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Professor: Alix Davatzes

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Phone: 215-204-3907

Office Hours: by appointment, or just stop by when my office door is open

Class Time: MW 8-8:50am; F 10-11:50am

Class Location: Beury 303

Textbook: "Planetary crusts" by Taylor and McLennan

Prerequisites: Introduction to Geology (EES 2001); Calculus I (Math 1041 or 1941); and *either* Igneous and Metamorphic Petrology (EES 3001) *or* Geochemistry (EES 2061).

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#### **GOALS:**

By the end of this class, I hope that you can answer several questions:

- What are the basic themes in the formation and evolution of the planets? How do they differ from our planet and from each other? What are the governing geologic processes on the different planets?
- How does this perspective give us a better understanding of our own home planet, Earth?
- How and when did life originate in our solar system? Is life unique to the Earth?
- What are the goals of planetary exploration? How do we know about other planets and what information is important to gain in the future?

#### **EXPECTATIONS:**

##### **1. Participation**

Attendance and participation in class and lab is expected. If you must be absent, please let me know so that I may get you the readings and assignments for the following day. There will be no make-ups of in-class projects for unexcused absences.

##### **2. Lab write-ups**

Each lab will have to be turned in on the date stated on the lab, generally at the start of the following lab. I expect clear, legible handwriting or typed responses and figures to accompany your labs. I will provide additional information for my expectations on these labs when we get to them. You will generally work on labs as teams.

##### **3. Exams**

There are three exams in this class: two midterms and a final. The final is cumulative. Material from the labs, the lecture, and the readings are all fair game for the exams.

##### **4. Mars 2020 landing site presentations**

For the students taking this course at the 5000-level, there is an additional project that will culminate in an extended abstract and presentation to be given in the last week of class. This project will have several short-term deadlines; further information will be provided.

#### **GRADING POLICY :**

A (94-100%); A- (90-93%); B+ (87-89%); B (83-86%); B- (80-82%);  
C+ (77-79%); C (73-76%); C- (70-72%); D (60-69%); F (59% or below)

**GRADING:**

| 4000-level    |     | 5000-level               |     |
|---------------|-----|--------------------------|-----|
| Participation | 10% | Participation            | 5%  |
| Laboratory    | 40% | Laboratory               | 35% |
| Midterm exams | 30% | Midterm Exams            | 20% |
| Final Exam    | 20% | MSL Team meeting Project | 20% |
|               |     | Final Exam               | 20% |

**BLACKBOARD:**

The class web site on Blackboard will be an important tool in the class, so be sure to be familiar with all of the functions on it. Class materials, announcements, assignments, and links to web sites will also be posted at the site.

**DISABILITY RESOURCES AND SERVICES:**

Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

**STUDENT AND FACULTY ACADEMIC RIGHTS AND RESPONSIBILITIES POLICY (#03.70.02):**

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on Student and Faculty Academic Rights and Responsibilities (Policy #03.70.02), which can be accessed at the following link: [http://policies.temple.edu/getdoc.asp?policy\\_no=03.70.02](http://policies.temple.edu/getdoc.asp?policy_no=03.70.02).

**PLAGIARISM:**

Please go to the following link for Temple's policy on plagiarism:  
[http://www.temple.edu/writingctr/student\\_resources/avoiding\\_plagiarism.htm](http://www.temple.edu/writingctr/student_resources/avoiding_plagiarism.htm)

**TENTATIVE SCHEDULE:**

| Week starting: | Lecture:  | Readings: | Lab:  |
|----------------|---|-----------|---|
| 8/25           | M: Planetary Crusts<br>W: Geologic processes in the solar system<br>F: Data types and tools, intro to JMARS | Ch 1      | Lab 1: JMARS                                    |
| 9/1            | NO CLASS ON M<br>The Moon   | Ch 2, 3   | Lab 2: Geologic Mapping on the Moon             |
| 9/8            | Mercury   | Ch 4      | Lab 2 (cont'd)                                  |
| 9/15           | Venus   | Ch 7      |   |
| 9/22           | <b>Monday: Midterm Exam</b><br>Mars   | Ch 5      | Lab 3: Martian Fluvial Channels                 |
| 9/29           | Mars  | Ch 6      | Lab 4: Mars Mapping and crater counting         |
| 10/6           | Impact cratering  |           | Lab 4: (cont'd- Alix at SERC opening on Friday) |
| 10/13          | Earth, part 1   | Ch 9, 10  |   |
| 10/20          | <b>Monday: Midterm Exam (Alix at GSA)</b><br>Outer moons  | Ch 13     | Lab 5: Planetary Volcanology                    |
| 10/27          | Earth, part 2   | Ch 11, 12 | Intro to Meteorite Petrology                    |
| 11/3           | Asteroids and Comets (in petro lab)   |           | Lab 6: Meteorite Petrology                      |
| 11/10          | Asteroids and Comets (in petro lab)   |           | Lab 6: (cont'd)                                 |
| 11/17          | Astrobiology  | articles  | Paper discussion                                |
| 11/24          | NO CLASS- THANKSGIVING  |           |   |
| 12/1           | Mars 2020 Workshop  |           |   |
| 12/8           | <b>Class on Monday only-</b> Wrap-up & review   | Ch 14     |   |

**FINAL EXAM: MONDAY 12/15 AT 8:00AM**