

# ASTR 110L INTRODUCTION TO ASTRONOMY - LAB

3 Credits, CRN 61511

Asynchronous Online Course – Check in Daily

**INSTRUCTOR:** Sean P. Moroney, Ph.D.  
**OFFICE HOURS:** WCC CAMPUS - Imiloa 118 Tuesdays 11:00 AM – 1:00 PM  
ONLINE - BlackBoard Collaborate To Be Scheduled  
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**EFFECTIVE DATE:** Fall 2017

## WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

*Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

## CATALOG DESCRIPTION

Laboratory course to accompany ASTR 110 for non-science majors.

### Activities Required at Scheduled Times Other Than Class Times

No additional activities

## ONLINE ACCESS

This course may be found at [windwardcc.instructure.com](http://windwardcc.instructure.com).

## STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Outline the development of astronomy from ancient times to present and explain the role of the scientific method in this historical context.
2. Describe and explain the apparent motions of the celestial bodies, especially as related to naked-eye observations.
3. Identify the appropriate instruments used by astronomers to understand the universe.
4. Outline the origins of our solar system and appraise the leading cosmological theories of the origin of the universe.
5. Describe the physical and chemical properties of the objects in our solar system and apply the concept of comparative planetology.
6. Describe the physical and chemical nature of stars, and especially our sun, and apply the astronomical techniques used to measure stellar properties.
7. Outline the evolutionary stages in a star's life and compare and contrast the structure of our Milky Way and other galaxies.
8. Apply astronomical concepts to the search for extraterrestrial life.

## COURSE SECTIONS/MODULES

The course is structurally divided into 3 Sections, each of which is composed of 5 Modules, within which various Course Tasks are to be carried out and completed. The Course Calendar below identifies those time segments.

**Section 1:** Here we focus on the Earth, Moon and Sun, their properties and interactions.

**Section 2:** The focus turns to the solar system, which includes the planets, their moons, and the other bodies orbiting the sun. Finally, the discoveries of exoplanets are reviewed.

**Section 3:** Lastly, we focus on the stars and their properties, and then finish with a review of the Milky Way and other galaxies.

## COURSE TASKS

The course tasks described here rely considerably upon active involvement and participation by all course members. Details on all these course tasks will be supplied separately.

- **Starry Night (SN) Exercises (35% of the Course Grade):**
  - In each Module, students will perform various tasks using the Starry Night software and will complete a brief Quiz on each.
  - There will be 42 such Exercises during the term. The Exercises will have Due Dates that are listed in the Table below. Announcements regarding Exercises opening and their Due Dates will be posted at regular intervals in the Course Canvas site.
  - Of the 42 Exercises, the lowest 4 grades will be dropped from the calculation of the Final Grade.
- **McGraw-Hill (MH) Exercises (35% of the Course Grade):**
  - In each Module, students will perform various tasks using the McGraw-Hill website and will complete a Lab Report on each. Insights gained from the Starry Night Exercises should be included in the Lab Reports.
  - There will be 18 such Lab Reports during the term. The Lab Reports will have Due Dates that are listed in the Table below. Announcements regarding Lab Reports opening and their Due Dates will be posted at regular intervals in the Course Canvas site.
  - Of the 18 Exercises, the lowest 2 grades will be dropped from the calculation of the Final Grade.
- **Summative Exams (30% of the Course Grade):**
  - At the end of each Section, a short Test will be made available. The Tests will measure the knowledge gained from the activities of each of the Sections.

## GRADING OF COURSE TASKS

The course grade will be computed as follows:

	Number	Max. Score
<b>Starry Night Exercises</b>	Best 38 of 42	35%
<b>McGraw-Hill Exercises</b>	Best 16 of 18	35%

<b>Summative Tests</b>	<b>3</b>	<b>30%</b>
	<b>Total =</b>	<b>100%</b>

**Course work submitted after specified Due Dates will be subject to a Lateness Deduction, which will generally be 10% per calendar day late after the Due Date. The Lateness Deduction may be excused for a valid documented reason.**

## GRADING SCALE

The final letter grade will be based on the total percentage that the student has earned from all the course tasks. Each letter grade and its respective level of achievement is provided in the following table:

<b>Letter Grade</b>	<b>Definition</b>
<b>A</b>	<b>90% - 100% of cumulative points possible</b>
<b>B</b>	<b>80% - 89.9% of cumulative points possible</b>
<b>C</b>	<b>70% - 79.9% of cumulative points possible</b>
<b>D</b>	<b>60% - 69.9% of cumulative points possible</b>
<b>F</b>	<b>below 60% of cumulative points possible</b>

Other grades may be assigned as listed in the WCC Catalog.

## LEARNING RESOURCES

### Software:

[Starry Night College](#)

### Course Canvas site:

[www.windwardcc.instructure.com](http://www.windwardcc.instructure.com): It is here that the course comes alive. Explore this site and ask questions about its features.

## ATTENDANCE

Checking in regularly and interacting with the Instructor and the class is expected. It will be important to observe the Due Dates for the course. A steady progress forward will get us all successfully to the goal.

## DISABILITIES ACCOMMODATION STATEMENT

*If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Akoakoa 213 for more information.*



**CALENDARS OF DUE DATES**

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**STARRY NIGHT (SN) & MCGRAW-HILL (MH)**  
**EXERCISES**

SN & MH				
MODULE	ASK	OPEN	DUE	CLOSE
	2	4-Sep	11-Sep	14-Sep
	3	18-Sep	1-Oct	4-Oct
	4	2-Oct	9-Oct	12-Oct
	5	16-Oct	29-Oct	1-Nov
	6	30-Oct	6-Nov	9-Nov
	7	13-Nov	26-Nov	29-Nov
	8	27-Nov	4-Dec	7-Dec

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## COURSE CALENDAR

### ASTR 110L OL – Fall 2017

<u>Module</u>	<u>Date</u>	<u>Section</u>	<u>Topics</u>
1	21 Aug – 3 Sep	Section 1	Earth, Moon, & Sun
2	28 Aug – 10 Sep		
3	4 – 17 Sep		
4	11 – 24 Sep		
5	18 Sep – 1 Oct		
	25 Sep – 1 Oct	Summative Exam 1	
6	25 Sep – 8 Oct	Section 2	The Solar System
7	2 – 15 Oct		
8	9 – 22 Oct		
9	16 – 29 Oct		
10	23 Oct – 5 Nov		
	30 Oct – 5 Nov	Summative Exam 2	
11	30 Oct – 12 Nov	Section 3	Stars & Galaxies
12	6 – 19 Nov		
13	13 – 26 Nov		
14	20 Nov – 3 Dec		
15	27 Nov – 10 Dec		
	4 – 10 Dec	Summative Exam 3	
	<b>15 Dec 2017</b>	<b>Fall Semester Ends</b>	