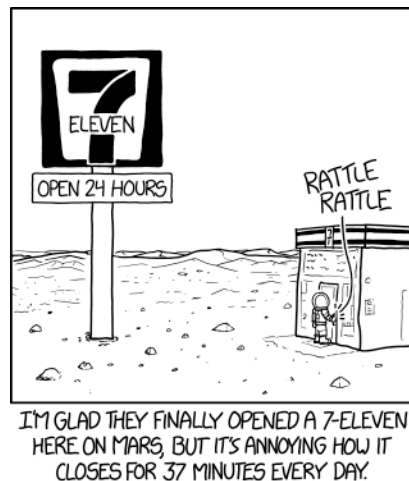


Course Outline – Planet Mars
Fall 2020
Tuesday: 3:20 PM – 4:40 PM
Thursday: 3:20 PM – 4:40 PM
Instructor: Dr. Lujendra Ojha

Email: Luju.ojha@rutgers.edu
Office Hours: Tuesday (2:00 to 3:00 PM)
and Thursday: (12:00 to 1:00 PM)
WebEx Link: [To Be Updated](#)



Course overview: Welcome to Mars! The days are slightly longer, and it is a bit cold outside. This course is designed to give you an overview of the Planet Mars. We will combine synchronous lectures with hands-on activity (virtually, ofc) to understand the formation and evolution of the red planet. We will split the class between lectures and hands-on activity to break the monotony of virtual lectures. In addition to regular lectures, we will look at cool images of Mars, analyze data from satellites and landers, and have group discussions. We will use two main tools to look at data from Mars: Google Earth and JMars. The goal here is to provide you with an actual experience of what it is like to be a Mars scientist. We will combine a little bit of physics, mathematics, astrophysics, earth science, atmospheric science, chemistry, and biology to understand the formation, evolution, and habitability of Mars. We will only use basic algebra, so you don't have to be a math savant to take this class. The class will be held synchronously on Tuesdays and Thursdays, but I will record the lectures, so you can access to them even if you miss the class. We will use Zoom and/or WebEx.

Prerequisites: None. Computer.

Course Expectation: *Basic Class Etiquette:* Respect yourself, your peers, and your teacher. Pay attention, participate, and ask questions. Come to class with positive learning attitude. Student actions that interfere with teaching or learning in the classroom will NOT be tolerated.

Assignments: Do your best work and turn it in time. We all have bad days (or even weeks), so you get two free passes. You can redeem your "late assignment pass" for up to a week. If you do not use your two free passes, you can redeem them for 10 points each at the end of the semester. Please do not cheat, plagiarize, or copy work. If I find any evidence of cheating, I will give you ZERO and report the incident.

Textbook: None required for the class. I will provide you texts.

In-Class Activity: ~ 5 - 7 in class activity worth 20% of your grade.

Homework: There will be ~ 5 homework assignments worth 20% of your grade.

Exams: Midterm = 20% of your grade. Final = 20% of your grade. Total = 40%.

Class Project: 20% of your grade. Total = 20%.

Grades:	C+ = 74.5 - 79.49
A = 89.5 - 100	D = 59.5 - 69.49
B+ = 84.5 - 89.49	F = 0 - 59.49
B = 79.5 - 84.49	

Day	Date	Agenda	Structure
Tuesday	1-Sep	Course overview. Introduction to Google Mars + JMars	Lecture + Demonstration
Thursday	3-Sep	How did the Universe form?	Lecture + Activity
Tuesday	8-Sep	How did the planets in the solar system form?	Lecture
Thursday	10-Sep	The History of Mars Exploration	Lecture
Tuesday	15-Sep	How do we get to Mars? Rocket Science!	Lecture + Activity
Thursday	17-Sep	Meteorites from Mars	Lecture
Tuesday	22-Sep	Electromagnetic Spectrum and Satellite Observation of Mars	Lecture + Activity
Thursday	24-Sep	Impact craters on Mars	Lecture
Tuesday	29-Sep	Crater Data Analysis on Jmars	Lecture + Activity
Thursday	1-Oct	Volcanism on Mars	Lecture
Tuesday	6-Oct	Volcanism Data Analysis on Jmars	Lecture + Activity
Thursday	8-Oct	Dust, wind, sands on Mars	Lecture
Tuesday	13-Oct	Dune analysis on Jmars	Lecture + Activity
Thursday	15-Oct	Water on Mars - I	Lecture
Tuesday	20-Oct	Water on Mars - II	Lecture
Thursday	22-Oct	Midterm Review	Review
Tuesday	27-Oct	Midterm	Midterm
Thursday	29-Oct	Highlights from the First Half	Lecture
Tuesday	3-Nov	Martian Climate and Changes Over Martian History	Lecture

Thursday	5-Nov	The Polar Caps of Mars	Lecture
			Interactive
Tuesday	10-Nov	Jmars Analysis of Polar Caps on Mars	Activity
Thursday	12-Nov	The Internal Structure of Mars	Lecture
Tuesday	17-Nov	The Moons of Mars	Lecture
Thursday	19-Nov	Habitability of Mars	Lecture
			Lecture +
			Interactive
Tuesday	24-Nov	Future Missions to Mars	Activity
			Lecture +
		Humans on Mars: Motivation and	Interactive
Thursday	1-Dec	Challenges	Activity
Tuesday	3-Dec	Project Presentation	--
Thursday	8-Dec	Project Presentation - II	--
Tuesday	10-Dec	Final Review	--

Exams: No unexcused make-up exams will be given without WRITTEN documentation from a Rutgers University official. Those with valid excuses will be allowed to take exams at a different time.

Attendance: Students are expected to attend class. We will engage in numerous in-class group activities, and if you are not here, you may have a hard time completing the activities on your own. I will upload the lecture videos to a remote server for those who miss lectures.

Tardiness and Leaving Class Early: Habitually arriving in class late and departing early is disruptive and rude. We ask that once you make every effort possible to get to class on time, and once there, STAY.

Academic Integrity: All students are responsible for upholding the highest standards of student behavior, as specified under the University Code of Student Conduct (<http://studentconduct.rutgers.edu/>), including but not limited to strict adherence to the terms of the University's Academic Integrity Policy (<http://academicintegrity.rutgers.edu/>).

I do not tolerate cheating. If you are caught cheating, I will give you '0' for the assignment and give you an official warning. If I catch you cheating again then I WILL fail you and report you.

Your Rights: If you feel that you have been treated unfairly, contact the department chair, Dr. Gregory Mountain (gmtn@eps.rutgers.edu)