

CURSO: **SATELLITE OCEANOGRAPHY**

CLAVE:

PROGRAMA: Maestría y Doctorado en Oceanografía Física.

DEPARTAMENTO: Oceanografía Física

DIVISIÓN: Oceanología

VIGENCIA: 1998

REQUISITOS: Oceanografía Dinámica I y II

HORAS DE TEORÍA: 48

HORAS DE LAB.: 16

CRÉDITOS: 7

OBJETIVO: El estudiante entenderá las bases de varios dispositivos y podrá analizar las mediciones hechas desde satélites con la finalidad de entender mejor los fenómenos oceanográficos.

TEMARIO:

1	ERS and ENVISAT missions	5 h
	<ul style="list-style-type: none"> a. Missions summary b. Data acquisition and dissemination 	
2	Applications in oceanography	5 h
	<ul style="list-style-type: none"> a. Overview and experiences from ESA projects b. Impact on air-sea interaction studies c. Relevant aspects of wave modelling for satellite data assimilation 	
3	Microwave instruments	10 h
	<ul style="list-style-type: none"> a. Microwave scattering basics b. Principles of Synthetic Aperture Radars (SAR) c. Principles and operation of Altimeter d. Basic aspects of ocean surface temperature measurements with the Along Track Scanning Radiometer (ATSR) e. Basics for wind speed and direction estimates over the ocean surface using a Scatterometer 	

- 4 Applications 24 h**
- a. Ocean waves in coastal regions from SAR data
 - b. Inversion of radar image spectra
 - c. Wind retrieval from SAR ocean images
 - d. The inter-look cross spectrum for SAR ocean wave retrieval
 - e. Data assimilation in wave models
 - f. Sea surface contaminants
 - g. Internal waves
 - h. Atmospheric and ocean surface features revealed by SAR, part I
 - i. Ship detection
 - j. Erosion in coastal regions
 - k. Wave climatology from altimeter data
 - l. Ocean circulation
 - m. Validation of sea surface wind vector estimated from the scatterometer
 - n. Extreme wind conditions
 - o. Average wind fields and climatology
- 5 Synergy of information from various sensors 4 h**
- a. Global ocean climate applications of SST and other satellite derived data
 - b. Atmospheric and ocean surface circulation features revealed by SAR, part II

BIBLIOGRAFIA:

- Manual of Remote Sensing, 3rd Ed., Vol. 2, Principles & Applications of Imaging Radar. Edited by Floyd M. Henderson; Anthony J. Lewis.
- Space Remote Sensing of Subtropical Oceans. Cho-Teng Liu. Pergamon Press.
- Satellite Oceanography: An Introduction for Oceanographers and Remote-Sensing Scientists. I.S. Robinson.