

GEOG 2090 – Space Exploration Course Outline: Section 001 Fall 2020



Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

1. Technical Requirements



Stable internet connection



Laptop or computer

Recommended technical specifications are available at:

<https://registrar.uwo.ca/academics/timetables.html>

2. Course Information



Delivery Mode	Dates	Time
Online	New Material posted Monday Evenings	9 PM

*Details about design and delivery of the course are listed below in Section 4

Classes Start	Reading Week	Classes End	Study day(s)	Exam Period
September 9	November 2 - 8	December 9	December 10	December 11 - 22

* September 17, 2020: Last day to add a first-term half course

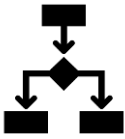
** November 12, 2020: Last day to drop a first-term half course without penalty



Course Instructor	Contact Information	Office Hours
Danny Bednar	dbednar@uwo.ca	By appointment

Teaching Assistant(s)	Contact Information	Office Hours
Robin Kwik		
Victoria Bomberry		

3. 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
Antirequisite(s): None
Prerequisite(s): None

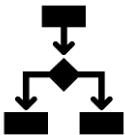
4. Textbook



All resources will be posted in OWL

5. Course Objectives and Format

Mode	Dates	Time	Frequency
Virtual asynchronous	Material Posted Mondays at 9 PM	Course material will include the regular 3 hours that would be spent in class, plus another 3-5 hours per week reviewing material and notes	weekly



Closed captioning will be provided on audio or video recordings

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](#). [Using the right browser is important, especially when using different features integrated with OWL]

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.

6. Course Content and Schedule (subject to minor changes)

Date	Week	Topic	Intro Video	Podcast (1hr)	Virtual Lecture (2hr)	Reading (1 Hr)	Forum	Assignment
08-Sep	1	Intro	Yes	What is Space Exploration?				
14-Sep	2	Formation of the Solar System	Yes		Formation of the Solar System	Rothery - Chapter 1 (2013)		
21-Sep	3	Geography of Solar System	Yes	Pitching a Planetary Science Mission	Geography of the Solar System	Anfilogov & Khachay (2015)		
28-Sep	4	Pre-Space Age	Yes	What we Knew Before the Space Age		Lane - Martian Canal Craze (2006)		Project Case Site (15) - Sept 30
05-Oct	5	Catch Up Week	AMA					
13-Oct	6	"Space Race"	Yes	Ethics & Science in Space	The Space Race	Sage - Manifest Destiny in Space (2010)	What Does the Story of von Braun Teach us About being involved in Science or Space?	
19-Oct	7	Apollo	Yes	Those Other Apollo Missions	The Apollo Program	Maher - Chapter 1 (2017)		
26-Oct	8	Lunar Exploration	Yes	The Origin of the Moon	Robotic Exploration of the Moon		What were Apollo's contribution to Lunar science and	Forum #1 (15) - Nov 1
02-Nov	9	Reading Week	AMA					
09-Nov	10	Martian Exploration	Yes	Martian Science Mars 2020	Exploring Mars	Goldsmith & Rees (2020) Do We Really Need to Send Humans to Space?	Is Human Exploration of Mars Worth it?	Case Study Long Form Due (15) - Nov 15
16-Nov	11	Inner Solar System Exploration	Yes		Exploring the Inner Solar System			
23-Nov	12	Outer Solar System Exploration	Yes	Blowing Up Pluto	Exploring the Outer Solar System	The Farthest (Movie)	What would you have put on the Voyager Golden Record and Why?	
30-Nov	13	Catch-Up Week	AMA					Forum #2 (15) - Nov 30
07-Dec	14	Project Due	Yes					Final Project Due (40) - Dec 7

7. Online Participation and Engagement



- Students are expected to participate and engage with content as much as possible
- Students can also participate by interacting in the forums with their peers and instructors

8. Communication



- Students should check the OWL site every 24 – 48 hours
- A weekly update will be provided on the OWL announcements
- Students should email their instructor(s) and teaching assistant(s) using OWL “messages”
- 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; students will receive a response in 24 – 48 hours
- This course will use Microsoft Teams for discussions
- This course will use the OWL forum for discussions
- Students should post all course-related content on the discussion forum so that everyone can access answers to questions
- The discussion forums will be monitored daily by instructors or teaching assistants

9. 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

10. Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Format	Weighting	Due Date
Project Case Site	Written	15%	Sept 30
Forum Post #1	Written	15%	Before Nov. 1
Project Long Form	Written	15%	Nov. 15
Forum Post #2	Written	15%	Before Nov. 30
Final Project	Written	40%	Dec. 7

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



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

- 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

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.

11. 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.**

For Western University policy on Consideration for Student Absence, see

[Policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs](#)

and for the Student Medical Certificate (SMC), see:

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

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](#).

12. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.

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. Treat this course as you would a face-to-face course. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading or watching the videos.
5. Connect with others. Try forming an online 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. Statements concerning Online Etiquette

Some components of this course will involve online interactions. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:

- Please “arrive” to class on time
- Please use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- Ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- To minimize background noise, kindly mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- [suggested for classes larger than 30 students] In order to give us optimum bandwidth and web quality, please turn off your video camera for the entire class unless you are invited to speak
- [suggested for cases where video is used] Please be prepared to turn your video camera off at the instructor’s request if the internet connection becomes unstable
- Unless invited by your instructor, do not share your screen in the meeting

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, use the “raise hand” function and wait for the instructor to acknowledge you before beginning your comment or question
- Remember to unmute your microphone and turn on your video camera before speaking
- Self-identify when speaking

- Remember to mute your mic and turn off your video camera after speaking (unless directed otherwise)

General considerations of “netiquette”:

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.
- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment. “Flaming” is never appropriate.
- Be professional and scholarly in all online postings. Cite the ideas of others appropriately.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

14. 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.

[Include this paragraph on plagiarism-checking software only if relevant. If not relevant delete the paragraph below]

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>).

[Include this paragraph on computer marked multiple-choice tests if relevant. If not relevant delete the paragraph below]

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

15. Western's Commitment to Accessibility

The Department of Geography 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.

16. 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.

17. Support Services

[Western's Support Services](#)
[Student Development Centre](#)

18. Important Dates

September 9: Classes resume

September 17: Last day to add a first term half course

October 12: Thanksgiving Holiday – Department Office Closed

November 2 to November 8: 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 9: Classes end

December 10: Study day

December 11-22: Examination Period