciation, extinction, overfishing
  Classification of organisms
  Nutrient availability and constituents of seawater
  Basic physiology of selected oceanic flora and fauna
  Marine pollution
- Geological Oceanography
  Basins, margins, trenches, seafloor spreading, and plate tectonics
  Formation of barriers, reefs, and atolls by madrepores
- Climate Change
  Three essential figures about climate change
  Role of the oceans

5 Texts

All of the readings are in the public domain or will be under password-protection on the webpage, and links to the readings will fill the calendar at `http://fox-kemper.com/0160`. However, two of the books we will read from extensively (Verne & Melville) are available in the bookstore. Darwin's *Voyage of the Beagle* is also available there, but you might choose not to purchase it if you are comfortable reading from an electronic version as we will cover only brief selections. You will also be required to keep a journal, which can be on paper or electronic–you should choose to suit your own aesthetics, but be aware that you will need to reproduce portions of the journal for emailing or posting on Canvas and inclusion in other assignments.

6 Website

The primary resource for this class is the webpage: `http://fox-kemper.com/0160`. The class webpage is where all of your assignments will be announced, links to reading will be posted, etc.

We will also be using Canvas (`http://canvas.brown.edu`) to facilitate collaborative work and turn in assignments. You should already have access to these pages by registering in the class.

6.1 Calendar

The main webpage for the class `http://fox-kemper.com/0160` will have the calendar with all assignment deadlines, readings, etc. set up by the first class session. The three big paper assignments will be due

near Oct. 13, Nov. 17, and Dec. 21, respectively. You will also be posting a draft version of these papers about a week before the final deadline, for peer reviewing and suggestions for refinement.

7 Field Trip

We'll be going to the New Bedford Whaling Museum (`http://www.whalingmuseum.org`) after we begin reading *Moby Dick*. Schedule will be determined in class. Possibilities are Saturdays and Sundays in late October or early November. Please be advised that if you have sports or other potential issues around these dates let the professor or UTA know as soon as possible.

8 Film Viewings

We will set up a meeting time and location on campus with a large screen for viewing the film assignments. These are also available for streaming online, so that is an alternative if scheduling or other issues prevent your attending the main showing.

9 Research Resources

You will want to familiarize yourself with Google Scholar (`http://scholar.google.com`) and the Web of Science (`http://apps.isiknowledge.com`). Both are free to you, and they may help you with your paper preparations. Early in the semester, we will also have a presentation from one of Brown's science librarians, which will help get you oriented to more resources on campus.

10 Assignments and (lack of) Exams

There will be three major assignments for this class, and all of them will be in the form of medium-length papers (5-10 double-spaced pages or 1500-2500 words). There will not be in-class exams, although the final paper is due at roughly the time of our scheduled final exam. There will be many minor assignments, primarily writing in your journal, leading a discussion, and peer-reviewing each others' draft papers. These assignments will directly contribute to your success in the major assignments, so you should take them seriously. It is *expected that you will complete the reading in advance of class discussions, at least at the* initial skim *level*. Some guidelines for reading, peer reviewing, and writing in this class are available from the course webpage.

The grading for the class will be based on the following weights, which are similar to the fraction of the 180 hours total time these assignments are estimate to take:

- 20% Peer reviews, unedited selected journal entries, other collaborative projects (10 hours)
- 20% Class participation and presentation (13x3=39 hours in class, 5 hours preparation for 2 presentations)
- 60% Papers (20% each, 1 hour planning, 7 hours writing, 2 hours revising; 3x10 hours=30 hours total)
- Reading & journaling in preparation for classes and papers (96 hours)

What can I do to get a good grade? Turn all of the assignments in on time, and use the peer reviewing, class discussions, and journal writing as resources to get started early on drafting the papers.

Final assignments are to be in pdf file format, and should be uploaded electronically to `http://canvas.brown.edu`.

Since you all have different preparation, you will all be able to take advantage of what you know. However, we are working to develop elements in all of the Goals mentioned above in Section 3.

10.1 Formatting

All files you hand in to me should be in pdf format, should have your name, the date, and the assignment clearly indicated on the first page.

10.2 Reading

You will be reading these texts actively–immediate skimming, a detailed read while taking notes, journaling about your ideas, and finally a review skim before the week's class. I expect you to be ready to discuss the readings each week, and to have thought them over in the larger context of the themes of the course.

10.3 Journaling

You will be writing regularly (roughly twice a week) in a journal. You will take excerpts from these writings as the basis for your narrative paper assignments, and they are also helpful as discussion points for class discussions and presentations. Your journal will help you to develop your intellectual voice, although these entries are not as formal as an essay. If you write few journal entries per week (1-2), you might think about them more thoroughly and write more. If you prefer short snippets, then maybe more entries than twice a week is appropriate. I expect you to write at least one a week.

Journal entries are low-stakes, repeat efforts that are examined only in excerpts but are not critiqued and can be drawn on later in class discussions or project papers. Prompts for the journal entries are used to practice scientific, creative, essay, outlining, storylining, storyboarding of graphics, and other styles of writing. The highlights of the journals are brought forward to the whole class for discussions, to serve as examples of writing and just good ideas for deeper thought.

The topics that are of greatest importance in this class are those that work toward the learning goals. For this reason, I'd like you to think about how the entries you write address at least one of these learning goals. The journal is intended for you to capture your intellectual development over the course of the semester. They are intended to sharpen your perception and description of your own experiences, such as: discussing a point you found interesting in the reading; recording a little web research on a fact from the reading (e.g., What is a zoophyte? What is the pressure at 4000m depth?); recording a conversation you enjoyed; an animal, weather, behavioral, or other natural phenomenon you observed; a summary of a passage in a text or a discussion from class; a key find of a fact on the web or other resource; a description of a work of art you found moving; an experiment you performed in the sink; or just thoughts you had about what you would like to explore or study beyond your present experience.

Many of the discussions in class will be led by teams of 2-3 students. The fuel for these discussions will be a collection of your journal entries, selected by you and emailed to the discussion leaders.

10.4 Selected Journal Entries for Classroom Discussion

Most weeks, we will have a pair of students lead a discussion for a portion of the week. They will select the topics for this discussion–typically 5 questions or journal entries. They will be working with journal entries that each of you send to them in advance of the discussion session. This process will expand your speaking, writing, and reading skills through evaluating the human behavior and experiences that drive scientific inquiry and exploration. In class, both whole-group and breakout-group discussions will lead you to collaborate fully, asking as student, teacher, notetaker, and rapporteur over the course of multiple discussions.

10.5 Peer Reviewing

About four days before each major paper is due (e.g., Sunday before a Thursday), you will post your draft to Canvas. Two of your peers will read the draft and make suggestions. You, too, will be reading two other papers and making suggestions at the same time. You will have a couple of days after receiving this feedback to revise before your final version is due. Guidelines for what reviews should be based on and rubrics for reviewing and writing the summative assessments are provided on the course webpage.

In addition to writing the papers, you will each be performing reviews of each others work. This will give you an opportunity to read closely about topics other than the one you chose, and hopefully you will be able to learn about science writing more quickly. Also, there are a lot of quandaries that arise in peer-reviewing (e.g., one reviewer loves it and one hates it, or a reviewer makes incorrect statements), so you'll get some experience with those issues by practice in a friendly environment.

There are a few lessons to be learned here, that will help you write your own papers and will help you provide effective and useful reviews in your career.

- Learning to spot unfounded claims
- Learning how to properly support claims
- Learning to distinguish poor writing from poor thinking
- Learning to label equations, graphs, reproduced materials, and numerical information understandably
- Learning about a broader swath of oceanography than those isolated topics you choose for your own papers
- Enhance your understanding of art & aesthetics
- Expand your writing and reading skills

10.6 Why papers?

Writing is a critical part of science as well as many other careers. We will focus on two types of writing–narrative and scientific–which are different in structure and purpose than essays you may write for other classes. The traditions (some would say rules) are different for these two writing types, and part of our goal in this class is to understand why.

10.7 Why journaling?

The majority of our readings are derived from the personal experiences of scientists and explorers, or are fictionalized versions of the same. This mode of writing is a good way to get your feet wet, will help you draft your formal papers, and will be a nice memory of your first semester at Brown!

10.8 Scaffolded Assignments

Assignment scaffolding is the process of breaking tasks down into smaller steps. This technique is used in our class to build confidence, provide feedback, share ideas, collaborate, and end up at a higher level.

According to Brown's Sheridan Center for Teaching and Learning, scaffolding assignments is an important part of student learning because,

- It helps students master the intended learning outcomes of the assessment by breaking up the cognitive tasks so that they are smaller and more manageable.
- It recognises learning as a process where one skill or achievement is mastered before the next.
- It provides students with greater feedback and intervention opportunities when needed.

- Students can access more frequent feedback as they develop their assessment.
- It may help foster higher levels of critical thinking as students are guided through a series of tasks, starting with more simple tasks that lead to more complex tasks.

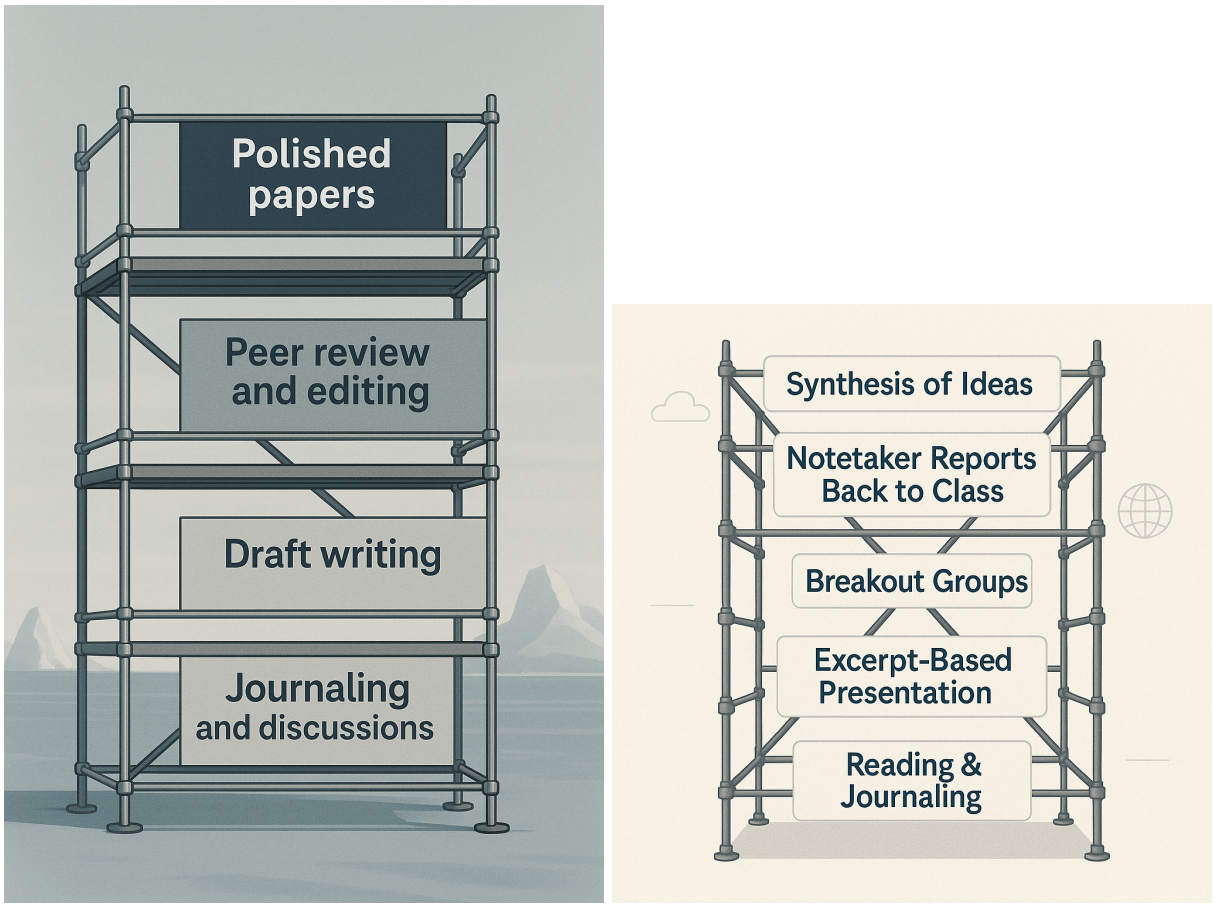

Figure 1: **Scaffolded Assignments.** (Image credit: ChatGPT)

However, successful scaffolding requires that you turn in the pieces on time, come prepared for class and ready to discuss, and so on. If you leave things until the last minute, the scaffolding will not be effective.

11 Policies

11.1 Deadlines

Because of the reviewing and scaffolding process, the scheduling of assignments is tight. Thus, I will have to insist that all papers, drafts, and discussion topics be turned in on time. If they are late, they will drop a letter grade. If they are really late (so that they mess up the next step in the reviewing process) they will be counted as missed and can not be made up. If you foresee that there are big problems coming up (medical, family, sports, etc.) let me know *before* an assignment is due and we can figure something out.

11.2 Collaboration

I encourage you to work together, and I do not mind at all if your conversations result in similar themes in your papers or shared figures or references. However, in this case, I want you to list all of your study group in the acknowledgments section of your paper. You are all required to submit a version of each assignment as first author (that is, one that you wrote yourself). You need to be careful to cite your colleagues or the textbooks, websites, or papers you might be working from. You can use as much of these resources as is convenient in your paper, but you need to properly cite the sources. We will discuss this topic more as the class (and the inevitable trouble) ensues. These issues of plagiarism and proper sourcing are a big part of what is to be learned in this method of assignments.

Another important aspect of collaboration is to learn when to talk and when to listen. In a class like this one, you will often learn more when listening, but sometimes you will have a great idea or unique viewpoint that will mean everyone else is missing out if you don't share. The use of journal excerpts is one way that folks less comfortable speaking can share, and we will discuss in both whole-class and breakout group formats. Sometimes you will lead a whole-class discussion, but sometimes you will be alone with your thoughts and your journal. It is a key learning goal for this course–and the reason for its design–that you practice multiple modes of thinking, speaking, writing, reading, critiquing, editing, leading, notetaking, and listening. Through this you can better identify your strengths and areas for growth, and then work on them!

11.3 Use of Artificial Intelligence

This course is mostly concerned with developing your human intelligence, but AI is in the world and there are a wide range of classroom policies across campus. In some courses, it is absolutely forbidden, in others it is allowed in specific ways, in others you might even be learning to code your own AI! In this class, we are learning about valuing and sharing each other's ideas. Using AI instead of working or discussing with a classmate is likely to be much less stimulating. Using AI instead of doing your own reading or writing is surely wasting your opportunity to learn and share *your* ideas. However, this is a course about learning and exploring in the world, and learning where AI can be most useful in deepening your learning is part of our world. So, we will discuss the uses and misuses of AI, and how to acknowledge the use of AI in your class work (see figure above for an example).

11.4 Other

A few other items.

- Attendance is expected. If you will miss a class, please let me know when and why so I can be sure you'll get any announcements, etc.
- Clothing and behavior (e.g., cell phone use) should be appropriate for a learning environment.
- Discrimination and harassment will not be tolerated.
- Please contact Baylor if you have any disabilities that require accommodation.

Last updated May 9, 2025.