MARS 5470/4470 Coarse Evaluation Form Sundays by Midnight

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Aspects of class that worked well:

This class has changed a lot over the course of the semester. In the beginning of the semester the main goal was to learn the basics of python applied to marine and environmental sciences, which I think it was fulfilled. However, the goal switched to fulfill the learning needs of each student, it was good to recognize that not everyone in the room were at the same level of exposure to topics related with computer science. The lecture/demonstrations part worked very well, it was easy to follow and interesting to watch, it was a great to see the evolution of this format going from following pre-made lectures to the ones made specially for the class. Sure, it involved more time invested to prepare the material for each class, yet, the effort was worth it and as a result most of the people in the class were able to follow the lecture without having to worry about typing fast enough to not be left behind.

Material-wise, we covered a lot of material going from the basics like variable types and basic commands, to advanced topics like machine learning. Guest lectures were a great addition, they offered us insight into more advanced material that would not be easy to understand or follow on our own. Riley made a great job showing us how to utilize Cartopy and how to do more advanced plotting utilizing matplotlib, in fact they were so useful that I kept coming back to them for reference. I think that is the best thing about this class, we covered whatever was useful instead of spending a lot of time learning the basics. The fact that lectures were always available from GitHub made it easy to look back and take whatever was needed from lectures and apply it to the topic that was being covered at that moment.

Another win was that along with python you taught us something very important: how to have the mindset of a programmer. I learned how I can use programming to approach issues in science in a way that I did not know it was possible. For sure from now on I will add programming to my toolkit for future use. I learned that if I am stuck I can always google my problem because most likely someone already had the same issue and if not I can always ask for help.

Aspects of class that could be improved:

The class was understandably inconsistent in its pace, I believe that this issue will be surely resolved next time this class is taught. It was evident at the beginning of the semester that the class lacked a grasp of how versed the students were in the topics covered. Some lectures where a bit slow for the first couple of topics, specially for people with previous background in programming, the class was more dynamic once exercises were implemented into the lecture, however, sometimes these exercises were a little too hard for the class or took a bit more time than expected, and it is understandable to have difficulties balancing out these exercises in order for the class to be engaging for all students. Exercises should be challenging enough to bring a sense of accomplishment to the student while reinforcing the material learned, sure an extra “spicy” challenge can expose the gaps a student can have regarding the understanding of the material and I think that is good, yet if done incorrectly it can have an adverse effect on the students making them feel like programming maybe is not for “them”. To solve this I suggest having relatively easy and short exercises that build on each other and maybe call back to previous lectures to make them and every two weeks have a timed “test” exercise to expose the weaknesses of the students, and after the time runs out hack the test along with the class to clarify any doubts about the topics before moving on to a different one. The “tests” do not need to represent a significant portion of the grade, so the students do not feel like the class is difficult, the goal is for them to be able to learn the material not scaring them off. This is the purpose of the final project, putting all the knowledge together and reinforce whatever feels weak, despite this I feel that by this time it may be a little too late to be spending time looking back at previous lectures to remember how to use simple commands like “ for loops” and functions.

Material to cover requests:

* More focus on “For loops: I feel that I spend more time than I would like to admit trying to figure out how to make a “for loop” work.
* Cover how to do basic statistics and how to visualize them utilizing python: For future classes it would be a nice addition to be able to run statistical tests commonly used in environmental sciences like ANOVA, MANCOVA and regression, utilizing python.
* More functions: functions can be very useful, however I only know they exist and I know how to use basic function, yet I do not know the full potential of them and I don’t really understand them. It would be nice that the next class have a better grasp of this.

Tips or hints for future classes / future FAQ:

* If you do not understand something, google it, if it does not work, ask for help.
* It is okay to feel frustrated, take a breather when you are feeling like that.
* It is not a competition, share with your classmates for better results.
* Always play with our code, you will learn better by doing so.
* Annotate everything!
* For the final project make sure that what you are doing is something that you like and make you excited to code.