

Paléoclimatologie

Lecturer

François FRIPIAT (Coordinator)

Course mnemonic

GEOG-F410

ECTS credits

5 credits

Language(s) of instruction

French

Course period

Second term

Campus

Solbosch

Course content

Although it episodically deals with other time scales, this course is mainly interested in climate changes that took place during the Quaternary (i.e., from 2.6 million years ago to the present day) which is marked by the glacial cycles. After a brief review on the functioning of the current climate system, we will review the approaches that are used to unravel Earth's climatic history (i.e., archives, proxies, and dating methods). We will then describe how Earth's climate has changed at progressively shorter time scales: tectonic-scale and orbital-scale changes, deglacial and millennial changes, and historical and recent changes. The major themes will be: the causes (forcing) of climate change, the response times of the many components of Earth's climate system, and the interactions and feedbacks among these components.

The practical work associated with this course consists of researching relevant articles that focus on the use of paleoclimatic archives, followed by in-depth reading and oral presentation in front of the class. Attendances at all presentations is mandatory.

Objectives (and/or specific learning outcomes)

Give an overview of the various paleoclimatic archives, discussing both the techniques used and the results obtained, their coherence and the underlying climatic processes

Teaching method and learning activities

Ex-cathedra course and exercises. Powerpoint presentation. Files available on the virtual university.

References, bibliography and recommended reading

W.F. Ruddiman, 2014. Earth's climate, past and future. W.H. Freeman and Company, New York, pp466.

Course notes

Université virtuelle

Other information

Place(s) of teaching

Solbosch

Contact(s)

Laboratoire de Glaciologie - Mme Lelouchier 02-650 22 27

Evaluation method(s)

Oral examination

Evaluation method(s) (additional information)

Oral examination for the theory and oral presentation for the exercises

Main language(s) of evaluation

French

Other language(s) of evaluation, if applicable

English

Programmes

Programmes proposing this course at the faculty of Sciences

MA-ENVI | **Master in Environmental Science and Management** | finalité Environmental Science/unit 1 and finalité Environmental Science/unit 2 and MA-GEOL | **Master in Geology** | finalité Research - 1st year/unit 1 and finalité Research - 1st year/unit 2