

Geography 2090: Space Exploration Spring 2018

Instructor:

Danny Bednar

Email: dbednar@uwo.ca

Office: SSC 2410

Office Hours: Friday 1-4

Twitter: @SpaceProfessor2

Course Hashtag: (#Space2090)

Class Details

Class Location: SSC 3006

Lecture Times: Wednesday & Thursday 1:00 – 4:00 PM

Important Dates

May 16:

First Class

May 30:

Minor Assignment Due

June 6:

Quiz #1

June 21:

Last Class

June 22:

Major Assignment Due

June 24 or 25 (TBA):

Quiz #2

Course Description

From Western Timetable: Survey of human activity in outer space, including history of spaceflight, scientific exploration, economic and military uses of space, natural resources and hazards, legal and ethical implications, and plausible future developments.

From Instructor: This course is designed to introduce students to the importance of Space as a place of endeavor for all humans, and as a reality in their daily lives. Space in this course is explored from the perspective of a geographer, with the goal of understanding it's exploration historically, physically, politically and socially. The course is not an astronomy or planetary science course; though, these fields are central to basic understanding of space exploration concepts and will be addressed as necessary. The objectives of the course are for students to: gain requisite knowledge of the history of human interaction with non-Earth places, to understand the physical geography of our solar system, and to recognize the political, scientific and cultural importance of space exploration in daily life.

Course Outcomes

At the conclusion of the course, students will be able to:

- 1) Explain the advancement of human engagement with non-Earth spaces and how these engagements have interacted with other processes in society
- 2) Summarize the key discoveries and findings of major space exploration programs and the evolution of humanity's scientific understanding of the solar system
- 3) Recognize and appraise the value of space exploration technologies to their daily lives
- 4) Evaluate the value and repercussions of past, present, and future space exploration and technologies to society

Course Materials

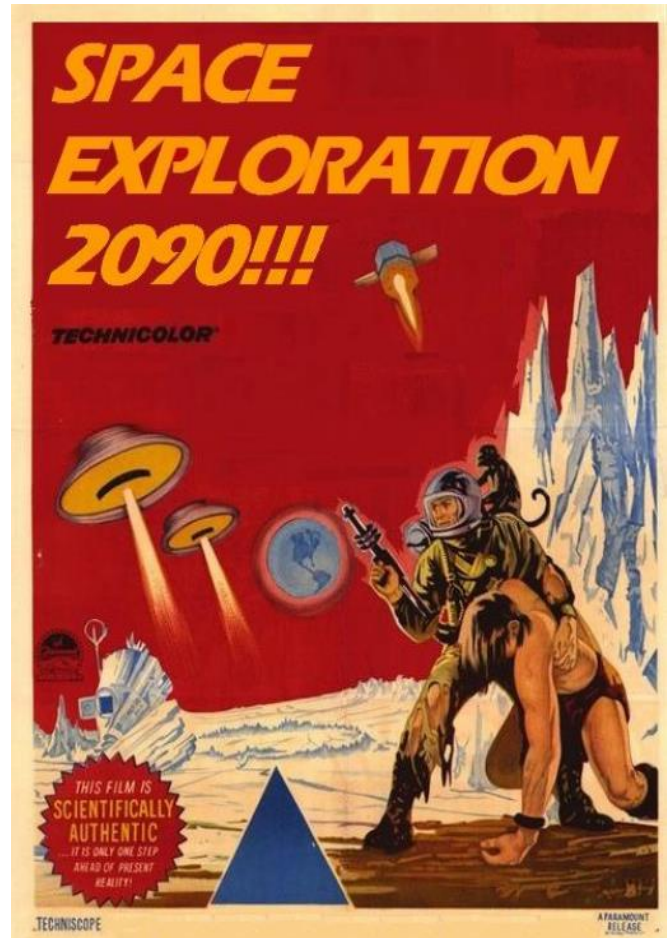
There is no textbook for the course, **SUGGESTED** helpful readings and resources will be posted on OWL.

Missed or Late Work

All work, missed or late, can only be made up with proper documentation from academic services of your home faculty.

Prerequisite Checking

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.



Evaluation

Quizzes 40%

Minor Assignment 20%

Major Assignment 40%

Quizzes

Two quizzes will test course material from lectures. The quizzes will be multiple choice and students will have 80 minutes to complete the quizzes. Each Quiz is worth 20% of the final grade.

Minor Assignment:

For the minor assignment you will choose a country and write a popular science article about its current engagement with space. You can pick any country except: United States or Russia. The article doesn't have to be comprehensive but should cover what the country is doing in regards to space technology and/or exploration.

The outcome should be a polished, well researched article about a country and its involvement in space (astronauts, rockets, satellites, being involved in international missions etc...). The format otherwise is relatively open.

The article should be no more 1000 words and reference official sources through hyperlinks to government websites or professional, high quality, websites with reliable information (news and research organizations).

For an example of an effective pop-sci article see:

[Who was the Third Country in Space?](#)

OR

[Why we need to stop talking about space as a frontier.](#)

The assignment will be graded out of 20 and will be assessed as follows:

- Presentation of accurate information /8
- Appropriate images /5
- Evidence of quality research /5
- Typos and formatting issues avoided /2

Major Assignment:

The final project builds off of the minor assignment, but is more detailed. The assignment requires an 6-8 page report on the history of space assets in a particular country. This report should include both a list of assets as well as brief descriptions. The United States and Russia are not options for this assignment. The assignment must also include at least ten space assets, meaning that if you would like to cover emerging space nations, with few historical or current assets, you may combine several countries from the same continent into a single report in order to reach the ten asset minimum.

A space asset is defined as a piece of hardware (full satellite or instrument) put into space to orbit, flyby, or land on a planetary body (including the Earth) Identified assets will be those that were built and operated by the country you chose. The asset does not have to have been launched by the country.

Regardless of whether you choose a country with a large number of historical and present assets, or several countries with few, the structure of the report will be relatively similar for all. The report will be marked out of 100 and should include

- 1) A list identifying all launched assets built or owned by the country, or as many as you can confidently identify (ideally all) (30).
- 2) A launch year, activity status, and brief description of each asset (20)
- 3) Five in-depth discussions (side boxes) of important current assets (20)
- 4) Clear evidence of effective, diverse, and high-quality research (20)
- 5) Clear evidence of proof reading, formatting effort, and effective writing (10)

The document is to be written as a report aimed at elected or industry officials. Therefore, writing should effectively balance between necessary technical detail and accessibility to interdisciplinary backgrounds.

The report should be written in 12 pt. font and single spaced. All images must be properly referenced to the correct owners. Information regarding historical and current assets must come from reliable and official sources, such as: government websites, academic research, and respected professional popular writing or news agencies (major news outlets and professional publications only). References should be clearly referenced in APA style on a final page (reference pages do not count towards limit). The more diverse your sources are, the more comprehensive the report will be considered.

If you are unsure of the quality of a source, ask the instructor.

The assignment should be submitted via hardcopy by June 22nd.

Lecture Schedule (*Subject to Minor Changes)

Week	Day	Topic	Part 1	Part 2
1	16-May	Intro & <i>History</i>	Course Introduction	Why Space Matters
	17-May		Before the Space Age	The Space Race
2	23-May	<i>Lunar Exploration</i>	The Apollo Program	
	24-May		Guest Lecture: Spectroscopy	Exploring the Moon
3	30-May	<i>Earth Orbit</i>	The U.S. Space Shuttle	
	31-May		Guest Lecture: Solar Weather	Launch Systems & Space Stations
4	06-Jun	<i>Geography of the Solar System</i>	Quiz #1	Formation of the Solar System
	07-Jun		Geography of the Solar System	
5	13-Jun	<i>Exploring the Solar System</i>	Guest Lectures: Lunar Geology	Exploring Mars
	14-Jun		Exploring the Solar System	
6	20-Jun	<i>Space & Your Life</i>	Guest Lecture: Mars 2020	The Outer Space Treaty & International Conventions
	21-Jun		Orbital Debris & Class Exercise: Solving Orbital Debris	The Big 3 of Space for Earth

Mental Health

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit the site below for more information on mental health resources:

<http://www.uwo.ca/uwocom/mentalhealth/>.

Western's commitment to accessibility

The University of Western Ontario is committed to achieving barrier free accessibility for persons studying, visiting and working at Western.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 Ext. 82147 for any specific question regarding an accommodation.

Support Services

Registration Services: <http://www.registrar.uwo.ca/>

Student Development Services: <http://www.sdc.uwo.ca/>

Accommodation and Medical Absence

For UWO Policy on Accommodation for Medical Illness and a downloadable SMC see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

Students seeking academic accommodation on medical grounds for any missed tests, exams, participation components and/or assignments worth 10% or more of their final grade must apply to the Academic Counselling office of their home Faculty and provide documentation. Academic accommodation cannot be granted by the instructor or department.

Academic Offences (Plagiarism)

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com.