

General information	
Academic subject	Physical geography
Degree course	Environmental sciences
Academic Year	I
European Credit Transfer and Accumulation System (ECTS)	8
Language	Italian
Academic calendar (starting and ending date)	I semester (from 2021, October 1 up to 2022, January 15)
Attendance	Strong suggested

Professor/ Lecturer	
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Tutoring (time and day)	Tuesday, hours: 11-13 polo ionico Taranto, requested by email

Syllabus	
Learning Objectives	At the end of the Physical Geography lessons, the student must know and understand the complexity of the earth system and the components of exogenous dynamics. Mainly, he have to be able to analyze a problem of landscape dynamics in its components. This means to be able to analyze a case study and provide an articulated answer that through a theoretical recognition of the knowledges permit to recognize active processes in a defined area to describe them quantitatively as well as qualitatively with autonomy in judgement. The communication skills must be shown by each students by the use of graphics, drawings and written examinations putting in evidence its learning ability. For this reason the student must also be able to read topographic charts and bathymetric maps.from the point of view of the dynamics of the landscape.
Course prerequisites	The student must possess the notions derived from math, physics and chemistry at the high school level. He must also possess the basics of earth dynamics, astronomy and meteorology. On such bases it will be possible to root the understanding of the physical geographic processes at university level. With regard to laboratory activity and the use of topographical and nautical charts, the student must have the principles of geometry and the use of compass, millimeter paper, coupled brackets and goniometer designed for technical drawing. Regarding field activities, although students with limited mobility may be able to access, there should be at least two activities on the ground in climatic conditions which may not be optimal.
Contents	Definition of Physical Geography and Geomorphology: Purposes, Methods and Problems. Endogenous processes and exogenous processes; Erosion and sedimentation.



	<p>The evolution and dynamics of the physical environment. Earth's energy system. Concept of the relief energy: potential and kinetic energy, base level. Concept of deacronism and paroxysm The great forms of the earth surface: Cratonic Areas. Geotessiture, morphostructures and morphosculture. Concept of evolution and concept of dynamics. Relationships between surface shapes and lithostructural features.</p> <p>The man as morphogenetic and morphodynamic agent. Climate: Definition of meteorological weather and of climate; Elements and factors of the climate. Short-term and long-term cyclical variation of the climate; The climatic areas. The dynamics of the atmosphere.</p> <p>Landscape and climate: the shaping of the physical landscape; endogenous and exogenous agents and processes. Morphogenetic and morpho-climatic systems: active, inactive, relict and fossil landforms, polygenetic landforms. Poligenetic and polycyclic landscapes.</p> <p>The degradation of the rocks: disgregation and alteration: thermoclastism, cryoclastism and aloclastism. Oxidation, hydrolysis of silicates, solution, karstic process. The pedogenesis and soil profile. Soils and climate.</p> <p>Slope processes: Soil and subsoil instability. The action of wild waters. The landslides: classification. Predisposing, determinants and triggering factors.</p> <p>Continental waters: The water cycle, the hydrological balance. Channelled waters: hydrodynamic features. Hydrographic pattern, hierarchy. Hydrographic basin and hydrogeological basin. Fluvial landforms. Lakes: natural and artificial lakes. River mouth systems: delta and estuaries. Glaciers: the shaping of the glacial landscape Karst processes: Conditioning factors: the climate, the lithostructural features. Karst landscape: the three-dimensional system; Karst landscapes and climate. Karst and tectonics.</p> <p>The sea: The action of the sea. Sea level movements: long, medium, short, and short period movements: causes and effects. Movements of water masses: waves, tides and currents. The concept of coastal area. Coastal and marine landscape. Coast classification: beaches and rocky coasts.</p> <p>Wind: Definition of wind. The wind rose. The action of the wind.</p> <p>LABORATORIES Cartography: The shape of the earth: the ellipsoid of rotation; The geoid. The representation of the terrestrial surface and of the seabed, The Italian cartography. Analysis of topographic maps and of batimetric charts. Teaching approach to the cartography</p>
Books and bibliography	<p>There is no single book available to cover all the themes of the course of Physical Geography. To develop the critical ability and synthesis of students, it is suggested to refer to the following volumes: 1 - Dramis F. Geografia fisica: comprendere il paesaggio. Piccin, 2005. 2 - Smithson P., Addison K., Atkinson K. (2002). Fundamentals of the Physical Environment. Routledge, London, 627 pp. There is no auxiliar text produced by the teacher; there will be only the distribution of a field trip guide which will affect all the topics discussed during the frontal lessons.</p>

Additional materials	For further information please refer to the following volumes: 1- Fairbridge R.W. (2003). The Enciclopedia of Geomorphology. Reinhold Book Corporation, II ed. 3- Ciccacci S. (2010). Le forme del rilievo. Atlante illustrato di geomorfologia. Mondadori Università, 514 pp In addition, to carry out laboratory activities students must have: coupled brackets, compass, goniometer, various stationery, nautical brackets, nautical compass Teaching supports are: .ppt presentations; slides, tutorials, examination test etc .
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Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
200	54	39	107
ECTS			
	6	2	
Teaching strategy			
Expected learning outcomes			
Knowledge and understanding on:	At the end of the lessons of the Physical Geography course, the student will have to know and understand the complexity of the earth system and the components of the exogenous dynamics but mainly he will have to be able to analyze a physical geographic problem in its components. This means knowing how to analyze a case study, and providing an articulated answer that, through a theoretical survey, is able to recognize the active processes in a specific area, defining them from a quantitative as well as a quantitative point of view. Particular attention will be paid to the processes of climate change and the effects on the physical landscape.		
Applying knowledge and understanding on:	The acquired knowledge can be applied directly to the study and understanding (also in terms of example of analysis of mitigation and adaptation techniques to climate change and natural risks)		
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> Understanding and analyzing the factors that control the dynamics of the atmosphere, the geosphere and the hydrosphere will give the student an autonomy of judgment based on the application of the scientific method for everything related to the basic components of earth dynamics. • <i>Communicating knowledge and understanding</i> The communication phase will take place both on a graphic and written and spoken level. For this reason the student must also be able to read the topographic maps both in paper and digital format from the point of view of the dynamics of the territory. • <i>Capacities to continue learning</i> The different case studies presented and the interactive teaching methods will allow the student to learn independently by applying basic methods and rules of the scientific method. 		

Assessment and feedback	
Methods of assessment	Evaluation will be the same for attending or non attending students; it will consist in



	<p>a written test and an oral examination. The exam score is expressed by a vote in 30/30. The student will have to complete a final written test on the whole program and some intermediate written essays. The written examinations will concern the work done in the laboratory and on the field, on nautical cartography and on topographic maps in relation to these cartographies and the use of laboratory materials (nautical and topographic charts, millimeter paper, coupled and nautical brackets, compass, goniometers).</p>
Evaluation criteria	<p>About the final vote the only factors that will determine it will be: the knowledge of discipline bases; ii - the ability to analyze and synthesize; iii - skills and ability to communicate in Italian correctly - spoken and written - even with technically correct drawings and graphs. The presence during the frontal lessons, the exercises in laboratory and during the field work, is strongly recommended since absences can preclude a positive outcome. In summary, the following elements are taken into account in the evaluation of the student's examination: i. Knowledge; ii. Analysis capabilities; iii. Synthesis capabilities; iv. Language Skills; v. Autonomy of judgment. Some examples of elements are: the logic followed by the student in resolving the question; the correctness of the procedure identified for the solution of the question; the adequacy of the proposed solution in relation to the skills that the student should have acquired at the end of the course; the use of an adequate technical language.</p>
Criteria for assessment and attribution of the final mark	<p>In order to pass the examination with a score of not less than 18/30, the student must demonstrate that he has gained sufficient knowledge of the arguments objects of the written test, a basic knowledge of the topics that can be dealt with during oral examination also with the realization of drawings, graphics and schemes. To achieve a score of 30/30 and praise, the student must demonstrate that he has gained an excellent knowledge of all the topics dealt with during the Physical Geography lessons both for frontal lessons and for the laboratory experiences and field work.</p>
Additional information	

Bari, 04/09/21

Firma

(Prof.)