



SCHEDA DELL'INSEGNAMENTO (SI)

“MARINE GEOLOGY ” SSD GEO/03

DENOMINAZIONE DEL CORSO DI STUDIO: LAUREA MAGISTRALE IN BIOLOGIA ED ECOLOGIA DELL'AMBIENTE MARINO ED USO SOSTENIBILE DELLE SUE RISORSE

ANNO ACCADEMICO 2021-2022

INFORMAZIONI GENERALI - DOCENTE

DOCENTE: PROF. DAVID IACOPINI.

TELEFONO: +39081679290

EMAIL: DAVID.IACOPINI@UNINA.IT

INFORMAZIONI GENERALI - ATTIVITÀ

INSEGNAMENTO INTEGRATO (EVENTUALE):

MODULO (EVENTUALE):

CANALE (CURRICULUM EVENTUALE):

ANNO DI CORSO : 2021-2022

SEMESTRE: II

CFU:6

INSEGNAMENTI PROPEDEUTICI

None

EVENTUALI

Knowledge of fundamental of Physics, Mathematic, Chemistry

PREREQUISITI

OBIETTIVI FORMATIVI

The main scope of the course is to introduce the student to the foundations of the marine geology and the main marine geophysics tools to explore the seafloor and past subsurface marine structures .

The course will start with looking at introducing the historical aspects of the marine geosciences in relation to the plate tectonic revolution. It will train the student to explore and recognize the main architecture of the oceanic crust grounded on the main observation from both subsurface marine data (from IODP data and exploration geophysics) and ophiolites outcrops. The course will give a basic introduction to the application of marine geological and marine geophysical instrumentation and field methods (seismic, multibeam and sediment sampling) for acquisition and analyses/interpretation of seismic profiles, bathymetric data and sediment cores. It will explore active erosive and depositional processes in the marine environment and the main depositional environment (from delta to deep water depositional system). The course will involve the study of the range of sediment delivery processes from shelf to deep water, their deposits, and bed-thickness distributions as an archive of controls (e.g., seismicity, climate change, etc.). It will propose principles of sequence stratigraphy and their application to modern marine setting. The concept will be applied to develop the principle of site surveying and apply geological and geophysical methods and integrate, analyse, interpret, and critically discuss the results and present the results in a written report.

RISULTATI DI APPRENDIMENTO ATTESI (DESCRITTORI DI DUBLINO)

Conoscenza e capacità di comprensione

The student will have to

- demonstrate and practice skills in compiling, interpret and summarize different geological archives and observations/data/principles with graphs and figures with geosystem data (e.g. seismic profiles, core data, time series) .
- perform interpretation and field and laboratory investigations on collected field data and compile these data archives

Capacità di applicare conoscenza e comprensione

- The student will use a precise geological language for describing and discussing marine geological processes and events.
- The student can plan and implement marine geological surveys and apply geological and geophysical methods and integrate, analyse, interpret and critically discuss the results and present the results in a written report.

PROGRAMMA-SYLLABUS

Programma del corso

- History of the modern Marine geosciences-Overview •
- Foundation: Time and dating; Interpreting magnetic anomalies •
- Seafloor mapping (echo sounding-Multibeam): principles.
- Seismic data/ reflectivity: principles. Seismic data and sub- bottom profiling
- Ocean origin: crustal structure Mid Ocean Ridge. Geophysics data
- Ocean origin: Mid Ocean Ridge. Geological data
- The genesis of a passive margin. Rift tectonic
- Rift tectonic; The main structure
- Passive margin architecture
- Ocean sediments: Marine Depositional environments
- Deep water system: process and trigger.
- Deep water system: Turbidite. (seismic evidence)
- Deep water system: Mass Transport Deposits (seismic evidence)
- Deep water system: Canyon Channel structure (seismic-sonar evidence)
- Sequence stratigraphy: principles
- Sequence stratigraphy and depositional system
- Sequence stratigraphy data contribution to climate change/evolution
- Missisipi case and the Adriatic sea (Venice, Po plain)
- Marine data contribution to climate change/evolution
- Site survey :for IODP/ for geotechnical uses.Practicals.:Petrophysics Sonar data examples
- Marine geology of the bay of Naples.
- Visit to ISMAR

MATERIALE DIDATTICO

The course require getting access to the main ppt and pdf file material and subsurface data released for the practicals

Yexbook suggested to integrate geological data

- *Press and Siever, Understanding Earth, W.H. Freeman & Co., 1998.*
- *Ruddiman, W. F., Earth's Climate : Past and Future, Second Edition, W. H. Freeman and Company, 388 pp., 2008*

MODALITÀ DI SVOLGIMENTO DELL'INSEGNAMENTO

Frontal teaching

Practical and group exercises

VERIFICA DI APPRENDIMENTO E CRITERI DI VALUTAZIONE

Practical (site survey) (40%): project report and final presentations

a) Modalità di esame:

L'esame si articola in prova	
scritta e orale	
solo scritta	
solo orale	60%
discussione di elaborato progettuale	40%
altro	

In caso di prova scritta i quesiti sono (*)	A risposta multipla	
	A risposta libera	
	Esercizi numerici	

(*) È possibile rispondere a più opzioni

b) Modalità di valutazione:

Report (40%) and an oral examination