General information	
Academic subject	**Lab of Geography and Physical Geography**
Degree course	Natural Science
Academic Year	I
European Credit Transfer and Accumulation System (ECTS)	2
Language	Italian
Academic calendar (starting and ending date)	First semester (October 2021-January 2022)
Attendance	Mandatory

Professor/ Lecturer	
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Department and address	Department of Geo-environmental Sciences
Virtual headquarters	TEAMS
Tutoring (time and day)	From Monday to Friday by appointment

Syllabus	
Learning Objectives	The student will be able to recognize the landforms in relation to their formation processes and their dynamics. Furthermore, the essential knowledges for the reading of topographic maps and the representation of the territory will be provided. These objectives will be indispensable for the study of the geological and geomorphological disciplines of the course of study.
Course prerequisites	*Good knowledge of the Geography.*
Contents	*Orientation: Cardinal points. Geographical grid, geographic coordinates, kilometric coordinates.* *Representation of the Earth's surface: Means of representation: globes, models, maps; numerical and graphic scale. Classification of geographical maps (scale and purpose). Cartographic projections: properties (equivalence, equidistance, conformity and isogony), construction (true and conventional). True projections: perspective (centrographic, stereographic, scenographic and orthographic; polar, equatorial and oblique) and development (cylindrical, conical; tangent and secant). Modified projections: cylindrical (Mercator conform) conic (Lambert conform). Conventional projections: pseudocylindrical (sinusoidal, with Gaussian forms, homalographic by Mollweide) and pseudocylindrical (polyhedral and polyconic). Interrupted or discontinuous projections.* *Reading and interpretation of topographic maps: Universal Transverse Mercator Projection; Gauss-Boaga modifications. Cartographic zones, bands, zones. Cartographic symbolism: planimetric (hydrography, communication routes, stable works, vegetation, borders, etc.) and altimetric (herringbone, shading, strong line, hatching, altimetric and isoipse tints). The topographic map of Italy of the I.G.M. (sheets, quadrants, tablets and sections), thematic derivative cartography and special Italian maps. Reading and interpretation of a topographic and nautical map. Coordinates calculation of a point in different reference systems.* *Topographic section.* *Hydrographic basin, hierarchy of watercourses and calculation of bifurcation ratios* *Didactics: Approaches for teaching and learning strategies; Collection and processing of geographic information*

Books and bibliography	De Filpo M. (2017) - Un' introduzione alla cartografia di - Nuova Cultura Aruta L., & Marescalchi P. (2020). Cartografia. Lettura delle carte. Dario Flaccovio Editore. ACCORDI B, LUPIA PALMIERI E.- Il globo terrestre e la sua evoluzione. – Zanichelli NEVIANI I & PIGNOCCHINO FEYLES C. - Geografia generale - SEI Torino Mori A. *- Geografia astronomíca e cartografía. *- Libreria Goliardica Firenze. Strahler A. N. (1984) - Geografia Fisica - Piccin. Sestini A. - Lettura ed interpretazione delle carte geografiche. Le Monnier.
Additional materials	*Slides of the course*

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
50	*0*	*30*	*20*
ECTS			
2			

Teaching strategy	
	Lectures with the use of PowerPoint. Classroom exercises for: Reading and interpretation of topographic maps, coordinates calculation in different reference systems, Topographic section, River basin, hierarchy of waterways and calculation of bifurcation ratios. Open discussions on individual cases identified in the different papers distributed to the students in all the exercise sessions. Students are encouraged to work in groups to discuss and make observations together in order to develop critical and self-assessment skills.
Expected learning outcomes	
Knowledge and understanding on:	○ The student will learn the symbolism used in cartography, the concept of scale and the legend. It must be able to recognize the different cartographic projections used. He will have to be able to understand the definitions and meaning of a topographical section and a hydrogeological basin. He will have to learn to imagine the landscape starting from the symbolic representation on paper. This knowledge will be acquired through frontal lessons.
Applying knowledge and understanding on:	○ The student should be able to calculate the coordinates of a point, to perform a topographical section, to delimit a hydrographic basin, to perform the hierarchization of water courses and calculate the bifurcation ratio. He must also learn to interpret the landscape starting from the symbolic representation in map.
Soft skills	• *Making informed judgments and choices* ○ The student must be able to interpret geographical and topographical maps at various scales, starting from the recognition of the symbology of the legend. He must also learn to interpret the landscape starting from the symbolic representation on map. The participatory discussion between students and lecturer during classroom exercises will be the teaching tool useful for developing these skills. • *Communicating knowledge and understanding*

	○ The student will have to acquire new vocabulary deriving from the acquisition of the correct and most effective terminologies to transfer knowledge related to reading a topographic map. During the semester, the student will be encouraged to actively participate in working group during the exercises and expose the results of the observations or the development of concepts to the colleagues. • *Capacities to continue learning* ○ The student will have to acquire the ability to understand how and why different cartographic products are chosen according to different situations. He will have to develop the ability to extract as much information as possible from the maps. The student will acquire this ability during the discussions and exercises in the lesson.

Assessment and feedback	
Methods of assessment	*Written exam*
Evaluation criteria	• *Knowledge and understanding* ○ The student must demonstrate knowledge of all the contents of the course and in a special way: the projections used in official Italian cartography, the ability to read a legend and apply it to the map, the scale, the meaning of a topographic and bathymetric section, a hydrogeological basin. • *Applying knowledge and understanding* ○ The student must be able to calculate the coordinates of a point, perform a topographic section, to delimit a hydrographic basin, to perform the hierarchy of water courses and calculate the bifurcation ratio. • *Autonomy of judgment* ○ In addition to the acquisition of the notions explained in the classroom and during the exercises, the student will have to demonstrate, with the personal ability to provide reasoning and arguments, to be able to create simple but significant connections between geographic and cartographic knowledge and those of other disciplines such as geology and geomorphology. In this way the student will be able to pass the exam with a very positive evaluation. • *Communication skills* ○ The ability to express concepts and formulate interpretations with properties of language and clarity will be evaluated very positively by making use of the scientific terminology learned during the semester. These skills, together with the previous ones, guarantee a very positive evaluation of the student's preparation and performance. • *Capacities to continue learning* ○ During the final exam, the student must show that they have acquired critical skills and are able to independently achieve new knowledge in order to solve the problems in the interpretation of topography. These skills will contribute to a strongly positive evaluation of the final exam.
Criteria for assessment and attribution of the final mark	The criteria will focus on the correct execution of the exercises provided in the written test.
Additional information	

UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

DIPARTIMENTO DI BIOLOGIA

10/09/2021

Signature