Reflective blogging

Active Learning Minicourse Activity by Carrie Diaz Eaton

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# Writing prompts

## Assignment 1: Setting up the blog

In order to complete all reflection and blog assignments, you will need to create a blog. Unity College provides you automatically with a Google Account, and you can use this to start a blog on Blogspot. Here's how to [Start a Blog](https://unity.instructure.com/courses/1641304/files/70555828/download).

Go ahead and start your first reflectionary blog post:

Please read the Unit 2 Preface, which starts on page 79.

In your own words, describe what Discrete Time Modeling is. Which of the examples presented are the most interesting to you? Do you have any questions or is there anything mentioned that you would like to learn more about?

Now the next task is to submit this blog url to this assignment. [See this guide.](https://unity.instructure.com/courses/1641304/files/70555830/download)

## Reflection 1: Predicting Limits

The following exercise is designed to arrive at rules for determining long-term behavior directly from a sequence generator function without building a table.

1. Make a hypothesis about the long-term behavior of sequences generated by the difference equation xn+1=λxn, x0. Try to come up with some generalizations: sequences that look like \_\_\_\_\_ will do \_\_\_\_\_ long-term. You may have several hypotheses, depending on the values of xn, x0, and λ.
2. Test at least one other example for each hypothesis formed. Does it agree, disagree? If it disagrees, go back to step 1. When it agrees, move to step 3 for each hypothesis.
3. Create a written argument that explains why the general hypothesis is true. You may use an example to illustrate, but it must be a general explanation for any example that would fall in that case.
4. Create a comprehensive, yet minimal list of “rules” and explanations derived in 1-3. Cut and paste into the text box provided under the assignment link on Canvas.

 Your blog assignment:

Record your observations from this exploration. Also write down your resulting minimal list of hypotheses with verbal justifications about why they are true. Submit the blog link through the url box. Make sure it is the BLOGSPOT link. ;)

## Reflection 2: SHP and Group work

In your blog this week, take a few minutes to think about your first project.

What went well? What didn't go well? What was your role in the group? Did the group work well together? Would you prefer a different group - if so, what kind of members do you work well with? What did you learn? If I gave you a similar problem on a take home exam where you couldn't talk to others, do you know it well enough to use discrete models to answer some of the same questions?

Write a 3 or more paragraph blog entry, reflecting on your experience on this first group project, the sustainable fisheries project.

## Reflection 3: Clear and Fuzzy

This week, since we also have a longer HW assignment and an exam, there is not additional reading.

What I would like you to do is compose a thoughtful reflection in your blog about the semester so far. You are preparing for your first exam this week. What material do you feel really comfortable with? What do you need to practice more? What are the resources available to you? What has been your approach so far? What is your plan moving forward?

As always, I expect at least 3 thoughtful paragraphs. The most important part of this assignment is for you to think carefully about how to take control of your learning and success and make a plan moving forward.

## Reflection 4: Personal Experience with Calculus

A journalism major talks about his experience with math and Calculus. [Link. (Links to an external site.)](http://www.niemanlab.org/2013/11/matt-waite-how-i-faced-my-fears-and-learned-to-be-good-at-math/)

Discuss the relationship between this article, math learning and reflect on your own experience.

Again, note that each blog entry is expected to be at least 3 significant paragraphs - 1 point for completing the assignment, 1 point for thoughtful reflection.

Here are some tips by our writing center for writing blog posts. [Link. (Links to an external site.)](https://docs.google.com/document/d/1fgtCzuR5WA5haerAEZ7nVCOQkbhAdZZqzw9ug7Xd59M/edit?usp=sharing)

## Metacognition The practicing mind:

Please note: This paper is worth 5 blog assignments!

Full assignment is here: [*The Practicing Mind* (Links to an external site.)](https://docs.google.com/document/d/1VJqJcQslAKZ45srl0e-bw39MDXbfm69bepskhxanmxA/edit?usp=sharing)

I suggest that to receive full credit, you utilize the resources of the writing center on campus. Set up an appointment with them now, for a date prior to the submission of this assignment. You will get the most help if you come with a full draft of your paper. If you need help on an outline, set multiple appointments up with the writing center.

Please submit as either a Google Doc url, a pdf for a .docx

This assignment will be graded on a letter grade scale.

## Reflection 5: Start Early for Extra Credit

[Discrete versus Continuous (Links to an external site.)](https://docs.google.com/document/d/17GQ6NhIeF1qILGojGVjn-z2VPGK8Ia5NjxP9738uuTg/edit)

[CSE citation references (Links to an external site.)](http://bcs.bedfordstmartins.com/resdoc5e/res5e_ch11_s1-0003.html)

This will require you to practice finding and using references in anticipation of upcoming lab reports. Because it requires some additional research, leave extra time to complete this assignment.

Scoring Guide 16 points

\_\_\_\_\_\_/ 4 points - Format, including references and citations

\_\_\_\_\_\_/ 6 points - Good flow, good logical argumentation, evidence to substantiate arguments

\_\_\_\_\_\_/ 6 points - Depth of mathematical thought, time put into researching discrete and continuous processes and thinking about their applications

\_\_\_\_\_\_/16 points total

The 16 points/4 will determine the final grade. Because this entry is only listed as 2 points, this effectively gives up to another whole blog worth of extra credit.

## Reflection 6: Mid-term reflection

This week's directed response:

For this blog entry I want you to:

1. Copy into the blog, the list of Learning Goals for this course (hint, try the syllabus).

2. Self-assess your progress in meeting these course goals, what you could be doing better to achieve them?

3. Review from the syllabus the section on how you earn your final course letter grade. Are you meeting your goals? If not, what could you be doing more to meet them?

I am looking for an honest and deep self assessment. I will award 1 point for completion, 2 points for a thoughtful response.

I am expecting that each post has at least 3 paragraphs.

Reflection 7 : What is calculus?

Read the following article: [http://en.wikipedia.org/wiki/Calculus (Links to an external site.)](http://en.wikipedia.org/wiki/Calculus)

Make a blog entry and respond to the following questions:

1. Who invented Calculus?

2. What are "infinitesmals?"

3. How are limits related to differential calculus?

As always, the audience is a peer in your class. I expect at least 3 thoughtful paragraphs for full credit.

## Reflection 8: R vs K selection

Please read the following short summary link:

[http://en.wikipedia.org/wiki/R/K\_selection\_theory (Links to an external site.)](http://en.wikipedia.org/wiki/R/K_selection_theory)

1. Do you notice any errors? (Always good to ask of any wikipedia article - this is meant to be one of many sources, not the only source)

2. How does this relate to the concepts and scenarios in the current project we are working on?

3. How does calculus relate to the math presented in this article?

Note: Each post will be worth 2 points: 1 point for writing a post that addresses the above criteria, and 1 point for thoughtfulness, self reflection, and completeness of posting. I am expecting that each post has at least 3 paragraphs.

## Reflection 9: Struggling?

Struggling with Math

Please read the article linked here: [http://blogs.kqed.org/mindshift/2014/02/bigger-gains-for-students-who-dont-have-help-solving-problems-struggle-to-learn/ (Links to an external site.)](http://blogs.kqed.org/mindshift/2014/02/bigger-gains-for-students-who-dont-have-help-solving-problems-struggle-to-learn/)

Struggle is uncomfortable. How does it relate to the book The Practicing Mind? How does this relate to learning in our class?

Each post will be worth 2 points: 1 point for writing a post that addresses the above criteria, and 1 point for thoughtfulness, self reflection, and completeness of posting. I am expecting that each chapter and each post has at least 3 paragraphs.

## Reflection 10: Calculus in the news

Yes, Calculus is in the news. Read [the following article (Links to an external site.)](http://ecademy.agnesscott.edu/~lriddle/calculus/newspaper.pdf) and reflect on 1 of the examples mentioned and how it relates to the topics in class. Then find your own "Calculus in the news" example. Provide the link and explain how it relates to the class (much like the examples in the article above).

I am expecting a in depth and clear explanation.

A few years ago I had the following exchange with Soledad O'Brien.



## Reflection 11: Run of Walk in the Rain

Read the following article here:

[http://models.street-artists.org/2010/11/30/run-or-walk-in-the-rain/ (Links to an external site.)](http://models.street-artists.org/2010/11/30/run-or-walk-in-the-rain/)

Discuss the use of mathematics in this article, how it relates to class, and what lessons are learned. Come up with your own interesting optimization problem, and pose what kind of information or things you would need to include in your problem.

I am expecting AT LEAST 3 full, well thought out paragraphs. Points will be awarded for depth of thought and an understanding of concepts related to class.

## Reflection 12 Final reflection:

Meeting course learning outcomes: This question will be graded on thoughtful reflection. 0 points for little or no effort, 1 point for answering the question, and 4 points for deep and insightful reflection.

The learning objectives for Calculus I are that at the end of this course, we expect students to:

* Understand and communicate how difference and differential equations model change algebraically, numerically, visually, and verbally.
* Use information about derivatives to reconstruct important qualitative behavior about functions such as max/min, increasing/decreasing, concavity, and stability of equilibria.
* Interpret and apply difference equations, limits, and derivatives in the practical and professional world, particularly in environmental and life science.
* Use a computer algebra system (like WolframAlpha.com) and a spreadsheet system to analyze problems rapidly.
* Demonstrate prociency in group collaboration to investigate problems and individually communicate mathematical ideas and solutions.
* Develop time management and discipline in study habits.

Self-reflect on your progress in the class towards meeting the above goals. What helped you achieve these goals the most? What would you do dierently? What piece of advice would you give to a future student? If you were to self-assess - ignoring Canvas numerical grades, what grade would you give yourself for the course?

# Grading Rubric

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Ratings** | **Pts** |  |
| Posting related to topics of the week under discussion | *This area will be used by the assessor to leave comments related to this criterion.* | 1 pts |  |
| Thoughtfulness, self reflection, and completeness of posting | *This area will be used by the assessor to leave comments related to this criterion.* | 1 pts |  |
| Flagged question e2565888dd Real-world applications[view longer description](https://unity.instructure.com/courses/1641304/assignments/7673400)threshold: 2 pts | *This area will be used by the assessor to leave comments related to this criterion.* | 3 pts |  |
| Flagged question e2565888dd Metacognition[view longer description](https://unity.instructure.com/courses/1641304/assignments/7673400)threshold: 2 pts | *This area will be used by the assessor to leave comments related to this criterion.* | 3 pts |  |
| Total Points: 2 |

The items with an arrow are related to college-wide or course-level learning outcomes being assessed through this assignment. They are not part of the grade, but are part of the Canvas Instructure rubric option.

# Additional course and reference materials

1. Textbook: Bodine, Gross, and Lenhart, Mathematics for the Life Sciences
2. Syllabus ([link](https://docs.google.com/document/d/1c3FHENg9djG5rXlRonmTfAmjlAQ9MbUO_BsLwAaRpII/edit?usp=sharing))
3. Paper: CD Eaton and S Wade. 2014. Collaborative Learning Through Formative Peer Review: <http://www.tandfonline.com/doi/abs/10.1080/10511970.2014.881442>