When studying the planet Earth, it is usual to consider its different components, atmosphere, oceans, land surface, cryosphere and lithosphere, and add a transverse component, the biosphere. The set of interactions sometimes complex between its different components form what is called the climate system. Four courses are offered addressing climate with different points of view and follow the M1 Climate, Environment, Applications, Research (CLEAR). The course CLEAR-ARCTS provides students with a foundation of knowledge and strong skills on the climate, the environment and Arctic societies, critical region for environmental changes taking place. This course has the originality to offer a complete view of changes in the Arctic, combining natural and social sciences. CLEAR-ARCTS is an international track taught entirely in English.

The right level in one or more basic scientific disciplines (mathematics, physics, mechanics, chemistry, biology, earth sciences) is required to access the 4 courses dealing with climate and environmental issues. More specifically, the Arctic Studies courses requires a good level in a relevant scientific disciplines for the course (physics, chemistry, ecology, earth sciences). A taste for multidisciplinary hard sciences / humanities.
CLEAR course aims to provide students with knowledge and strong skills base on the operation of the climate system and to use it to identify issues and solve problems: climate and global climate change (ICE) to changes in the short and medium term atmospheric environments, marine and continental to local regional scales (OACOS-WAPE) in climate Change and Arctic societies (Arctic studies) and the interactions between continental biosphere and climate (CLUES).

PEDAGOGICAL OBJECTIVES

CLEAR-ARCTS trains its students for professions researcher and research professor, an expert in environmental and social issues in the Arctic, and engineer and responsible for the study. Its business may speak in different sectors and types of entreprises:

• Research Laboratory (thesis)
• Administrations and companies involved in Arctic issues.
• Companies concerned by climate change and management of atmospheric environments, continental and marine, especially in the Arctic (EDF, GDF, VEOLIA, SUEZ, Insurers, ...)
• SME Consultants, tips and expertise in climate and environment (ARIA Tech, CLS, CLIMPACT, HYGEOS, LEOSPHERE, METNEXT, NUMTEC, ACTIMAR, ...).

PERSPECTIVES

The course CLEAR-ARCTS relies on the Arctic Centre UVSQ (CEARC) and several large research laboratories working on the science of climate and the environment (LSCE) and atmospheric sciences and space (LATMOS, LMD).

These laboratories belong to the research federation IPSL (Institut Pierre Simon Laplace, except CEARC) which federates in Ile de France, and for over 20 years, climate research. These labs also offer internship opportunities for students of the master. Finally, they allow students to have access to instruments and advanced calculators for practical work.

LABORATORIES

• Cultures, Environnements, Arctique, Représentations, Climat (CEARC) Cultures, environnements, Arctic, Representations, Climate
• Laboratoire des Sciences du Climat et de l’Environnement (LSCE) Laboratory for Climate Sciences and the Environment
• Laboratoire Atmosphères, Milieux, Observations Spatiales (LATMOS) Laboratory Atmospheres, Environments, Observations Spatiales
• Laboratoire de météorologie dynamique (LMD) Dynamic Meteorology Laboratory

SOCIOECONOMICAL PARTNERS

In addition to partnerships with public research organizations, STEPE master of the courses have developed many partnerships with the social-economic world. According to the purposes, these partners may be involved in the teaching, lecturing, and/or host interns.

These partners are mainly: CEA, CNRS, IRD, INRA, EDF, VEOLIA, ARIA Technologies, Léosphère, ASTRIUM, ...