



# UNIVERSITÀ DI PISA

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## GEOLOGIA PLANETARIA

**LUIGI FOLCO**

Anno accademico

2018/19

CdS

SCIENZE NATURALI ED AMBIENTALI

Codice

172DD

CFU

6

Moduli	Settore/i	Tipo	Ore	Docente/i
GEOLOGIA PLANETARIA	GEO/07	LEZIONI	48	LUIGI FOLCO

### Obiettivi di apprendimento

#### *Conoscenze*

The student who successfully completes the course will have the basic knowledge of the geological processes that occurred and occur on the various bodies of the Solar System since its formation 4.56 billion years ago. The student will get familiar with planetary materials including meteorites, micrometeorites and impactites in order to lay the basis for understanding their petrogenesis and geological context.

#### *Modalità di verifica delle conoscenze*

Through discussion and laboratory work.

#### Programma (contenuti dell'insegnamento)

##### **Planetary origins**

Architecture of the Solar System  
Theories on the origin of the Solar System  
The major planets, dwarf planets and satellites  
Dust, asteroids and comets

##### **Orbits and cycles**

Planetary orbit  
Insolation  
Interaction between planetary bodies  
The variable Sun

##### **Core, mantle, crust**

Reading the subsurface  
Sources of change  
Core  
Mantle  
Crust

##### **Magnetic fields and signatures**

Magnetosphere  
Magnetism as probe  
variability  
Reversals  
Paleomagnetism  
Magnetic stratigraphy

##### **Topography and gravity**

Shape and spin  
Hypsometric curves  
Topography  
Mapping gravity  
Isostasy



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### **Tectonics**

Structures  
Cryotectonics  
Global tectonics

### **Volcanism**

Maria and flood basalts  
Flows  
Edifices and Intrusions  
Outgassing

### **Impact and impactors**

Projectiles  
Targets and atmospheres  
Crater formation  
Cratering history

### **Atmosphere**

Origins  
Circulation  
Greenhouses

### **Oceans and ice caps**

Oceans  
Subsurface oceans: Europa, Enceladus and Titan  
Icecaps and snow caps

### **Erosion and stratigraphy**

Wind  
Running water  
Stratigraphy

### **Planetary biology**

Origins  
Extinctions  
Detecting life on other planetary bodies  
Terraforming

### **Bibliografia e materiale didattico**

Slides provided by the lecturer.

### **Modalità d'esame**

Oral exam.

*Ultimo aggiornamento 02/10/2018 15:47*