

Kingsborough Community College
The City University of New York
Department of Physical Sciences

EPS 3600 – PLANETOLOGY: A TRIP THROUGH THE SOLAR SYSTEM (WITH LABORATORY)

Syllabus

EPS 3600 – PLANETOLOGY: A TRIP THROUGH THE SOLAR SYSTEM (4 crs. 6 hrs.) Introduction to the planets, moons and smaller bodies that occupy our Solar System, and to current Space Science research and technology. Topics include the origin and evolution of our solar system, the geological and chemical characteristics of the planets, moons, asteroids, comets and life in the solar system. ---Prerequisites: Passed, exempt, or completed developmental course work for the CUNY Assessment Tests in Reading, Writing, and ACCUPLACER CUNY Assessment Test in Math, or Department permission ---Required Core: Life and Physical Sciences--- Flexible Core: Scientific World (Group E)

Section: SECTION NUMBER Time: LECTURE AND LABORATORY SCHEDULE FOR SECTION

Room: ROOM (S) FOR SECTION

Instructor: INSTRUCTOR FOR SECTION Email: EMAIL ADDRESS FOR INSTRUCTOR FOR SECTION

Office Hours: OFFICE HOURS FOR INSTRUCTOR FOR SECTION

Source materials: Required textbook: *The Solar System* by Seeds and Backman, 8th or 9th or 10th or latest edition

Student Learning Outcomes Students will:

- Learn the composition and structure of the solar system
- Learn accretion, core segregation and dynamic evolution of the terrestrial planets and asteroids
- Learn the geochemical models of planetary formation and evolution
- Be able to compare and contrast the characteristics of the terrestrial planets, and demonstrate understanding of the causes of their similarities and differences.
- Be able to Compare and contrast the characteristics of the jovian planets, and demonstrate understanding of the causes of their similarities and differences.
- Demonstrate understanding of the differences between the terrestrial and jovian planets, and of how those differences came to be.
- Demonstrate understanding of the properties of the smaller bodies of the solar system.
- Demonstrate knowledge of the current best scientific explanation of the origin and evolution of the solar system.

Topical Outline Lecture: (Approximate and subject to change upon notification)

Week	Topics	Book Chapter(s)
1	Overview of the Solar System	8
2	Origin of the Solar System	10
3	Evolution of the Solar System	Handout
4	Fundamentals of Planetary Science	Handout
5	Small Bodies (meteorites, asteroids, comets, etc.)	16
6	Earth's Moon	12
7	Mercury	12
8	Mars	13
9	Venus	13
10	Earth	11
11	Moons of Jupiter, Saturn, Uranus, Neptune (Icy Moons and the search for life)	14
12	Pluto, Comets	15 & 16
13	Final Exam - As per official College Final Schedule	

Laboratory

Date	Topic	Requirements
Lab 1	Introduction, Surface Features of Mars, Moon, Earth	Hand in
Lab 2	The Scientific Method / Impact Structures Part I	Hand in
Lab 3	Impact Structures Part II	Hand in
Lab 4	Density and Differentiation	Hand in
Lab 5	Minerals and Mineral Groups Part I	Hand in
Lab 6	Minerals and Mineral Groups Part II	Hand in
Lab 7	Terrestrial Rocks I (Hand Sample and Thin Section)	Hand in
Lab 8	The Petrographic Microscope Terrestrial Rocks II (Hand Sample and Thin Section)	Hand in
Lab 9	Meteorites I: Classification (Hand Sample) The Scanning Electron Microscope	Hand in
Lab 10	Meteorites II (Thin Section) Statistics, Tektites, Impact Rocks	Hand in
Lab 11	Soils and regolith formation Mars Mapping and search for Martian life	Hand in
Lab 12	Spectroscopy	Hand in

Evaluation:

- 3 Exams – 20% each

Exams are definition, problems, short answer, and essay. One side of a 3x5 index card filled with notes may be created and used for an exam.

- Homework/Presentation - 20%

- Laboratory - 20%

You are responsible for being in laboratory on time. Laboratory assignment cannot be made up. Laboratory reports, unless otherwise specified, must be turned in at the end of class. As part of your laboratory final, you may bring all laboratory reports to class to assist you on your final.

Grades will be awarded as follows: 93% or above=**A**; 90-92.99%=**A-**; 87-89.99%=**B+**; 83-86.99%=**B**; 80-82.99%=**B-**; 77-79.9%=**C+**; 73-76.99%=**C**; 70-72.99%=**C-**; 67-69.99%=**D+**; 63-66.99%=**D**; 60-62.99%=**D-**; <60%=**F**

Missed Exam/Laboratory/Lecture/Assignment Policy

Attending all classes is mandatory. The textbook is a guide for the course additional material will be covered during lecture meetings. If you miss class, you will miss out on taking notes and this will affect your ability to study for tests and quizzes. If you miss an opportunity to demonstrate your knowledge of the subject matter by missing a duly scheduled exam, laboratory or other assignment, the grading scheme does not apply. Your grade will be determined at the discretion of the instructor. By missing a duly scheduled exam, laboratory or other assignment, you accept and recognize that the instructor must determine your grade within the context of determining the grade of students who did not miss a duly scheduled exam, laboratory or other assignment. Instructor Make-up Policy: SUGGESTED: NO MAKE-UP EXAMS, NO MAKE-UP LABORATORIES OR NO MAKE-UP OTHER ASSIGNMENTS. FINAL EXAM WEIGHTED WITH PENALTY (0-100%) FOR MISSED WORK

Conduct: Students are required to follow *The Student Code of Conduct* as stated in the *Student Handbook*.

Accessibility: Access-Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every reasonable effort to provide appropriate accommodations and assistance to students with disabilities. You must contact Access-Ability Services if you require such accommodations and assistance. Your instructor will make the accommodations you need, but you must have documentation from the Access-Ability office for any accommodations.