American Public University System

The Ultimate Advantage is an Educated Mind

School: School of Science and Technology
Course Number: SPST635
Course Name: History of Astronomy
Credit Hours: 3
Length of Course: 8 weeks
Prerequisite: SPST501

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Course Description (Catalog)

This course reviews the historical significance and discoveries made by astronomers ranging from the early Greeks and Mayans through the discoveries of recent times using modern techniques and tools such as the Hubble Space Telescope. As both a history class and a science class, this course bridges the two by examining the interconnection of the events and people involved in astronomy through the ages as well as analyzing the observations that have formed

the core of humanity's effort to understand and describe what we see around us. The majority of the course materials are primary sources, as students will read many of the original papers that have brought us to our current understanding of the universe. A major component of this course is learning to interpret history for different audiences in a wide variety of writing assignments.

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Course Scope

This course covers a wide range of information in the history of astronomy, from prehistoric times through the present. We will discuss key individuals that were instrumental to the early discoveries within the solar system, the galaxy and the universe. We will also learn of the tools, techniques and systems that have evolved throughout the centuries leading to these discoveries, as well as some of our current day astronomy techniques.

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Course Objectives

After successfully completing this course, you will be able to

- CO-1: Distinguish the key individuals and artifacts in the history of astronomy throughout the world and their major scientific contributions.
- CO-2: Examine the nature of the historical study of science, including the importance of avoiding the use of “20/20 hindsight,” or applying concepts not available in the past.
- CO-3: Evaluate the context in which key historical astronomers operated and achieved developments in astronomy.
- CO-4: Analyze how physical laws were discovered and how this knowledge has enabled astronomers to construct a worldview of the structure and history of the universe.
- CO-5: Illustrate selected aspects of the frontiers of modern 20th and 21st century science, including the methods and instrumentation used.
- CO-6: Apply a variety of methods of historical research, writing, and critique to write about topics within the history of astronomy for different types of audiences.

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Course Delivery Method

This course delivered via MyClassroom will enable students to complete academic work in a flexible manner, completely online. Course materials and access to MyClassroom will be made available to each student. Online assignments are due by Sunday evening of the week as noted and include examination, and individual assignments. Responses to Forum questions

(accomplished in groups through a threaded forum) need to be posted by Wednesday and responses before Sunday.

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Course Resources

Required Course Textbooks

- Hoskin, Michael. *The History of Astronomy: A Very Short Introduction*. Oxford University Press, 2003.
- Bartusiak, Marcia. *Dispatches from Planet 3:* Thirty-Two (Brief) Tales on the Solar System, the Milky Way, and Beyond. Yale University Press, 2018
- Bartusiak, Marcia. *The Day We Found the Universe*. Random House, 2009.

Additional Required Readings

- Additional lecture materials such as text and/or video links are located online in the classroom in each week's lesson.

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Evaluation Procedures

Please see the Student Handbook to reference the University's grading scale. The table below shows the points for each assignment:

Assignments	% of Course Grade
Introduction Forum	1%
Discussion Forums (6 @ 2% each)	12%
Writing Assignments (7 @ 9% each)	63%
Writing Assignment Forums (7 @ 0.5% each)	3.5%
Final Forum Assignment	0.5%
Exam 1	10%
Exam 2	10%
Total Course Points	**100%**

1. **Introduction Forum:**
   In Week 1, you are required to post in the introductions forum. Details about this posting are in the description at the top of that forum.

2. **Discussion Forums:**
   Each week you will post and discus topics in response to the forum prompt. More details are posted in the **f**orum area of the class.

3. **Writing Assignments:**

Discussions about science throughout history have come to us in many forms, especially now in the "internet age." As such, you will experiment in this class with writing about what you are learning in a variety of ways. Rather than a "research paper" that tends to be written just for the instructor to read, you will be writing for different audiences each week. Research into how people learn has shown that people often learn best when they are explaining things to others, so that's what you'll be doing. Brief explanations of each style are below; please see the weekly lessons for full details and requirements.

i. **Writing Assignment #1 - Wire Service/Newspaper Article:**

For your first writing assignment, choose one of the tales in *Dispatches from Planet 3*, and write a description of it for a non-scientific audience as if you were writing a wire service or newspaper article about a new discovery. More details on this assignment will be in the lesson area of the classroom.

ii. **Writing Assignment #2 - Blog:**

Your assignment is to write a blog entry describing one of the papers in *Dispatches from Planet 3*, as if you were writing at the time the paper was first published. The audience for blogs tend to be scientifically literate, but science blogs are typically written to be accessible to a wide variety of backgrounds. More details on this assignment will be in the lesson area of the classroom.

iii. **Writing Assignment #3 - Web Page for Kids:**

One of the best ways to demonstrate understanding of important concepts is to explain them to a child. For this assignment, you need to create an imaginary web page (though it can be a real one, if you have that capability) to explain one of the concepts we've covered in class to a young audience.

More details on this assignment will be in the lesson area of the classroom.

iv. **Writing Assignment #4 - "Astrobites":**

For this assignment, you will discuss one of the tales in Dispatches from Planet 3 in the style of an article recap on astrobites.org. The purpose of this article is to set a piece of astronomical work in its historical context and explain its significance to a non-specialist STEM audience. More details on this assignment will be in the lesson area of the classroom.

v. **Writing Assignment #5 - Microblog:**

Some people have set up Twitter accounts for historical persons or fictional characters, and tweet in the persona of those individuals. Some of these accounts can be quite entertaining to follow. Your assignment is to write a series of tweets in the persona (and style, to the extent you are able) of one of the historical astronomers we have covered in this class. More details on this assignment will be in the lesson area of the classroom.

vi. **Writing Assignment #6 - Presentation:**

In Week 6, you'll give a presentation with accompanying "script" using any presentation software you are comfortable using (PowerPoint, Keynote, or Prezi). Your audience for this presentation is college students, and you should discuss one of the tales in Dispatches from Planet 3 as if it were a new discovery that you want to introduce to the students. More details on this assignment will be in the lesson area of the classroom. vii. **Writing Assignment #7 - Book Review:**

Your final writing assignment will be a book review on Bartusiak's *The Day We Found the Universe* book or other book you have selected with approval from the instructor. This is not a "book report." Rather, this is a professional book review, as you might find in a magazine or journal. The idea here is to *briefly* summarize the big ideas of the book, and then the meat of the review is a critical analysis. An important part of book reviews is the reviewer's ability to provide a comprehensive evaluation of the book in a concise manner. More details on this assignment will be in the lesson area of the classroom.

4. **Writing Assignment Forums:**
   You will have six forums discussing your writing assignments and claiming which topic you will write about for that week's assignment. These discussions will focus on the selected topic. They can also be used to share resources and strategies for the assignment and get feedback from the instructor regarding that week's work.

5. **Final Forum Assignment:**
   For your last forum assignment, please post a reflective discussion on the course including what you enjoyed most and least about the course, any constructive feedback, and more. Responses to classmates are optional for this assignment.

6. **Exams:**
   There will be two exams, one in Week 5 and one in Week 8. The first exam will cover the reading from weeks 1-4, and the second will cover the reading from weeks 5-8. The exams will focus more on "big picture" ideas than small details, so as you're reading think about the larger concepts that tie the material together.

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Course Outline

Week	Topic	Course Objectives	Readings	Assignments (due end of each week)
1	The Ancient Sky	CO-1 CO-2	**Text Reading:** • Hoskin, Ch. 1-2 • Dispatches, 4 tales • Day We Found, Ch. 1-2	• Introductions Forum Post • Writing Assignment 1—"Newspaper" • Claim Your Topic Forum
2	Revolutions	CO-1 CO-3	**Text Reading:** • Hoskin, Ch. 3 • Dispatches, 4 tales • Day We Found, Ch. 3-4	• Writing Assignment 2—"Blog" • Telescope Namesake Forum • Claim Your Topic Forum

3	Taking Measure	CO-1 CO-3	**Text Reading:** • Hoskin, Ch. 4 • Dispatches, 4 tales • Day We Found, Ch. 5-6	• Writing Assignment 3—"Webpage" • Arecibo Forum • Claim Your Topic Forum
4	Touching the Heavens	CO-1 CO-3 CO-4 CO-6	**Text Reading:** • Hoskin, Ch. 5 • Dispatches, 4 tales • Day We Found, Ch. 7-8	• Writing Assignment 4—"Astrobites" • Modern Astronomy Forum • Claim Your Topic Forum
5	New Eyes, New Universe	CO-5	**Text Reading:** • Hoskin, Ch. 6 (up to page 92) • Dispatches, 4 tales • Day We Found, Ch. 9-10	• Writing Assignment 5—"Microblog" • Movie Pitch Forum • Claim Your Topic Forum • Exam 1
6	The Milky Way and Beyond	CO-5 CO-6	**Text Reading:** • Hoskins, page 92 to end • Dispatches, 4 tales • Day We Found, Ch. 11-12	• Writing Assignment 6—"Presentation" • Hometown Scientist Forum • Claim Your Topic Forum
7	Einsteinian Understanding	CO-5 CO-6	**Text Reading:** • Dispatches, 4 tales • Day We Found, Ch. 13-14	• Writing Forum – Book Review • Value of History Forum
8	Accelerating Outward	CO-5 CO-6	**Text Reading:** • Dispatches, finish all remaining chapters. • Day We Found, Ch. 15-16	• Writing Assignment 7—"Book Review" • Feedback Forum • Exam 2

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Policies

Please see the Student Handbook to reference all University policies. Quick links to frequently asked question about policies are listed below.

Writing Expectations

All written submissions should be submitted in a font and page set-up that is readable and neat. It is recommended that students try to adhere to a consistent format, such as that described below.

- Typewritten in double-spaced format with a readable style and font and submitted inside the electronic classroom (unless classroom access is not possible and other arrangements have been approved by the professor).
- 11 or 12-point font in a style such as Arial, Helvetica or Times New Roman.

Citation and Reference Style

Students will follow the APA Citation Style guidelines as the sole citation and reference style used in written work submitted as part of coursework to the University. An online version of the manual can be found at the APUS Online Library Resource Center here: https://www.apus.edu/apus-library/resources-services/Writing/writing-center/apa-style-guideinfo.html

Late Assignments

The University encourages all work to be completed according to the course schedule. The University Late Work Policy can be found in the Student Handbook here.

Netiquette

Online universities promote the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and "flaming." Such activity and the loss of good manners are not acceptable in a university setting – basic academic rules of good behavior and proper "Netiquette" must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the Forum of others.

Technology Limitations: While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Sakai classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.

Humor Note: Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add "emoticons" to help alert your readers: ;-), :), ☺

Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

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Online Library

The Richard F. Trefry Library is available to enrolled students, alumni, and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. Questions can be directed to **librarian@apus.edu** and also through Chat, Text, and Research Consultations.

- ***Richard G. Trefry Library:*** provides quality resources to support learning across all disciplines. Their goal is to assist students in the development of information literacy skills relevant to the digital era in order to promote research, discovery, and critical thinking.

- ***Electronic Books:*** You can use the online library to uncover and download over 675,000 titles, which have been scanned and made available in electronic format.

- ***Electronic Journals:*** The University provides access to over 147,000 journals and periodicals, which are available in electronic form and only through limited subscription services.

- ***Turnitin.com:*** a web-based plagiarism prevention application licensed for campus use through the APUS Online Library. All students are encouraged to signup for an APUS student profile. Students can also use Turnitin outside of enrolled courses, as a learning tool, uploading and checking their work to avoid instances of inadvertent plagiarism.

- **Tutor.com**: AMU and APU are eligible for 10 free hours of tutoring provided by APUS. Tutor.com connects you with a professional tutor online 24/7 to provide help with assignments, studying, test prep, writing, and more. You get expert tutoring whenever you need help, and you work one-to-one with your tutor in your online classroom on your specific problem until it is done.

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