

**Joint Course Programme**

EUROPROX European Graduate College Proxies in Earth History

GLOMAR Bremen International Graduate School for Marine Sciences

MARUM Excellence cluster "The Ocean in the Earth System"

NEBROC Netherlands Bremen Oceanography Cooperation

NSG Netherlands Research School for Sedimentary Geology

POLMAR Helmholtz Graduate School for Polar and Marine Research

**MARUM / GLOMAR Expert Course:****Introductory Course to Marine Sciences Part I: Physical Oceanography and Climate**

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**Objectives**

The aim of the course is to introduce some main fields of marine sciences, i.e. physical oceanography, paleoceanography, climate research. The programme is multidisciplinary, all disciplines will be discussed as components of an integrated system. Many practicals and exercises will be offered related to the given topics.

**Topics**

- physical properties of seawater, ocean heat budget, thermohaline circulation
- tracer oceanography, introduction to ocean data view software (ODV)
- principles of proxy application in climate research, paleoceanography
- abrupt climate changes, climate variability on seasonal timescales
- radiocarbon dating

**Location**

MARUM, University of Bremen, Leobener Strasse, 28359 Bremen, Germany  
Room 2070

**Course schedule**

Morning (9.00-12.30) and afternoon (13.30-17.00) sessions

**To subscribe**

Please send a mail to Christina Klose ([ecolmas@uni-bremen.de](mailto:ecolmas@uni-bremen.de)). Please give your name, status (PhD student, Postdoc or Master Student), institute / university and department or faculty.