Astronomy 192: The Pre-Major In Astronomy Program
Syllabus

Class times: MWF 11:00-12:20
Classroom: PAB B356
Instructor: Michael Tremmel
Email: mjt29@astro.washington.edu
Office: PAB B317
Office Hours: 4:00-5:00 Tuesdays and Wednesdays or by appointment
Class Materials: Lab notebook, calculator, pen/pencil, *your brain*

The Goal:

The objective of of this course is to give beginning students interested in science (i.e. you guys) a chance to gain the basic skills and experience necessary to do scientific research. The hope is that you all will gain a clearer idea of how real science is done and how to communicate it to others.

The Class:

For the ***first half*** of the quarter, we will be working on developing some basic skills necessary for research, such as...

Computer Programming:
We will work on developing some basic computer skills including some basic programming using **IDL** and **Python**. We will go through a guided tutorial as well as some exercises to hone your skills.

Reading Scientific Papers:
Publications in scientific journals can be very hard to understand, but it is an important part of research to know and understand the work of others. During the course, you will read *four* articles and will be asked to answer some questions about them. We will go over each article as a class in detail.

During the ***second half*** of quarter, you will be working on getting some experience doing *real science*!

Research Projects:
We have a pool of projects put forth by UW Astronomy faculty, post-docs, and graduate students. You will choose which projects interest you the most and you will be assigned a project in pairs. Each pair will work closely with a research mentor who will help you make progress on your project.

Research Presentations:
A crucial part of science is being able to present your work to your peers as well as the public. After five weeks of working with your mentors, each pair will give a 10 minute presentation on their projects. This is the perfect chance to hone your

science communication skills! Many people within the astronomy department (faculty, research staff, graduate students, etc...) will come to see you talk. Don't worry... we will take time to go over some helpful tips and practice along the way!

Lab Tours: In order to give you an idea of some other science going on around the university, we will be going on 2-3 tours of other labs around campus. We'll meet some cool people and learn about some cool science.

What I Expect of You:

Care. Be enthusiastic and **try your hardest**. **Participate** in class discussions and **take ownership of your research projects**. Come to class ready to work and show dedication by working outside of class as well. If you do this, you will accomplish a lot this quarter and you will definitely meet any expectations I have, *regardless of how quickly you can code or how far into your research you are able to get.*

This class isn't about how much research you accomplish, but rather how much you learn along the way.

Grading (the LEAST important part):

40% - Research. I will be meeting with each group individually each week to see how things are going. In addition, you will be expected to give a very short (few minute) summary to the class every Friday about what you did the previous week with your projects.

20% - Research Presentation. I will give you a more detailed rubric beforehand.

20% - Programming Exercises.

20% - Reading/Writing assignments.