ASTR 352L Current Developments in Astronomy Lab

ASTR 352L is designed to reinforce topics presented in ASTR 352 lectures. Through scientific experimentation, students will improve their understanding of basic concepts in astronomy while becoming trained on experimental techniques used in astronomy and increasing their insight on the foundations of the scientific process. Likely topics covered are the exploration of the sky, angular size, the spectrum, the Doppler effect, eclipses, moon phases, transits, day and night, the seasons, our Sun, the search of exoplanets, the state of the universe, and the age of the universe. *(Pre or co requisite: ASTR 352)*

Course Learning Outcomes:

By the end of the course, students will be able to:

1. Identify methods used to carry out advanced experimental research in astronomy
2. Collect data for experiments pertaining to astronomy
3. Analyse data, and draw conclusions using solid arguments and scientific judgement on experiments pertaining to astronomy
4. Write clear, organized, and illustrated technical reports on experiments and their findings pertaining to astronomy
5. Demonstrate effective teamwork skills with accountability in relation to the assigned personal outcomes

Textbook & Course Materials:

- "The Cosmos, Astronomy in the New Millennium", by Pasachoff and Filippenko, 4th Edition, Cambridge University Press, 2014, ISBN-13: 978-1107687561 ; ISBN-10: 110768756X

Course Content:

1. Introduction to laboratory, familiarization with lab processes and safety, and other related topics
2. Exploring the Sky
3. Angular Size
4. Doppler Effect
5. Our Solar System and the Seasons
6. Phases, eclipses, transits, day and night
7. Spectroscopy – Part I
8. Spectroscopy – Part II
9. The Expansion of the Universe