

**Syllabus  
Astronomy 101L  
Astronomy Laboratory  
(1-Credit Hour)  
UNMV, Spring 2018**

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### **COURSE DESCRIPTION**

Astronomy 101L is a laboratory course for the investigation of the principles and phenomena discussed in Astronomy 101 lecture course. This course includes laboratory experiments concerning the nature of light, laws of motion, and introduction to the internet and computer simulations of data taking and analysis similar to current research in astronomy.

PRE- or CO-REQUISITE: AST 101.

### **TEXT/MATERIALS**

NAAP computer based labs located on the web at:

<http://astro.unl.edu/naap/>

CLEA Computerized labs

<http://www3.gettysburg.edu/~marschal/clea/cleahome.html>

### **COURSE OBJECTIVES:**

- Concepts presented in Astronomy 101 will be reinforced through the completion of various laboratory investigations.
- The student will gain familiarity with common research tools and the methods by which astronomical research is conducted.
- The student will develop the skills necessary for making accurate measurements, collecting data and, ultimately, analyzing and interpreting this data.

## GRADE:

You may work in groups. Each group may be up to four students and no less than two students. Each student needs to submit one lab report.

Here is how each lab is graded:

Attendance:	30 points
Lab Report:	40 points
<u>Post Lab Quiz:</u>	<u>30 points</u>
Sum	100 points

There are no make-up labs. So. If you miss a lab, you can still work on it. However, you will lose the 30 points for none-attendance. Late submission of the lab reports will result in reduced points as much as 30-points for each week of being late.

In the interest of environmental conservation, lab manuals there will be no printed copies of lab manuals. You will need to write the answers clearly on a separate sheet of paper and submit them as your lab report.

The course grade is based on the average grade of all the labs and observing activities. 14 labs+2 observation+Final = 1700 points. Final Exam counts as one lab.	Grading Scale	
	90-100	A
	80-89.99	B
	70-79.99	C
	60-69.99	D
	Below 60	F

### Observing Projects:

1. Use a hardbound notebook to record the position of the setting sun for the term. You will need to record the position of the setting sun twice per week for the first 13 weeks. Once you are done, you will need to write a report and a conclusion as to what you observed about the setting sun. (100-points)
2. Any sky-observing lab requires a report of the objects observed and the telescopes used. (100-points each)
3. Attending a local astronomy club event (Star Party) such as TAAS (The Albuquerque Astronomy Society) or attending the Friday night observatory at the Main campus, or a planetarium counts as one lab. You will need to write reports based on your observations. (100-points each)

## Tentative SCHEDULE OF LABS BY WEEK:

Since the seeing in the sky may vary, the scheduled labs may change depending on the sky condition.

Week	Labs
1	Introduction to NAAP labs <a href="http://astro.unl.edu/naap/">http://astro.unl.edu/naap/</a> Basic Coordinates and Seasons Lab <a href="http://astro.unl.edu/naap/motion1/motion1.html">http://astro.unl.edu/naap/motion1/motion1.html</a>
2	Rotating Sky Lab <a href="http://astro.unl.edu/naap/motion2/motion2.html">http://astro.unl.edu/naap/motion2/motion2.html</a>
3	<b>TBA</b>
4	Motions of the Sun Lab <a href="http://astro.unl.edu/naap/motion3/motion3.html">http://astro.unl.edu/naap/motion3/motion3.html</a>
5	Lunar Phases Lab <a href="http://astro.unl.edu/naap/lps/lps.html">http://astro.unl.edu/naap/lps/lps.html</a>
6	Solar System Models Lab <a href="http://astro.unl.edu/naap/ssm/ssm.html">http://astro.unl.edu/naap/ssm/ssm.html</a>
7	Planetary Orbits Lab <a href="http://astro.unl.edu/naap/pos/pos.html">http://astro.unl.edu/naap/pos/pos.html</a>
8	Blackbody Curves & UBV Filters Lab <a href="http://astro.unl.edu/naap/blackbody/blackbody.html">http://astro.unl.edu/naap/blackbody/blackbody.html</a> <b>SPRING BREAK</b>
9	Hertzsprung-Russell diagram Lab <a href="http://astro.unl.edu/naap/hr/hr.html">http://astro.unl.edu/naap/hr/hr.html</a>
10	Eclipsing Binary Stars Lab <a href="http://astro.unl.edu/naap/ebs/ebs.html">http://astro.unl.edu/naap/ebs/ebs.html</a>
11	Cosmic Distance Ladder lab <a href="http://astro.unl.edu/naap/distance/distance.html">http://astro.unl.edu/naap/distance/distance.html</a>
12	Night lab
13	Night Lab
14	Night Lab
15	Night Lab
16	<b>Final Exam</b> <b>Tuesday, May 1<sup>st</sup>. (same time, same place)</b>