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SPST200

Course Summary

Course : SPST200 **Title :** Introduction to Space Studies
Length of Course : 8 **Faculty :**
Prerequisites : MATH111 **Credit Hours :** 3

Description

Course Description:

This course is designed to introduce the student to a variety of subjects, which together comprise the overall field of space studies. This includes the space environment, astrodynamics, launch vehicles, spacecraft, space operations, commerce, space law, policy, telecommunications, space navigations, remote sensing, space resources, astronomy, and space life sciences. All of these topics will be addressed with a very broad brush, as the student will study them more in-depth during later courses in the aerospace studies degree program. Instruction is primarily through readings (both textbook and online), along with weekly classroom discussions. As the first space studies course in the AS and BS degree in Space Studies program, this course also focuses on research and writing methods appropriate to space studies. The web readings listed under "Web Resources" will discuss critical elements of research, writing, style and formatting. The Turabian style (also known as the Chicago style) is required for all courses in this program. The course will introduce the student to a variety of research sources that will be useful in future space studies courses. (Prerequisite: MATH111)

Course Scope:

This course is designed to introduce the student to a variety of subjects, which together comprise the overall field of Space Studies. This will include astronomy, the space environment, aerospace sciences (including the space mission design process), and space policy.

These topics will be addressed at an introduction level, as the student will study them more in-depth during later courses. Instruction is primarily through readings (primarily online), along with weekly classroom discussions, each of which will require some research.

As the first space studies course in the B.S. in Space Studies program, this course also focuses on research and writing methods appropriate to space studies. Resources will be provided in the Lessons area that will cover the critical elements of research, writing, style and formatting. The APA style is the accepted format for the Space Studies program, and will be required on all

papers. The course will introduce the student to a variety of research sources that will be useful in future space studies courses.

This course is fast-paced, and you are highly encouraged to keep up with the work. **The APUS Student**

Handbook requirements for late submissions and course extensions will be strictly adhered to.

Objectives

Upon completion of this course, the student will be able to:

- LO-1: Become familiar with the APUS Space Studies Program
- LO-2: Explain why learning about space is important
- LO-3: List the elements of a space mission
- LO-4: Analyze the contributions of early space pioneers
- LO-5: Understand the Earth's atmosphere and where space begins
- LO-6: Evaluate the challenges posed by micrometeoroids, orbital debris, the radiation environment, charged particles, and galactic cosmic rays to successful space operations
- LO-7: Discuss the concept of gravity
- LO-8: Explain properties of the Sun and its role in our Solar System
- LO-9: Describe our place in the Universe
- LO-10: List the six classical orbital elements (COEs)
- LO-11: Explain basic orbital maneuvers such as the Hohmann Transfer
- LO-12: Discuss why governments pursue space activities
- LO-13: List the seven main principles that guide the daily use of space
- LO-14: Analyze the impact of current changes in the Space Studies Field.

Outline

Week 1: Introduction to the APUS Space Studies Program

Learning Outcomes

- LO-1: Become familiar with the APUS Space Studies Program
- LO-2: Explain why learning about space is important

Required Readings

Lesson, Week 1

Assignments

Discussion 1:

Personal intro

Assignment 1: Astronomy Research Paper Outline

Recommended Optional Reading

See Week 1 Lesson page

Recommended Media

Week 2: Why Do We Study Space?

Learning Outcomes

- LO-4: Analyze the contributions of early space pioneers

Required Readings

Lesson, Week 2

Assignments

Discussion 2:

Pioneers in Space Studies and Astronomy

Astronomy Research Paper

Recommended Optional Reading

See Week 2 Lesson

Recommended Media

Week 3: What is the Space Environment?

Learning Outcomes

- LO-5: Understand the Earth's atmosphere and where space begins
- LO-6: Evaluate the challenges posed by micrometeoroids, orbital debris, the radiation environment, charged particles, and galactic cosmic rays to successful space operations

Required Readings

Lesson, Week 3

Assignments

Discussion 3:

Space Weather

Week 3 Assignment

Recommended Optional Reading

See Week 3 lesson

Recommended Media

Week 4: The Astronomy Concentration

Learning Outcomes

- LO-7: Discuss the concept of gravity
- LO-8: Explain properties of the Sun and its role in our Solar System
- LO-9: Describe our place in the Universe

Required Readings

Lesson, Week 4

Assignments

Discussion 4:

Current event in Astronomy

Aerospace Research Paper Outline

Midterm exam

Recommended Optional Reading

See Week 4 Lesson

Recommended Media

Week 5: The Aerospace Science Concentration

Learning Outcomes

- LO-3: List the elements of a space mission
- LO-10: List the six classical orbital elements (COEs)
- LO-11: Explain basic orbital maneuvers such as the Hohmann Transfer

Required Readings

Lesson, Week 5

Assignments

Discussion 5:

Gravity & Launches

Aerospace Research Paper

Recommended Optional Reading

See the Week 5 lesson

Recommended Media

Week 6: The Space Policy Concentration

Learning Outcomes

- LO-12: Discuss why governments pursue space activities
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LO-13: List the seven main principles that guide the daily use of space

Required Readings

Lesson, Week 6

Assignments

Discussion 6:

Space Policy Funding/Educational Goals

Space Policy Research Paper Outline

Recommended Optional Reading

See the Week 6 lesson

Recommended Media

Week 7: Current Issues in Space Studies

Learning Outcomes

- LO-14: Analyze the impact of current changes in the Space Studies Field.

Required Readings

Lesson, Week 7

Assignments

Discussion 7:

Commercial Spaceflight

Space Policy Research Paper

Recommended Optional Reading

See the Week 7 lesson

Recommended Media

Week 8: Looking to your Future

Learning Outcomes

- LO-1: Become familiar with the APUS Space Studies Program

Required Readings

Lesson, Week 8

Assignments

Discussion 8: course wrap-up and future plans

Course Flow Chart

Final exam

Recommended Optional Reading

See the Week 8 lesson

Recommended Media

Evaluation

The grading will be based on eight graded discussions, two exams (midterm and final), several assignments, and three research papers (see table below for evaluation criteria).

Discussions

There will be eight discussions during the course. Most of the discussions will require some research and analysis of specific topics (in some cases, you'll be able to choose from a list of topics).

Your original post must be submitted by Wednesday, 11:59 PM Eastern Time (unless you make prior arrangement with the instructor). At a minimum, you will be required to respond to at least two of your classmates' posts by Sunday, 11:59 PM ET (if the course has five or fewer total students, the minimum requirement is to respond to one of your classmates), as well as monitoring any responses on your own discussion thread. Your responses should include at least one of the following:

- A discussion on something you learned from the post
- Additional information on the post
- A question about the information in the post

Any direct quotations or paraphrasing must be properly cited, using the APA format. Your responses must be substantive, not simply saying "good post" or "I agree." Each discussion will count for 3% of the final grade (for a total of 24% of your course grade). The rubric used in grading the discussions is listed with each discussion. Be sure you are familiar with the standards.

Please try not to post at the last minute, as this hinders your classmates' ability to do their work on time.

Exams

There will be a midterm exam in week 4 and a final exam in week 8. The exams will be composed of several multiple choice and true-false questions, as well as at least one short answer question (your short answers should typically be at least a couple of sentences or a short paragraph, and make sure you don't copy and paste your answers from a website or the lesson material). The midterm and final exams are worth 12% and 13% respectively.

Choose the best answer in the multiple choice and true-false questions. The short answer questions will be "manually" graded, and your final quiz and exam scores will be recorded in the gradebook. **Research Papers/Essays**

There are three short research papers due during the course, in weeks 2, 5, and 7. Paper requirements:

- Length: 3 -5 pages, not including title page, tables, figures, or bibliography
 - Double-spaced
 - Use 1" margins
 - Use 12-point font (Calibri or Arial preferred)
- Must be uploaded in MS Word format

Each paper must have at least four sources, at least one of which must be a primary source (Wikipedia is **not** an acceptable source for your essays; you may use it to help guide you to further information, but it may not be used in the paper itself). Links to websites with information on researching and writing research papers are provided in the Lessons area.

Your papers must have citations included, in either the APA format. The essays should be uploaded in the Assignments area of the online classroom. If you are unfamiliar with this process and need assistance, contact the instructor.

The rubric used in grading the essays can be found in the Assignments area.

Grading:

Name	Grade %
Discussions	24.00 %
Week 1: Introduce Yourself	3.00 %
Week 2: Key Figures in the History of Space	3.00 %
Week 3: The Space Environment	3.00 %
Week 4: Current Events in Astronomy	3.00 %
Week 5: Spacecraft & Launch Maneuvers	3.00 %
Week 6: Space Policy: Funding & Educational Goals	3.00 %
Week 7: Commercial Spaceflight	3.00 %
Week 8: Final Debriefing	3.00 %
Assignments	24.00 %
Week 1: Astronomy Research Paper Outline	6.00 %
Week 3: The Space Environment	6.00 %
Week 4: Aerospace Research Paper Outline	6.00 %
Week 8: Course Flow Chart	6.00 %

Midterm Exam	12.00 %
Midterm Exam	12.00 %
Final Exam	13.00 %
Final Exam	13.00 %
Essays Research Papers	27.00 %
Week 2: Astronomy Research Paper	9.00 %
Week 5: Aerospace Science Research	9.00 %
Paper	
Week 7: Space Policy Research	9.00 %
Paper	

Materials

Book Title: Frontiers of Space Exploration, 2nd Ed-E-book provided inside the APUS Online Library; Please visit [eReserve](#) to locate the course.

Author: Launius, Roger

Publication Info: ABC-CLIO

ISBN: 9780313325243

Book Title: Something New Under the Sun: Satellites and the Beginning of the Space Age - eBook available through the APUS Online Library; Please visit [eReserve](#) to locate the course. **Author:** Gavaghan, Helen **Publication Info:**

ISBN: 9780387949147

Required Texts: None

Links to the required weekly readings are included in each week's Lesson.

Highly Recommended (but not required): *Understanding Space*; Jerry Sellers.

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](#)

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