

## Exploring the Solar System

Earth Sciences 108

Section: D100

Term: 2013 Spring

Instructor: Dr. Glyn Willimas-Jones

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Discussion Topics: General: REQUIREMENT DESIGNATION: B-Sci

EASC108 is an introduction to the geology and physics of our solar system through a comparative survey of the planets. Emphasis is on how knowledge of the Earth can be used to learn more about the neighboring (terrestrial) planets. A wealth of accessible information now exists from which we can attempt to reconstruct the geological history of each planetary surface in our solar system.

Course Topics:

Comparative planetology

Planetary surfaces (impact cratering, landslides, thermokarst topography, aeolian and fluvial processes, plate tectonics, etc.)

The formation and geological history of planetary lithospheres, hydrospheres, cryospheres and atmospheres.

Structure, origin and fate of the solar system (Oort and Kuiper objects, terrestrial versus Jovian planets, condensation sequence of the protostellar nebula, the central player - the sun)

Cratering morphology and mechanics (featuring the K/T impact theory, and the recent theory on the possible Late Pleistocene impact over North America).

The importance of water in the solar system (runaway greenhouse effect to ice-ball events).

Planetary interiors (including magnetic field generation).

Grading:

Required Texts: "An Introduction to the Solar System, Revised Edition" by N. McBride & I. Gilmour 2011. Cambridge University Press, ISBN 978-1-1076-0092-8

Recommended Texts: None.

Materials/Supplies: None

Prerequisite/Corequisite: None.

Notes: Students may not use this course for credit towards EASC major or minor program requirements.

This outline is derived from a course outline repository database that was maintained by SFU Student Services and the University's IT Services Department. The database was retired in 2014 and the data migrated to SFU Archives in 2015.