



IMPERIAL VALLEY COLLEGE

### Basic Course Information

Semester:	<b>FALL 2023</b>	Instructor Name:	<b>Cristopher Luna</b>
Course Title & #:	<b>ASTR 100: Principles of Astronomy</b>	Email:	<b>cristopher.luna@imperial.edu</b>
CRN #:	<b>11110</b>	Webpage (optional):	
Classroom:	<b>2727</b>	Office #:	<b>2767</b>
Class Dates:	<b>08/14/23 – 12/09/23</b>	Office Hours:	<b>M/W 9:45 AM – 10:45 AM Tuesday 1 PM – 2:30 PM Thursday 1 PM – 1:30 PM</b>
Class Days:	<b>Tuesday &amp; Thursday</b>	Office Phone #:	<b>TBA</b>
Class Times:	<b>8:00 AM – 9:25 AM</b>	Emergency Contact:	<b>Silvia Murray: 760-355-6201</b>
Units:	<b>3</b>	Class Format/Modality:	<b>Face-to-Face</b>

### Course Description

An introduction to the principles of astronomy, including physical evolution, tools of the astronomer, the sky, the solar system, the stars, the galaxies and the universe. (CSU/UC)

### Course Prerequisite(s) and/or Corequisite(s)

None

### Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Comprehend the workings of the seasons around the Earth and their intrinsic cause.
2. Determine the phases of the Moon based on its location with respect to the Earth and the Sun.
3. Conceptualize, both in physical size and in time of formation, the differences between the Solar System and the Universe.

### Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Demonstrate knowledge of the periodic motions of objects on the celestial sphere and their observable effects.
2. Demonstrate knowledge that astronomers locate objects in the sky through the use of a celestial coordinate system.
3. Demonstrate knowledge of the history and theories of Astronomy. The student will differentiate between the ideas of Brahe, Kepler, Galileo, Newton, and others.
4. Discuss the Sun as the center of our solar system, the scale of our solar system, and the origin of the solar system.
5. Describe the similarities and differences between the terrestrial and jovian planets, both as categories of planets and on an individual basis.
6. Describe the physical evolution of stars: their process of formation, their main-sequence lifetimes and means of energy production, and their final evolutionary processes which lead to the various types of stellar remnants.
7. Describe the basic components of the Milky Way galaxy and demonstrate knowledge of the different types of galaxies, to understand that galaxies are fundamental units of the universe, and the origins of galaxies.



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8. Discuss the scientific theory for the physical evolution of the Universe, from its beginning in what is known as the "Big Bang" through to its ultimate fate of being "open" or "closed".

### Textbooks & Other Resources or Links

We are using a free textbook for this course through OpenStax! You can view the PDF online at any time or you can choose to purchase a printed copy online or from our bookstore. Printed copies are very affordable if you prefer physical textbooks. Make sure to use the links on the OpenStax website if you're purchasing it from Amazon or one of their partners.

**Astronomy (2nd ed.). Openstax (FREE). Fraknoi-Morrison-Wolff.**

**Link to book:** <https://openstax.org/books/astronomy-2e/pages/1-introduction>

#### **Other options:**

The Essential Cosmic Perspective (9th ed.). Pearson. Bennett-Donahue-Schneider-Voit.

### Course Requirements and Instructional Methods

This course will be taught entirely in-person, make sure you're on time every session!

**Class Activities:** There will be several in-class activities that you'll need to complete in groups for this class. In-class assignments may be written summaries, short calculations, discussions, etc., which will be due at the end of class. This will also include your participation in the activities and engagement during lectures.

**Quizzes/Homework:** There will be 8 quizzes on canvas that you'll be responsible for, each worth 10 points for a total of 80 points. Although there are 8 quizzes, I will drop your lowest score, and everyone gets 2 attempts. Quizzes will be on the topics/chapters covered in lecture for that week and will open automatically every Friday. Quizzes will be available on Friday at 8 AM and close two days later, Sunday at 11:59 PM.

**Midterm Exams:** There will be **2 Midterm Exams** worth 100 points each during the semester. Midterms will be mostly multiple choice but may include other formats such as T/F and fill in the blank questions. Each Midterm will cover specific chapters and will not be cumulative. You will have the entire class period to complete your exam, please bring a pencil and a Scantron 882-E. Make sure it's an official "Scantron Brand" scantron, other brands do not work on our grader.

**Final Exam:** You will have a comprehensive final exam covering material from every chapter we studied worth 100 points. The Final Exam will be mostly multiple-choice questions but may also include other question formats such as true/false, matching, or fill in the blank. You will have the entire class period to complete your exam, please bring a pencil and a Scantron 882-E. Make sure it's an official "Scantron Brand" scantron, other brands do not work on our grader.

**\*IMPORTANT\*** There will be no make-up assignments or exams unless you have a verifiable compelling reason. If you have documentation demonstrating unforeseen and extreme circumstances for yourself or other family members, please contact me as soon as possible. It is your responsibility to notify me and provide me with those documents so we can arrange an assignment make-up. Forgetting to turn in assignments, not checking e-mail, planned events, etc. are not valid excuses. **No Exceptions.**

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## Course Grading Based on Course Objectives

**Class Activities:** In-class assignments (5 %)

**Quizzes/Homework:** 8 Canvas Quizzes, 10 points each, 80 points total (30%)

**Exams:** 2 Exams, 100 points each, 200 points total (40%)

**Final Exam:** 1 comprehensive final exam, 100 points total (25%)

Grading Scale:

**A:** 90% - 100%

**B:** 80% - 89.9%

**C:** 70% - 79.9%

**D:** 60% - 69.9%

**F:** 0% - 59.9%

## Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

## Course Policies

**Initial Class Attendance:** Students are required to attend the first session of the course or complete the first mandatory activity for online classes. Failure to do so will result in automatic removal from the class roster. Students seeking readmission will follow standard procedures outlined in the General Catalog for adding classes.

**Regular Attendance:** Attending classes is crucial for grasping the content and concepts covered. Students are expected to attend all class sessions, actively participate in discussions, and engage in class activities. I will keep a record of attendance during each class. Continuous, unexcused absences that exceed the equivalent of 3 class hours per week may result in the student being dropped from the course.

**Excused Absences:** Students are allowed a reasonable number of excused absences due to illness, emergencies, or officially approved events (conferences, contests, field trips). Proper documentation is required. In cases of excused absences, you are responsible for obtaining missed class materials, notes, and assignments from classmates. It's advised to communicate with your peers to stay up-to-date on class content.

## Classroom Conduct:

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Our class thrives on a respectful and collaborative classroom atmosphere. Your engagement and behavior significantly impact the learning experience. Please approach each session with respect for me (your instructor), peers, and the content. Actively participate in discussions, foster inclusivity, and avoid distractions from personal devices. Disruptive behavior, offensive language, and personal attacks have no place in our environment. Maintain focus during lectures, raise questions appropriately, and embrace a supportive attitude.

Any distractions will be addressed with a warning, and repeated disruptive behavior may lead to temporary removal from the classroom. Let's work together to ensure a positive and enriching learning environment for everyone involved.

### **Academic Integrity:**

Maintaining the highest standards of academic integrity is paramount here at Imperial Valley College. Plagiarism, which includes presenting someone else's work, ideas, or words as your own without proper attribution, will not be tolerated. Any form of academic dishonesty undermines the learning process and diminishes the trust within our community of learners. It is essential that all assignments and contributions reflect your genuine efforts and understanding. Upholding academic honesty not only preserves the integrity of your work but also respects the intellectual property of others. Any instances of plagiarism will result in appropriate actions, following the college's established guidelines. Any work that is found to be plagiarized will result in an automatic score of zero without the opportunity to resubmit the assignment.

### **Tips**

- Make sure to be on time every day!
- Read the lecture notes online after class, it helps you remember what we covered!
- Read the book! There's a ton of figures and links for you to explore the subject and get clarification on difficult concepts. You can go at your own pace and supplement the book with your notes.
- Pay attention during lectures and take notes! The slides will be made available but if you're not actively taking notes, it's harder to retain information.
- Come to office hours!

If you're struggling with the class, please let me know, there may be additional resources that I can provide you with to ensure that you can succeed in this class!

### **IVC Student Resources**

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

### **Anticipated Class Schedule/Calendar**

<b>Date or Week</b>	<b>Lecture Topic (Tuesday)</b>	<b>Lecture Topic (Thursday)</b>	<b>Assignments</b>
Week 1 08/14 – 08/18	Chapter 1: A Brief Tour	Chapter 2: The Sky	Canvas Quiz 1
Week 2 08/21 – 08/25	Chapter 3: Gravity	Chapter 4: Earth and Moon	Canvas Quiz 2
Week 3 08/28 – 09/01	Chapter 5: Spectra	Chapter 6: Telescopes	Canvas Quiz 3
Week 4 09/04 – 09/08	Exam 1: Chapters 1 - 6	Chapter 7: Intro to the Solar System	
Week 5 09/11 – 09/15	Chapter 8: Earth	Chapter 9 & 10: Terrestrial Planets	Canvas Quiz 4
Week 6 09/18 – 09/22	Chapter 10 & 11: Jovian Planets	Chapter 12: Moons	Canvas Quiz 5

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<b>Date or Week</b>	<b>Lecture Topic (Tuesday)</b>	<b>Lecture Topic (Thursday)</b>	<b>Assignments</b>
Week 7 09/25 – 09/29	Chapter 13: Outer Solar System	Chapter 14: Origin of Solar System	
Week 8 10/02 – 10/06	Exam 2: Chapters 7 - 14	Chapter 15 & 16: The Sun	Canvas Quiz 6
Week 9 10/09 – 10/13	Chapter 17: Analyzing Starlight	Chapter 17 & 19: Celestial Census	Canvas Quiz 7
Week 10 10/16 – 10/20	Chapter 20: Gas & Dust	Chapter 21: Birth of Stars	Canvas Quiz 8
Week 11 10/23 – 10/27	Chapter 22 & 23: Life and Death of Stars	Exam 3: Chapters 15 - 23	
Week 12 10/30 – 11/03	Chapter 24: Black Holes	Chapter 25: The Milky Way	Canvas Quiz 9
Week 13 11/06– 11/10	Chapter 26: Galaxies	Chapter 27: Quasars and Massive Black Holes	Canvas Quiz 10
Week 14 11/13– 11/17	Chapter 28: Evolution of Galaxies	Chapter 29: The Big Bang	Canvas Quiz 11
Week 15 11/20– 11/24	<b>Thanksgiving Break! No Classes!</b>	<b>Thanksgiving Break! No Classes!</b>	
Week 16 11/27– 12/01	Exoplanets & Life in the Universe	Major advances in Astronomy	
Week 17 12/04– 12/08	Final Exam Review	<b>Final Exam</b>	

**\*\*\*Subject to change without prior notice\*\*\***