Université de Bretagne Occidentale

MASTER PHYSIQUE

PARCOURS PHYSIQUE OCÉAN ET CLIMAT

semestre 9 Physique POC

Observation circulation et masses d'eaux

Présentation

this course provides a global and descriptive view of physical oceanography

physical properties of the ocean, of mean currents, of forcings and of the main equilibria governing ocean circulation, are described

The main water masses are presented, as well as the role of turbulence in the ocean and of sea ice-ocean interactions

3 crédits ECTS

Volume horaire

Travaux Dirigés : 11h
Cours Magistral : 17h

Objectifs

ObjectivesL learn the following notions

potential density, neutral surfaces, passive tracers

forcing and physical properties of water masses ; main water masses, major ocean currents

analyzing water masses with T/S diagrams, analysing hydrological sections

mean and eddy components of the circulation

Pré-requis nécessaires

M1 in Physics or equivalent

Compétences visées

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Descriptif

Contents

physical properties and thermodynamics of seawater

spatial distribution of water masses

main ocean currents

passive tracers - mixing processes

the mixed layer

ocean turbulence - impact on biogeochemistry

introduction to sea ice

Bibliographie

Fieux, Michèle : L'Océan Planétaire, Presses de l'ENSTA, Paris, 421p, 2010

Open University Course Team, Ocean Circulation, Pergamon Press, 238p, 1989

Open University Course Team, SeaWater : Its composition, properties and behaviors, Pergamon Press, 168p, 1989

Talley, Lynne D., G. L. Pickard, W. J. Emery, J. H. Swift : Descriptive Physical Oceanography – an introduction, Elsevier, 6th edition, 555p, 2011

Modalités de contrôle des connaissances

Session 1 ou session unique - Contrôle de connaissances

Nature de l'enseignement	Modalité	Nature	Durée (min.)	Coefficient	Remarques
	CC	Autre nature		40%	
	CT	Ecrit - devoir surveillé	120	40%	
	CT	Oral - exposé	15	20%	

Session 2 : Contrôle de connaissances

Nature de l'enseignement	Modalité	Nature	Durée (min.)	Coefficient	Remarques
	Autre modalité	Autre nature			oral commun de 40 mn pour toutes les matières