

Pseudo-specifications grading for scaffolded assignments leading to a literature review in a scientific writing class

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Abstract

Scientific reading and writing is a critical component for those intent upon scientific careers though not stressed in many courses. Scaffolded assignments serve as checkpoints along the way to writing a draft of a literature review. These assignments may seem daunting to students with other courses and many exams. Likewise, weekly checks may be daunting to grade. A "pseudo-specification" system was designed where students are not contracting for a grade yet are presented with a simple system. A three-point scale was used for each assignment with 3 meaning they met both scientific and writing standards, 2 being they lacked one of these, and one meaning they wrote something, but it did not meet expectations. With 7 short assignments, points accumulated, and student then earned a percentage for that category in the class. Feedback and time spent grading improved as well as improved first drafts of the paper. There was no major change in grades for the class, yet students gave positive feedback on the grading system.

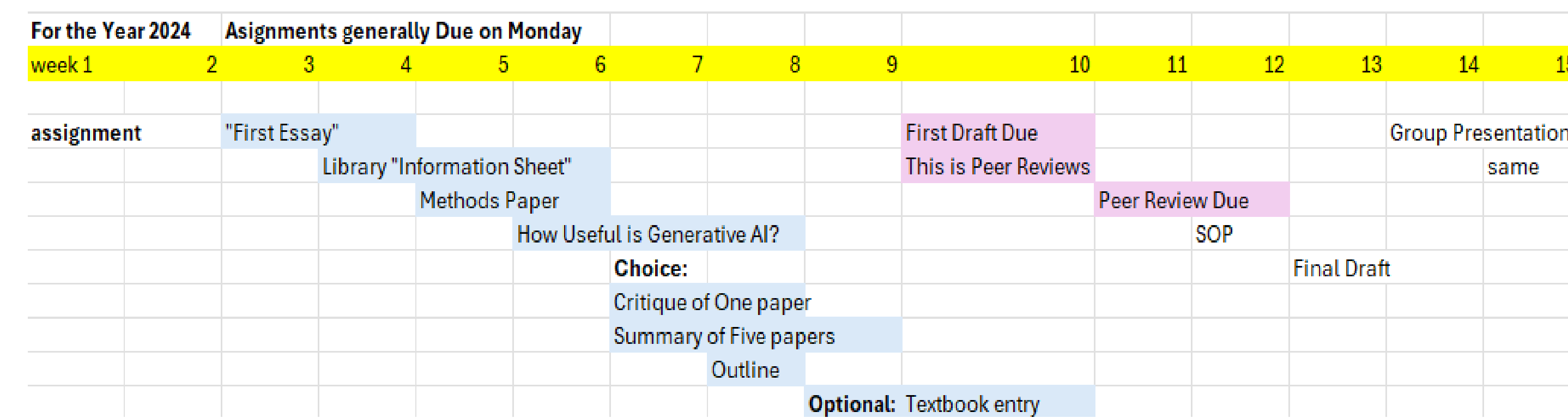
Intensive Writing Requirements

- Write a minimum of 5000 words, generally in a series of short (5-9 page) and long (10 or more pages).
- Mandatory rewrite or write several similar style papers.
- I have them write a scientific review article based on a topic of their choice.
- I used to do more drafts, now do only two drafts.
- Many science majors really don't like to write, but also do not know how to read scientific literature.
- Thus, we have weekly scaffolded assignments leading to the literature review.
- Because of this, there is a great deal of grading. I am trying to find better ways to efficiently do this grading.

Literature Review

- The literature review is expected to be a minimum of 10 pages.
- In a ten-point font, that is about 3000-3500 words.
- Some of the scaffolded assignments contribute to the minimal word count .
- These assignments help many students find good papers and learn to read them.
- Students do have a hard time finding good literature so that is where we start with finding literature using some information Literacy "Modules" created by our library staff.

Semester Schedule



The assignment in blue are the scaffolded assignments leading up to the First Draft (in pink).

There are 6 assignments shown with a **Concept Map** being the 7th. For those who feel that have done poorly on an assignment or missed an assignment, there is an 8th optional assignment. There is also a final draft due before **Thanksgiving break**.

My Concerns with "Specs" Grading

- I have not wanted to deal with contracting for a grade.
- Many students think they have to have an "A" for whatever reason.
- Some student think they are excellent writers, expecting As.
- Unsure how students would react if they "failed".
- I have an easier time just setting standards for each assignment so they know where to aim.
- I have not wanted to keep track of tokens for later papers and other issues Though I do understand how this can then be handled in CANVAS
- BUT.... very tired "nit-picking" with students and myself over points.
- **Thus:** A Pseudo- specs framework was tested and well-received fall 2022, less so fall 2023. It is being used currently fall 2024.

Comments from students and lecturers

In 2022, 10 out of 16 strongly agreed with this grading, five agreed that it was very clear

Students understood that there was a science component, not just "Intensive Writing" credit.

In 2023, students were less receptive to this scheme, and it has been clarified for fall 2024.

Overall, easier to grade, less time spent.

Lecturers commented that they liked that a large components was based on writing criteria.

"Pseudo-Specs"

Each of the scaffolded assignments is worth 3 points:

They were graded using the following criteria.

- 1- Does not meet expectations
- 2- Either the scientific merit or the written conventions meet expectations, but not both
- 3- Both the scientific merit and the written conventions meet expectations
- 4- Either the scientific merit and/ or the written conventions exceed expectations.

Overall, 21 points is the maximum. Students can earn more. IF a student earns a total of 21 or more, they get a 100% for this category in the gradebook, which is 20% of the final Grade for the class. Earning more on one assignment gives an option to skip an assignment and still do well. Several have skipped the concept map.

In addition, there are more specific also written for each assignment.

For example- the **"First Essay"**:

Criteria:

Writing conventions:

1. Does it use proper grammar and citations (if necessary)?
2. Does it have an informative title?
3. Does it introduce the topic?
4. Does it have a thesis statement?
5. Is it well-organized and informative?

Science Content:

6. Does it have sufficient scientific detail?
7. Does it describe a detailed biological process/system (i.e. it should include names of proteins and genes, as well as what they do.
8. Is it comprehensible to an upper-level biology student?
9. Does it use scientific wording and terminology
10. Does it have a conclusion?