

Astronomy



How to Take This Course

Complete all the quizzes and the assignment in each unit. Once the quizzes for a unit are complete, you will have access to the unit test. You will have access to the final exam when all of the unit tests are complete, and the assignments are completed and graded.

Please allow for 2-3 days per assignment for grading. Read the full course instructions so you understand [how this course works](#).

-  How This Course Works
-  Instructions for the course
-  Ask The Teacher

Meet your teacher for this course and ask a question.

Unit 1. The Science of Astronomy

In this unit we will learn:

- What Astronomy is, its ancient beginnings, and a brief history of Astronomy.
- To make some naked eye observations.

1.1 What is Astronomy?

1.1 Quiz



1.2 Ancient Roots of Astronomy

1.2 Quiz



1.3 The History of Astronomy

1.3 Quiz	
1.4 Naked Eye Observations	
1.4 Quiz	
Unit 1 Assignment	

Unit 2. Types and Tools of Astronomy

- In this unit we will learn:
- The varying types of Astronomy and the different tools used in the science.
 - The history of the telescope, how they work, and how they have developed over time.
 - The practice of radio Astronomy.

2.1 History of the Telescope	
2.1 Quiz	
2.2 How Telescopes Work	
2.2 Quiz	
2.3 Radio Astronomy	
2.3 Quiz	
Unit 2 Assignment	

Unit 3. Space Exploration

- In this unit we will learn:
- A brief overview of the history of space exploration, including Voyage 1.
 - The potential future of human space exploration, and the challenges of interstellar travel.

3.1 A Brief History of Space Exploration	
3.1 Quiz	
3.2 Voyager 1	
3.2 Quiz	
3.3 The Future of Human Space Exploration	
3.3 Quiz	
3.4 The Challenges of Interstellar Travel	
3.4 Quiz	
Unit 3 Assignment	

Unit 4. Introduction to the Solar System

- In this unit we will learn:
- About our Solar System, including its formation.
 - How the earth orbits the Sun, and the path it takes.
 - About dwarf planets and the Pluto dilemma.
 - About the asteroid belt, comets, and the Oort cloud.
 - The differences in sizes of celestial bodies.

	4.1 Formation of the Solar System	
	4.1 Quiz	
	4.2 How the Earth Orbits the Sun	
	4.2 Quiz	
	4.3 Dwarf Planets and The Pluto Dilemma	
	4.3 Quiz	
	4.4 The Asteroid Belt	
	4.4 Quiz	
	4.5 Comets and the Oort Cloud	
	4.5 Quiz	
	4.6 Size Comparisons of Celestial Bodies	
	4.6 Quiz	
	Unit 4 Assignment	

Unit 5. Solar System: The Planets

- In this unit we will learn:
- About the solar system and the planets, including Mercury, Venus, Earth and the Moon, Mars, Jupiter, Saturn, Uranus, and Neptune.

	5.1 Mercury	
	5.1 Quiz	
	5.2 Venus	
	5.2 Quiz	
	5.3 Earth and Moon	
	5.3 Quiz	
	5.4 Mars	
	5.4 Quiz	
	5.5 Jupiter	
	5.5 Quiz	
	5.6 Saturn	
	5.6 Quiz	
	5.7 Uranus	
	5.7 Quiz	
	5.8 Neptune	
	5.8 Quiz	
	Unit 5 Assignment	

Unit 6. The Stars as Seen From Earth

In this unit we will learn:

- To view the stars from the perspective of Earth, and how to interpret star charts.
- The celestial coordinate systems and stellar magnitudes.
- To measure distances to stars.
- About the Messier catalog.

 6.1 Star Charts

 6.1 Quiz



 6.2 Celestial Coordinate Systems

 6.2 Quiz



 6.3 Stellar Magnitudes

 6.3 Quiz



 6.4 Measuring Distances to Stars

 6.4 Quiz



 6.5 Messier Catalog

 6.5 Quiz



 Unit 6 Assignment



Unit 7. Stars and Spectroscopy

In this unit we will learn:

- The basics of stars and spectroscopy, including what stars are and stellar evolution.
- To classify stars, and the Hertzsprung-Russell Diagram.
- About binary star systems and star clusters.

 7.1 What are Stars?

 7.1 Quiz



 7.2 Stellar Evolution

 7.2 Quiz



 7.3 Stellar Classification

 7.3 Quiz



 7.4 The Hertzsprung-Russell (H-R) Diagram

 7.4 Quiz



 7.5 Binary Star Systems

 7.5 Quiz



 7.6 Star Clusters

 7.6 Quiz



 Unit 7 Assignment



Unit 8. Galaxies

In this unit we will learn:	
- The basics of galaxies, including their types and classifications. The Milky Way galaxy and the Lanaiakea Supercluster. - About the Hubble deep field and ultra deep field, and about galactic collisions.	
 8.1 Galaxy Types and Classification	
 8.1 Quiz	
 8.2 The Milky Way Galaxy and Laniakea Supercluster	
 8.2 Quiz	
 8.3 Hubble Deep Field and Ultra Deep Field	
 8.3 Quiz	
 8.4 Galactic Collisions	
 8.4 Quiz	
 Unit 8 Assignment	

Unit 9. Astrobiology and the Search for Life in the Solar System

In this unit we will learn:	
- About astrobiology and the status of the search for life in the solar system. - About Europa and Enceladus, and their potential for harboring the existence of life.	
 9.1 What is Astrobiology?	
 9.1 Quiz	
 9.2 The Search for Life in the Solar System: Europa	
 9.2 Quiz	
 9.3 The Search for Life in the Solar System: Enceladus	
 9.3 Quiz	
 Unit 9 Assignment	

Unit 10. The Search for Life Elsewhere

In this unit we will learn:	
- More about the search for life, and the Drake equation. - About exoplanets, and methods for detecting them.	
 10.1 The Drake Equation	
 10.1 Quiz	
 10.2 Exoplanets	
 10.2 Quiz	
 10.3 Methods of Detecting Exoplanets	
 10.3 Quiz	
 Unit 10 Assignment	

Unit 10 Assignment		
Unit 11. Space and its Properties		
In this unit we will learn:		
- The properties of space and interstellar medium. - About the principles of Einstein's theory of relativity, and the of Spacetime. - About dark matter and dark energy. - The Higgs Field about elementary particles.		
11.1 The Interstellar Medium		
	11.1 Quiz	
11.2 Principles of Spacetime: A Very Basic Introduction to Einstein's Relativity		
	11.2 Quiz	
11.3 Dark Matter and Dark Energy		
	11.3 Quiz	
11.4 Cutting Edge Science: The Higgs Field and Elementary Particles		
	11.4 Quiz	
Unit 11 Assignment		

Unit 12. Exotic Objects and Phenomena		
In this unit we will learn:		
About exotic objects and phenomena, including supernovae, neutron stars, black holes, and quasars.		
12.1 Supernovae		
	12.1 Quiz	
12.2 Neutron Stars		
	12.2 Quiz	
12.3 Journey into a Black Hole		
	12.3 Quiz	
12.4 Black Holes and Quasars		
	12.4 Quiz	
Unit 12 Assignment		

Unit 13. The Universe		
In this unit we will learn:		
- Key characteristics of the universe, including how it began and how it continues to expand. - Common misconceptions about the universe. - That the universe is accelerating, and the three potential fates of the universe.		
13.1 The Beginning of the Universe		
	13.1 Quiz	

 13.2 The Expanding Universe	
 13.2 Quiz	
 13.3 Misconceptions About the Universe	
 13.3 Quiz	
 13.4 The Accelerating Universe	
 13.4 Quiz	
 13.5 The Three Fates of the Universe	
 13.5 Quiz	
 Unit 13 Assignment	

Final Exam

Once you have completed all of the unit tests **and** all of your assignments have been graded, the final exam will become visible.

Warning: You have only ONE attempt at the final. You must score 60% or higher in the final to receive credit for the course!

Are you ready to take the final? We highly recommend you take the [practice final](#) first and if you are weak in any area, review the relevant course material again. You have unlimited attempts at the [practice final](#); it will help you to prepare.

Good Luck!!

 [Practice Final](#)

Course Completion

The "Certificate" and "Transcript Request" links below are not active, they cannot be accessed until you have achieved at least 60% on both the final and for the course total. Upon satisfying these two requirements, the links will become active and you can use them.

Before you go, we would appreciate your opinion on the course, please take 1 minute to complete the feedback form. We hope you enjoyed this course!

 [Course Feedback](#)

Thank you for taking this course! Let us know what you think about it.

 [Request a Course Completion Record](#)

If you need SVHS to send proof of your course completion directly to your school complete this form.

Restricted Not available unless:

- You achieve a required score in **Course total**
- You achieve a required score in **Final Exam**