

General Information	
Academic subject	Coastal system geomorphology
Degree course	Natural and environment sciences
Curriculum	????
ECTS credits	3 CFU + 1 Ext. Lab.
Compulsory attendance	Strongly recommended
Language	Italiano with slides in English

Subject teacher	Name Surname	email address	SSD
	Giuseppe Mastronuzzi	Giuseppe.mastronuzzi@uni-ba.it	GEO04

ECTS credits details	Area	SSD	CFU/ETCS
Basic teaching activities	Geografia Fisica e Geomorfologia	GEO04	3 + 1

Class schedule	
Period	II SEM
Year	II
Type of class	Frontal Lessons and external laboratory

Time management	
Hours	100
In-class study hours	24
Out-of-class study hours	52

Academic calendar	
Class begins	2021, April 12
Class ends	2021, May 17

Syllabus	
Prerequisites/requirements	The achievement of the educational objectives requires, on the part of the student, the knowledge acquired in the field of geological subjects (Physical Geography and Geology) and ii) generic skills in basic scientific subjects (Physics and Biology). Working students must possess these prerequisites in a similar way to those attending ones.
Expected learning outcomes	<p><i>Knowledge and understanding</i> Acquisition of knowledge for the study of the coastal physical landscape, its evolution and its dynamics. Acquisition of the essential basic concepts of coastal geomorphology through: i - the classification and definition of physical genetic processes in relation to the biological components of coastal landforms; ii - the recognition, identification and nomenclature of the landforms of the coastal landscape; iii - understanding and knowledge of the coastal landforms dynamics. This will be achieved through theoretical lessons.</p> <p><i>Ability to synthesize</i> Particular attention will be paid to: i - the correlation of the different processes for the definition of the coastal landscape and its components; ii - the definition of the different morphogenetic and morphoclimatic systems existing on the globe; iii - the interactions of physical processes with anthropic activity. This will be achieved through discussions between students and teachers.</p> <p><i>Ability to apply knowledge and understanding</i> Acquisition of knowledge regarding the applicative features of geomorphology in the context of integrated</p>

	<p><i>coastal zone management (ICZM). This will happen through discussion of case studies with the teacher or in work groups and during the external laboratory activities.</i></p> <p><i>Autonomy of judgment</i></p> <p><i>Based on the theoretical lessons and the exposure of cases discussed during the external laboratory, the student will acquire the critical ability with respect to the knowledge available in order to achieve: i - the classification and cartographic representation of coastal forms and processes, ii - the problem solving for the purpose of implementing knowledge with the identification, recognition, evaluation and formulation of interventions aimed at planning a geomorphological study, including an application that is capable of providing answers and solutions to stakeholders and decision makers</i></p> <p><i>Communication skills</i></p> <p><i>Participation in discussion groups of case studies for the acquisition of the ability to: i - written and graphic presentation of fundamental principles and concepts specific to the study themes; ii - description of the techniques and procedures for data acquisition, processing and interpretation with clarity and language properties.</i></p> <p><i>Learning ability</i></p> <p><i>Acquisition of the ability to deepen the understanding of geomorphological concepts by developing autonomous reasoning aimed at identifying the links and differences between the various topics of the course of study also on the basis of knowledge resulting from previous courses. This will happen through discussion of case studies with the teacher or in work groups</i></p>
<p>Contents</p>	<p>Introduction (4 hours) Definition of Geomorphology. Definition of coastal area. The coastal environment and the coastal landscape. Coastal morphogenetic systems and coastal morphoclimatic systems.</p> <p>Coastal systems dynamics (6 hours) Sea level. The concept of energy balance and mass balance. Coastal morphogenetic processes. Tidal waves and currents.</p> <p>Coastal classification (8 hours) Rocky coasts: high, low and cliff Coastal mobile systems: beach, dune, retrodune area Delta systems: delta and estuary Tidal systems: tidal flats Coral reefs; barrier reef, fringing reef.</p> <p>Investigation methods (6 hours) The use of laser scanners, DGPS, lidar, multibeam, sidescan sonar, SBP, geoelectric and terrestrial seismic, penetrometer.</p> <p>External Laboratory (15 hours) Applications of surveys techniques</p>
<p>Course Program</p>	
<p>Bibliography</p>	<p>Scientiphic book</p> <p>Bird E. (2011). Coastal Geomorphology. John Wiley & Sons,</p>

	<p>Chichester UK. 436 pp Pranzini E. (2004). La forma delle coste: geomorfologia costiera impatto antropico e difesa dei litorali. Zanichelli, 235 pp. Surace L., Milli M. (2011). Le linee della costa. Definizioni, riferimenti alimetrici e modalità di acquisizione dei dati. Alinea Editrice, 80 pp Woodroffe C.D. (2003). Coasts: Form, Process and Evolution. Cambridge University Press, 623 pp.</p> <p>Technical book</p> <p>APAT (2007). Atlante delle opere di sistemazione costiera. http://www.isprambiente.gov.it/it/pubblicazioni/manuali-e-linee-guida/atlante-delle-opere-di-sistemazione-costiera APAT (2014). Strategie di intervento per la difesa del mare e delle zone costiere dagli inquinamenti accidentali da idrocarburi e da altre sostanze nocive. http://www.isprambiente.gov.it/it/pubblicazioni/quaderni/ricerca-marina/quaderni-delle-emergenze-ambientali-in-mare/leadImage/image_view_fullscreen ISPRA (2014). Linee guida per gli studi ambientali connessi alla realizzazione di opere di difesa costiera. http://www.isprambiente.gov.it/files/pubblicazioni/manuali-lineeguida/MLG_105_14_finale.pdf</p>
Notes	<p>The texts indicated are the reference material for studying during the course and for taking the exam. The sitography instead introduces the student to the consultation of bibliographic sources and online resources regarding coastal dynamics.</p>
Teaching methods	<p>The transfer of theoretical notions related to coastal dynamics takes place through the comment and common discussion of slides that remain available to students.</p>
Assessment methods	<p>The student's assessment only includes an oral test. The score is attributed by a mark expressed in thirtieths. It also takes into account i) the student's participation in the external laboratory and ii) the preparation of the related documents. An excellent rating is the result of meeting most of the following evaluation criteria</p>
Evaluation criteria	<p>Ability to apply knowledge and understanding The student is called to apply the theoretical aspects acquired to regional case studies.</p> <p>Autonomy of judgment The student is able to independently identify a logical path between causes and effects in the evolutionary dynamics of the coastal landscape. The student demonstrates his ability to make the choice of methodological approaches suitable for describing / solving processes / problems related to coastal dynamics.</p> <p>Communication skills The student must have acquired the ability to fully communicate the concepts learned and to use correct scientific language.</p> <p>Learning ability The student must demonstrate that he has acquired the tools to enrich his knowledge also through the individual and group</p>

	study paths proposed during the course.
Further	