AST 2133: OBSERVATIONAL LABORATORY 2 **Spring 2021 Syllabus**

Instructor: Prof. Dr Andrej Prša
(pronounced AWN-dray PUR-shuh)
Dept of Astrophysics and Planetary Sciences
Mendel 458c (4th floor)
aprsa@villanova.edu
(610) 519-4822 – work
(484) 868-0813 – cell

VIRTUAL OFFICE HOURS

Tue	2pm – 4pm
Thu	11am – 12:30pm
Fri	9am – 11am

other times by appointment

In this class we value each person as part of a learning community for their insights, perspectives and opinions, irrespective of gender, gender identity, race, sexual orientation, disability, spiritual values, political beliefs or nationality. We celebrate diversity and highlight its principal role in enriching our academic, professional and personal lives.

Course time and location: Wed 1:50pm-4:40pm, M454 (4th floor Mendel)

Course homepage: http://aprsa.villanova.edu/?q=oblab2

Another semester, another ob-less oblab! :-/ Well, let's make the best of it! After a long consideration, it is my opinion that our time will be best spent at the cross-roads of data reduction and computational analysis. Thus, while we will revisit IRAF a couple of times in the semester, we will spend considerable time writing code and focusing on intermediary results. We will review some of the results we reached last semester and build on them. It is my hope that, by the end of the semester, you will have a thorough understanding and a solid toolbox of reduction techniques to be able to tackle any acquired data and make good use of it! The last 3 weeks will be dedicated to toning our presentation-giving skills on topics related to observational techniques that we have not covered in class.

Course material:

- ccdproc manual, https://ccdproc.readthedocs.io/en/latest/
- specutils manual, https://specutils.readthedocs.io/en/stable/
- gaia_tools manual, https://github.com/jobovy/gaia_tools
- IRAF manuals, http://iraf.noao.edu/docs/docmain.html

Course work and grading:

This semester I am hoping to have 7 graded assignments and 1 presentation. Similar to previous semester's setup, the assignments will be due in 1 week. Each assignment will have extra credit attached. The first assignment on computational toolset will be reviewed but not graded. Each assignment carries 150 points + 30 points of extra-credit. The seminar presentation carries 150 points for the written part and 150 points for the presentation. The topics for the end-of-semester seminar are:

(1) Interferometry (2) Polarimetry (3) Multi-messenger astronomy
(4) Asteroseismology (5) [P,gr]ism spectroscopy (6) X-ray/diffraction spectroscopy
(7) Infra-red (balloon/airborne) astronomy

Please divvy up the topics among yourselves and let me know at least 1 month in advance so that we make a final schedule.

The grading will be done according to the following breakdown:

0-56%	F	68-72%	C-	84-88%	B
56-60%	D-	72-76%	C	88-92%	B+
60-64%	D	76-80%	C+	92-96%	A-
64-68%	D+	80-84%	B-	96-100%	A

Yes, looks scary. But remember: work hard, work consistently, seize all the extra credit opportunities, and there should be no reason for concern. Ultimately, the grade you earn is yours alone, I am just a scribe.

Attendance:

Regular attendance is essential for uninterrupted understanding of course material. Since this course covers a significant amount of content in a not-so-significant amount of time, each missed class will hurt. Really hurt. The topics are not trivial and continuous work is required to remain on top of things.

Please do not miss turning in assignments by the due date. If you must miss an assignment, you must inform me of that in advance, and you must have a written notice excusing it. Verbal excuses and call-the-health-center-and-you'll-see-I-was-sick-on-the-day-of-the-assignment are not admissible. There will be no exceptions. Provided that you follow these rules, I will excuse you from the assignment and calculate the average from the remaining assignments. Each day that the assignment is turned late incurs a 10% penalty. In other words: don't miss the assignment deadline. :)

The etiquette for using laptops and cell phones in class:

Use computers at will, even though they won't do you much good in class. You will treat them as your best friends outside of class anyway. You will be publicly flogged and/or burned at the stake if caught using computers/cell phones in class for texting, facebooking or web surfing.

Academic integrity and Special needs:

Finally, here goes the standard blurb: any violation of the Code of ethics will be grounds for failing the course. Any cheating, copying, duplication of work, etc, will get you into trouble. If you have any concerns whatsoever, come talk to me and I'm sure we'll be able to sort everything out.

It is the policy of Villanova University to make reasonable academic accommodations for qualified individuals with special needs. If you are a person with a special need please contact me after class or during office hours and make arrangements to register with the Learning Support Services by contacting 610-519-5176 or by emailing learning.support.services@villanova.edu. as soon as possible. Students approved for accommodations should use ClockWork to register and book tests.

Over and out. Let the fun begin! :)