American Public University System
American Military University | American Public University

SPST435

Course Summary

Course : SPST435 **Title :** Planetary and Space Exploration
Length of Course : 8 **Faculty :**
Prerequisites : SPST200, SPST300 **Credit Hours :** 3

Description

Course Description:

This course is a summary of U.S. and international space programs. The student will assess the Earth and its space environment, to include methods of scientific exploration and spacecraft and payload criteria at the basic physics level. This course elaborates on Space Station flight operations, its supporting elements and planned systems. Students will study commercial applications, logistical support, maintenance and servicing design concepts. (Prerequisites: SPST200 or SPST300) **Course Scope:**

This course focuses on our solar system and exploration of the planets, moons and other objects within the solar system. The student will not only study these objects, but will research and discuss methods and challenges of exploration. The course covers past, current and future research missions, and the issues related to space exploration.

Objectives

After successfully completing this course, you will be able to

- Describe the planets and associated satellites within our solar system
- Develop an overview of the basic features (geology/geography /orbit) of planetary bodies
- Discuss US and international space programs focused on planetary exploration
- Explain priorities for planetary exploration within the scientific community
- Outline potential future planetary space exploration missions

Outline

Week 1: Mercury

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Websites:

NASA Solar System Exploration The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion Post #1

Assignment #1

Week 2: Venus and Terrestrial Planet Magnetic Fields

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Websites:

NASA Solar System Exploration

The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion
Readings

Readings:

Lesson 1

Post #2

Assignment #2

Week 2 Quiz

Week 3: Mars and The Challenges of Sending Humans to Mars

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Websites:

NASA Solar System Exploration The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion Post #3

Assignment #3

Week 3 Quiz

Week 4: Jupiter and the Juno Mission

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Websites:

NASA Solar System Exploration The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion Post #4

Assignment #4

Midterm Exam

Week 5: Saturn and its moons

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

Websites:

NASA Solar System Exploration

The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Post #5

Assignment #5

Week 5 Quiz

Week 6: Uranus, Neptune and the Kuiper Belt

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Websites:

NASA Solar System Exploration The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion Post #6

Assignment #6

Week 6 Quiz

Week 7: The Kuiper Belt (continued) and Moons of Jupiter and Saturn

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Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies
LO-3: Discuss US and international space programs focused on planetary exploration

LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Lesson 1

Websites:

NASA Solar System Exploration The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion Post #7

Assignment #7

Week 7 Quiz

Week 8: Final Review

Learning Objectives

LO-1: Describe the planets and associated satellites within our solar system

LO-2: Develop an overview of the basic features (geology/geography /orbit) of planetary bodies

LO-3: Discuss US and international space programs focused on planetary exploration

Websites:

NASA Solar System Exploration

The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Planetary Missions, Data and Information

Welcome to the PDS

Assignment

Discussion
LO-4: Explain priorities for planetary exploration within the scientific community

LO-5: Outline potential future planetary space exploration missions

Readings

Readings:

Review all lesson materials

Post #8

Final Exam

Evaluation

Reading Assignments: Read the each week's assignment in the Lessons

Supplemental Readings: (none; but you will need to conduct research to complete your written assignments.)

Discussion Assignments: : There are multiple required Discussions in this course. All discussions are graded, including the introduction discussion. These discussions will require some research and will be graded on your detail and analysis – **you will not receive 100% simply for participation**. I expect well thought-out discussions and responses to other students' discussion posts.

Homework Assignments: Seven homework assignments will be posted to the online classroom (they are also briefly described in the weekly schedule below. These will involve information from your resource searches, including internet research. Homework will be graded and returned before the exams are posted, so that you can use them for studying. Assignment/essay requirements:

- Papers should be 12-point font, double spaced and be approximately 3-4 pages in length
- Papers must include references/citations; those that do not will receive no higher than a "C" for the assignment
- Post your documents using a .doc rather than a .docx file
- Put your name on at least the first page of the paper, and include your last name in the filename of the paper
- Please number each page of your paper

It's recommended that you use Turnitin – see "course guidelines" in this syllabus for details

Exams/Quizzes: There will be 5 open-resource quizzes posted to the online classroom. The schedule below shows which weeks will have quizzes. They will consist of short answer (essay) questions.

The midterm exam will be open-resource, but it will have a time limit. It will consist mainly of short answers. Absolutely no late exams will be accepted.

Final Exam: The final exam will consist of short answers or essay questions. It will also be open-resource and will be available during the final week of class; again no late exams will be accepted.

Grading:

Name	Grade %
Discussions	20.00 %
Week 1: Introductions	2.50 %
Week 2: Terrestrial Planet Magnetic Fields	2.50 %
Week 3: Choice of two topics	2.50 %
Week 4: Choice of two topics	2.50 %
Week 5: Two of Saturn's Moons	2.50 %
Week 6: Uranus & Neptune	2.50 %

Websites:

NASA Solar System Exploration

The Nine Planets

http://www.edu-observatory.org/eo/planets.html

Week 7: Choice of four topics	2.50 %
Week 8: Course Wrap-up & Comments	2.50 %

Essays	21.00 %
Assignment 1: Mercury (week 1)	3.00 %
Assignment 2: Venus (week 2)	3.00 %
Assignment 3: Mars (week 3)	3.00 %
Assignment 4: Jupiter (week 4)	3.00 %
Assignment 5: Saturn (week 5)	3.00 %
Assignment 6: Uranus, Neptune & the Kuiper Belt (week 6)	3.00 %
Assignment 7: Moons of Jupiter & Saturn (week 7)	3.00 %

Quizzes	20.00 %
Week 2 Quiz	4.00 %
Week 3 Quiz	4.00 %
Week 5 Quiz	4.00 %
Week 6 Quiz	4.00 %
Week 7 Quiz	4.00 %

Midterm Exams	19.00 %
Mid Term Exam (Week 4)	19.00 %

Final Exam	20.00 %
Final Exam - Week 8	20.00 %

Materials

Book Title: There are no required books for this course.

Author: No Author Specified **Publication**

Info: ISBN: N/A

Web Sites

In addition to the required course texts, the following public domain web sites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are subject to change.

These sites are just a place to start; feel free to use additional (reliable) material, including printed texts and other websites (your discussions and assignments will require that you cite references):

Site Name	Web Site URL/Address
NASA	http://solarsystem.nasa.gov/planets/index.cfm
Nine Planets	http://www.nineplanets.org/
National Geographic	http://science.nationalgeographic.com/science/space/planets/
Astronomy Notes (N. Strobel)	http://www.astronomynotes.com/solarsys/s1.htm
Educational Observatory	http://www.edu-observatory.org/eo/planets.html
Wikipedia (checked for accuracy)	http://en.wikipedia.org/wiki/Solar_System
NASA – Planetary Missions	http://nssdc.gsfc.nasa.gov/planetary/planets.html
JPL Planetary Data System	http://pds.jpl.nasa.gov/

Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter
  Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

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.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

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

Communicating on the Discussion

- Discussions are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the discussion. The purpose of the discussions is to actively participate in an on-going discussion about the assigned content.
- "Substantive" means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says "I agree" is not substantive. A

substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.

- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

Identity Verification & Live Proctoring

- Faculty may require students to provide proof of identity when submitting assignments or completing assessments in this course. Verification may be in the form of a photograph and/or video of the student's face together with a valid photo ID, depending on the assignment format.
- Faculty may require live proctoring when completing assessments in this course. Proctoring may include identity verification and continuous monitoring of the student by webcam and microphone during testing.

University Policies

Student Handbook

- Drop/Withdrawal policy
- Extension Requests
- Academic Probation
- Appeals
- Disability Accommodations

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.