



## **AST 111 - Introduction to Solar Systems Astronomy Spring 2018**

### **I. COURSE OVERVIEW**

In this introductory 7.5-week, four-credit lecture and laboratory course, we will explore the origins, structure, contents, and evolution of our solar system and other solar systems. We will also cover aspects of the history of astronomy, gravity, light, and telescopes.

#### **Learning Objectives and Topics**

By the end of this course you will be able to:

- Describe the origins, structure, contents, and evolution of our solar system.
- Use algebra and order-of-magnitude estimates to obtain quantitative, scientific results.
- Give clear explanations of physical phenomena.

Topics:

Week 1

Our View From The Garden  
Patterns in the Dark Night Sky

Week 2

Waltz Of Our Planets  
The Gravity Of The Situation

### Week 3

Catching Planets With A Noose of Light  
Tools Of The Trade

### Week 4

Family Portraits  
Origins

### Week 5

Comparative Planetology  
Classical Gases

### Week 6

Lords Of The Rings  
Vagabonds Of Our Solar System

### Week 7

Finding Habitable Worlds  
Interstellar Travel

## **II. WEEKLY ACTIVITIES AND TIME COMMITMENT**

Class preparation means completing the assigned readings and reviewing all information required for that week. Attendance in an online course means logging into edX on a regular basis and participating in all of the activities that are posted.

This 7.5--week, four-credit course requires 180 hours of student work. Therefore, expect to spend approximately 20-25 hours per week preparing for and actively participating in this course. Class preparation means reviewing all material and completing all assessments required in a given week.

### **Course Content and Assignments**

## Video and Audio

- **Lectures** from your instructional team on specific topics, designed to help you learn key concepts
- **Optional videos** to expand your knowledge on various topics

## Readings

Our course makes use of open educational resources (OERs), no purchase necessary. You will find required weekly readings on the subject matter, along with optional items.

## Graded Assignments

Graded assignments are required, and count toward the final grade for ID Verified students planning to earn either credit or a verified certificate. Students *must* submit *all* assignments via the edX platform unless otherwise instructed. Each assessment has submission instructions.

**Quizzes - 30%:** There are **3** quizzes, one every two weeks. **Quizzes 1 and 3** are open book, but must be completed by you (see the Academic Integrity section). For ID Verified students interested in taking the course for credit, Quiz 2 is proctored. For all students, **Quiz 2** is timed, and closed book, this means you must not access any of the course materials or your notes in order to answer questions\*. The quizzes have the same style and content level as the homework. The three quizzes are 30% of your total grade. You may take a quiz at any time during the window when they are available; however, once you start a Quiz, you will have three hours to complete it.

**Final Exam - 25%:** The final exam is 25% of your total grade. Like Quiz 2, the Final is a proctored exam. (Again, proctoring is required for ID Verified students interested in pursuing credit. More information follows below, as well as in both the “Before the Course Begins” and in the “Final Exam Overview” sections of the course.) The final exam will have the same style and content level as the homework and quizzes. You may take the final exam at any time during the open

window; however, once you start, you will have three hours to complete it. Proctoring information will be provided.

**Homework - 17%:** There are **14** homework assignments for the course. They will count as 17% of your total grade. Each question will be worth one point. You may collaborate on homework assignments in groups.

**Labs - 15%:** There are **7** labs for the course. Each question within a lab will be worth one point. There is a Discovery Lab associated with each lab, and the entire Discovery Lab is worth one point. The Discovery Lab quizzes offer the opportunity to develop practical, critical thinking, and job skills. These labs count as 15% of your total grade.

**Outdoor Activities - 3%:** There are **3** outdoor activities for the course. These will be self-assessed and you should provide a description and photo of your experiences. There are worth 3% of your total grade.

**Cerego Content Review - 5%:** There are **14** interactive content review exercises for the course; there are two per week. They will count as 5% of your total grade.

**Design Project - 5%:** There is a design project worth 100 points that will count as 5% of your total grade. Weekly readings will help you determine a topic for your design. You will pick a topic as the focus for your design related to one of the course learning objectives listed below:

- Describe the origins, structure, contents, and evolution of our solar system.
- Use algebra and order-of-magnitude estimates to obtain quantitative, scientific results.
- Give clear explanations of physical phenomena.

How you design and develop the project will be your choice. Some suggestions include: paintings, illustrations, sculptures, magazine article, blog post, written report, music, podcast, a video, a book report. The project is due the final week of the course. You will submit the project (by link if it is an external audio, video, or

large image file), as a self assessment. In addition, if you would like to share your project, you can include it on the discussion board for peer feedback. Additional information will be provided in the course.

\*ID verified students will be prompted to take Quiz 2 and the Final Exam in a proctored environment.

### **Ungraded Assignments**

These assignments are optional but strongly encouraged in order to maximize your learning, as well as interaction with your peers and course team.

**Discussion Forums:** These are opportunities to ask questions and to share information and experiences with your classmates. These boards are monitored, and the course team will help to answer content questions, but it is mostly a chance for you to interact with one another. (Remember to keep the conversation civil, and free of harsh judgement.)

**Introductions:** Please visit the “Introduce Yourself” subsection located in “Before the Course Begins,” to tell the course team and class a little bit about yourself, your community, and your experience with astronomy (if any), in the course’s Introduce Yourself discussion forum.

## **III. COURSE REQUIREMENTS AND COMMUNICATION**

### **Course Requirements**

**Recommended Prior Knowledge:** To be successful in this course, we recommend English language fluency, computer literacy, and secondary school-level Algebra.

**Online Course Requirements:** You will find all content and learning activities within the edX platform. There will be at least one, optional, live session via YouTube Live. (Live session(s) are recorded, and students can watch after the initial broadcast.) All course interactions use Internet technologies. It is your

responsibility to watch all required videos and assigned readings, and complete all graded assessments (quizzes, exams, online homework, laboratory exercises, etc). You are encouraged to interact with your peers and course team in the discussion forums, and ask questions there as well.

### **Course Communication**

All communication will take place in discussion boards, course updates, and on the course home page.

Each week, there will be a dedicated discussion board where you can post general questions and comments about the subject matter, as well as any direct inquiries for the instructor and course team. Please use this forum to ensure timely response.

## **IV. STUDENT EVALUATION**

Here is the breakdown of your grade:

<b>Item (# of assignments)</b>	<b>Weight</b>	<b>Proctored</b>
Homework (14)	17%	No
Labs (7)	15%	No
Outdoor Activities	3%	No
Quiz 1	10%	No
Quiz 2 (Timed - 3 hours)	10%	Yes (ID Verified)
Quiz 3	10%	No
Design Project (1)	5%	No
Content Mastery (14)	5%	No
Final Exam (Timed - 3 hours)	25%	Yes (ID Verified)

**Final grades** are based on the number of points you earn on the course activities listed above. There is no extra credit available. You can see your percentage of the total points to date on your edX progress page.

Final scores will be absolute as follows:

A = 90% or higher

B = 80% or higher

C = 70% or higher

There will be no + or - added to grades.

**You must pass the course with a grade of C (70%) or higher, and be on the ID verified track, in order to be either eligible for credit from Arizona State University or an edX verified certificate.** \*Please note that exams that fail the proctoring review will result in an assignment grade of 0. A student earning an overall grade of a C or higher who fails proctoring is not eligible for a certificate. If your proctored exam is marked suspicious, *you have up to 75 days from when you completed the exam to appeal the decision. After that time, appeals will not be accepted or reviewed.*

**Note: You have up to one year to purchase credit after you become eligible. Please see Section IX, below, "Taking this Course for ASU Credit or edX Verified Certificate," for specifics on fees and deadlines.**

## V. GFA POLICIES

**Assignment Deadlines:** This is an online course. Your instructional team will provide all content and learning activities on our edX platform. All course interactions will use Internet technologies; it is your responsibility to review all content, fulfill all assignments on time, and ask any questions you have in our designated discussion area. For more information, please see section VI, "UTC Time Zone" below.

Late assignments will not be accepted at any point during the course. We recommend that you establish your time management schedule for this course during the first two days that the course is open to meet all course obligations. For time management tips, sign up for the [GFA Orientation course](#) and review the Time Management section. Please also review our “Tips for Student Success” video in the “Before the Course Begins” section.

**Subject to Change Notice:** This syllabus is to be used as a guide only. Information contained here, such as assignments, grading scales, deadlines, and other materials are subject to change. It is your responsibility to read the course announcements regularly to be aware of any changes or updates in the course.

**Academic Integrity:** Academic honesty is expected of all students in all coursework and exams. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification, and dismissal. For more information, review ASU’s [Academic Integrity Policy](#) and [edX’s Terms of Service](#).

**Prohibition of Commercial Note Taking Services:** In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

## VI. UTC TIME ZONE

To accommodate students from across the globe, all deadlines are posted in UTC time, the global standard. Please see the “Course Information and Support” or

“Important Deadlines” subsections in “Before the Course Begins” for a detailed explanation.

Remember, it is your responsibility to understand UTC and determine the due dates and times for your time zone. Make sure you address this, ideally before the first set of assignments is due, and definitely before the midterm, to avoid any unnecessary stress. **Deadline extensions will *NOT* be granted for misunderstanding UTC time.**

## VII. GENERAL AND TECHNICAL REQUIREMENTS

This course is best accessed by a reasonably modern browser on a laptop or desktop computer. Course videos can be accessed using the edX app for iPhone and Android. For more information about mobile, review [edX on the Go](#).

Students who are interested in taking the course for credit will need additional computer requirements and skills to access the remote proctor service. Please see the [Software Secure](#) site, which details Proctor Now’s requirements.

If you are not certain about your system, it is highly recommended that you complete the practice proctored exam to confirm system compatibility.

## VIII. GENERAL AND TECHNICAL ASSISTANCE

**Student Support and General Technical Issues:** Please access the [edX Help Center](#) for solutions to common problems. Please also be sure to review our “Before the Course Begins” section for further information. If you are still experiencing issues, you can reach out to [gfa@edx.org](mailto:gfa@edx.org).

**Accessibility:** If you are a student with a disability, and you would like to request an accommodation, please send an email to [accessibility@edx.org](mailto:accessibility@edx.org).

**Proctoring:** For students taking the midterm and final exams proctored, please do the following to address any technical issues:

1. Contact our proctoring partner, Software Secure, at 1-855-436-2039 for US and Canada and 1-617-658-2879 for International (Outside US and Canada).
2. Send an email to edX at [gfa@edx.org](mailto:gfa@edx.org).

*Both Software Secure and edX must be informed of the issue to ensure resolution.*

Please put “Problem with proctored exam” in the subject line. Also, provide as much information as possible, including screenshots, error messages, and urgency due to upcoming deadlines.

## **IX. TAKING THIS COURSE FOR ASU CREDIT OR edX VERIFIED CERTIFICATE**

**ASU Credit:** Students wishing to take this course for ASU credit are required to do the following:

- ID verify by January 19, 06:59 UTC
- Opt in to proctoring for ***both the midterm and final exams\****
- Pass the course with a C or better (70% or higher)

**Verified Certificate:** Students wishing to take this course for a verified certificate are required to do the following:

- ID Verify by January 19, 06:59 UTC
- Pass the course with a C or better (70% or higher)\*

**Cost:** The course is 3 credits.

- ID verification: \$49 USD/course
- Credit: \$600 USD/course.

***\*Please note that exams that fail the proctoring review will result in an assignment grade of 0.***

***\*A student earning an overall grade of a C or higher who fails proctoring is not eligible for a certificate.***

**Important:** Provided you have met all requirements for this course, you can purchase credit (\$600 USD) from ASU for **up to one year** after you become credit eligible.

Your date of eligibility **may differ** from the course end date or the date certificates are issued. Please visit your course progress page, specifically the “Requirements for Course Credit” section, to see the status of your credit eligibility.

Please review “Important Information on Credit Eligibility and Proctoring” in your “Before the Course Begins” section for additional details.

**Note:** Potential limitations of internet connectivity by some countries are beyond the control of Arizona State University and may limit the ability of an ID Verified student residing in those countries to complete all the assessments, and therefore potentially impede the eligibility to earn college credit. Students impacted by such limitations should contact [gfa@edx.org](mailto:gfa@edx.org).