



## **Visiting Professor Program Academic Year 2024/2025**

**TEACHING COMMITMENT:** 12 hours

**COURSE TITLE**

**An Introduction to the Global Carbon Cycle: from Geological Time Scales to the Anthropocene**

**TEACHING PERIOD**

2nd term

**SCIENTIFIC AREA**

Sedimentary Geology, Geochemistry

**LANGUAGE USED TO TEACH**

English

**COURSE SUMMARY**

This course will provide an introduction to the global carbon cycle of the Earth, from geological time scales - where the carbon cycle is determined by exchange fluxes between the surface of the Earth and its geological interior - to the Anthropocene, where relevant carbon cycle processes take place in surface reservoirs, and anthropogenic carbon emissions affect climate and ocean health.

**LEARNING OBJECTIVES**

- Learn the basics of the biogeochemical carbon cycle: reservoirs, processes, time scales;
- Fundamentals of carbon cycle narrative through geological time;
- The dissolved inorganic carbon system in the ocean: pCO<sub>2</sub>, DIC alkalinity and pH;
- Basic introduction to box-modelling of the carbon cycle: mass balance, stable carbon isotopes;
- Coupling of the global carbon cycle to the oxygen and sulfur cycles.

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### **VISITING PROFESSOR PROFILE**

Il/La visiting professor deve avere competenze nell'applicazione e nella modellizzazione della geochimica isotopica alle ricostruzioni paleoclimatiche e paleoambientali nel passato geologico, con particolare riferimento agli isotopi stabili del carbonio e dello zolfo.

### **CONTACT REFERENT**

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