

GEOG 2090A – Space Exploration Course Outline: Section 001 Fall 2021

1. Course Information



	Delivery Mode	Day/Time	Location
Lecture	Online	Asynchronous (New Material Posted Mondays)	OWL/Other

Classes Start	Fall Reading Week	Classes End	Study day(s)	Exam Period
September 8	November 1-7	December 8	December 9	December 10-21

September 16, 2021: Last day to add a first-term half course

October 11, 2021: Thanksgiving Holiday

November 12, 2021: Last day to drop a first term half course without penalty



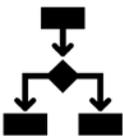
Course Instructor	Contact Information	Office Hours
Dr. Danny Bednar	dbednar@uwo.ca	By Appointment (Virtual)

Teaching Assistant(s)	Contact Information	Office Hours
Nils Mann		
Kiran Unger-Basappa		



Office hours will be held remotely using Zoom by appointment

2. Calendar Description



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.

Lecture hours, 0.5 course

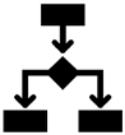
3. Textbook



All resources will be posted in OWL

4. Course Objectives and Format

To familiarize students with the history of space exploration, including its socio-political, economic, and cultural linkages. The course is intended to cover both natural and social science components of humanity's engagement with outer space for the purposes of scientific exploration.



All course material will be posted to OWL: <http://owl.uwo.ca>. Any changes will be indicated on the OWL site and discussed with the class.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

If students need assistance, they can seek support on the [OWL Help page](#). Alternatively, they can contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

5. Learning Outcomes

Upon successful completion of this course, students will be able to:

- Explain the advancement of human engagement with non-Earth spaces and how these engagements have interacted with other processes in society historically and geographically
- Summarize the key discoveries and findings of major space exploration programs and the evolution of humanity's scientific understanding of the solar system
- Evaluate the value and repercussions of past, present, and future space exploration and space technologies to society
- Recognize the challenges associated with human and robotic exploration of our solar system



6. Communication

- Students should check the OWL site every 24 – 48 hours
- A weekly update will be provided on the OWL announcements
- For any other communication, the centrally administered **e-mail account** provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts [here](#).
- Emails will be monitored daily Monday through Friday; students will receive a response within 24 – 48 hours the next business day



7. Preliminary Course Content and Schedule (subject to change)

See table at end of this document

8. Evaluation

Below is the evaluation breakdown for the course. Slight changes are possible and any deviations will be communicated as soon as possible.

Assessment	Format	Weighting	Due Date
Quiz #1	Online Multiple Choice	10%	September 27th
Forum Post #1	Online Written	15%	October 4th
Quiz #2	Online Multiple Choice	10%	October 25th
Quiz #3	Online Multiple Choice	10%	November 15th
Forum Post #2	Online Written	15%	November 22nd
Final Project	.pdf Submission	40%	December 3rd

Students are responsible for material covered in the lectures as well as the assigned chapters/sections in the text.

- All assignments are due at 11:55 pm EST unless otherwise specified
- Written assignments will be submitted to Turnitin (statement in policies below)
- Rubrics will be used to evaluate assessments and will be posted with the instructions
- After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days



Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Information about late or missed evaluations:

Documentation for illness and missed assignments must be submitted by the student directly to the appropriate Faculty Dean's office and not to the instructor. It will be the Dean's office that will determine if accommodation is warranted.

- Late assessments without illness self-reports will be subject to a late penalty 10 %/day
- Late assessments with illness self-reports should be submitted within 24 hours of submission of the last illness self-report
- A make-up test will be offered OR the weight of a missed test will be transferred to []

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: *You* are responsible for your grades in this course.

9. Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).

Academic Consideration for Student Absence

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the term, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

[Policy on Academic Consideration for Student Absences - Undergraduate Students](#)

[Student Medical Certificate \(SMC\)](#)

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the [Western Multicultural Calendar](#).

10. Make-up Examinations

This course does not have a mid-term or a final exam

11. Use of Electronic Devices

No use of additional electronic devices or explorer tabs will be permitted during quizzes

12. How to Be Successful in this Class:



1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively.
5. Connect with others. Try forming a study group and try meeting on a weekly basis for study and peer support.
6. Do not be afraid to ask questions. If you are struggling with a topic, check the online discussion boards or contact your instructor(s) and or teaching assistant(s).
7. Reward yourself for successes. It seems easier to motivate ourselves knowing that there is something waiting for us at the end of the task.

13. Continuity of Education Plan (in-person class pivoting to online learning)

In the event of a COVID-19 resurgence during the course that necessitates the university to direct courses move away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

14. Information on COVID-19

Masking Guidelines

Students will be expected to wear triple layer, non-medical, paper masks at all times in the classroom as per University policy and public health directives. Students who are unable to wear a mask must seek formal accommodation through Western Accessible Education, and present medical documentation.

Students are not permitted to eat or drink while in class to ensure masks stay in place. Students will be able to eat and drink outside of the classroom during scheduled breaks.

Students unwilling to wear a mask as stipulated by Western policy and public health directives will be referred to the Dean, and such actions will be considered a violation of the student Code of Conduct.

Course Absences due to Daily COVID Screening Questionnaire

Missed assessments (e.g., presentations, essays, quizzes, tests, midterms, etc.) require formal academic considerations (typically self-reported absences and/or academic counselling).

15. Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

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 (<http://www.turnitin.com>).

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for additional web application use or unusual coincidences in answer patterns that may indicate cheating.

16. Western's Commitment to Accessibility

The Department of Geography and Environment strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities.

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 519-661-2147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website.

More information about "Accessibility at Western" is available.

17. Mental Health

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit Western's Health and Wellness website for more information on mental health resources.

18. Support Services

Western's Support Services
Student Development Centre

19. Important Dates

September 8: Classes resume

September 16: Last day to add a first term half course

October 11: Thanksgiving Holiday – Department Office Closed

November 1 to November 7: Fall Reading Week (No classes; Department Office open)

November 12: Last day to drop a first term half course without penalty

November 30: Last day to drop a full course without penalty

December 8: Classes end

December 9: Study day

December 10-21: Examination Period

ANNEX - Course Schedule (Subject to Minor Changes)

Date	Week	Topic	Intro Video	Podcasts/ Videos	Readings/Movies	Assignments Due
13-Sep	1	Intro	Yes	What is Space Exploration?	Dunnet et al. (2018) - Geographies of Outer Space	
20-Sep	2	Formation of the Solar System	Yes	Formation of The Solar System	Rothery (2013) - The Formation of the Solar System	
27-Sep	3	Geography of Solar System	Yes	Geography of the Solar System	Anfilogov & Khachay (2015) - The Solar System	Quiz #1 (10)
28-Sep	4	Pre-Space Age	Yes	What we Knew Before the Space Age	Lane - Martian Canal Craze (2006) Newfeuld (2013) - The Nazi Aerospace Exodus	
04-Oct	5	The Space Race	Yes	The Space Race: Science, Ethics, & Space	MacDonald (2008) - Space and the Atom Sage (2010) - Framing Space	Forum Post 1 (15)
11-Oct	6	Catch-Up Week	No			
18-Oct	7	Lunar Exploration	Yes	The Apollo Program The Moon Mission Draft	Harrison & Bednar (2020) - An Introduction to the Apollo Program	
25-Oct	8	Martian Exploration	Yes	A Crash Course in Mars Missions	Conley & Rummel (2013) - Appropriate Protection for Mars	Quiz #2 (10)
01-Nov	9	Reading Weak	No			
08-Nov	10	Exploring the Inner Solar System	Yes	Exploring the inner Solar System	Bonnet et al. (2013) - History of Venus Observations Exploring the Inner Solar System Playlist	

15-Nov	11	Exploring the Outer Solar System	Yes	Blowing Up Pluto Exploring the Outer Solar System	The Farthest (Movie)	Quiz #3 (10)
22-Nov	12	The Future of Space Exploration	Yes	The Future of Space Exploration	Goldsmith & Rees (2020) - Do We Really Need to Send Humans to Space? Klinger (2021) - Environmental Geopolitics and Outer Space	Forum Post 2 (15)
29-Nov	13	Catch-Up Week	No			
06-Dec	14	Project Due	Yes			Final Project Due (40) (Dec 3rd)