



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Architettura		
ACADEMIC YEAR	2022/2023		
BACHELOR'S DEGREE (BSC)	TOWN PLANNING AND URBAN STUDIES		
SUBJECT	GIS LABORATORY		
TYPE OF EDUCATIONAL ACTIVITY	A		
AMBIT	50093-Rappresentazione		
CODE	20611		
SCIENTIFIC SECTOR(S)	ICAR/06		
HEAD PROFESSOR(S)	ORLANDO PIETRO	Ricercatore	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	78		
COURSE ACTIVITY (Hrs)	72		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	ORLANDO PIETRO Tuesday 10:30 12:30 Dipartimento Dicam - Area Geomatica, facolta di ingegneria secondo piano		

DOCENTE: Prof. PIETRO ORLANDO

PREREQUISITES	Basic knowledge of Reference Coordinate System (UTM, GAUSS- BOAGA, WGS84, ITRS89) and digital maps (vectorial and raster format).
LEARNING OUTCOMES	<p>Learning outcomes</p> <p>The aim of the course is to provide students with theoretical knowledge and operational methods that make them able to design and implement a Geographic Information System and to apply the most common spatial analysis techniques.</p> <p>The student at the end of the course will have knowledge of the problems concerning the implementation of a GIS and related spatial analysis techniques . In particular, the student will be able to understand and use all the basic techniques of data analysis to vector structure and raster structure. Particular attention will be given to the statistical analysis of spatial data and interpolation techniques.</p> <p>Judgement Autonomy</p> <p>The student will be able to analyze and explore geographic data ; He will be able to collect and organize a sampling of environmental data , to insert , to analyze and display data in a GIS system and to formalize judgments about the possible presence of spatial patterns .</p> <p>Communication Abilities</p> <p>The student will acquire the ability to communicate and express issues concerning the object of the course . Will I be able to hold conversations on spatial data and spatial analysis techniques , to highlight issues related to the structuring of a relational spatial database and offer different solutions .</p> <p>Learning Abilities</p> <p>The student will acquire the ability to communicate and express issues concerning the object of the course . Will I be able to hold conversations on spatial data and spatial analysis techniques , to highlight issues related to the structuring of a relational spatial database and offer different solutions .The educational tools used for this goal include handbooks and manuals, as well as Power Point presentations.</p>
ASSESSMENT METHODS	<p>Evaluation criteria</p> <p>The student will have to describe the exercitation about planning and realization of a GIS with a DataBase regarding Urbanistic matter. During the exam the student will have to answer at different questions (at least 3 questions) on all of the topics described in the list below (see "Programma dell'insegnamento").</p> <p>The final evaluation aims at appraising whether the student possesses a good knowledge and comprehension of the topics, and whether he/she has acquired the ability to interpret and the autonomously judge actual cases (i.e. the geographical areas he/she studied or analyzed).</p> <p>The lowest evaluation grade will be achieved if the student proves his/her knowledge and comprehension of the main subjects, at least within a general framework, and can apply that knowledge. The student shall also be able to present to the examiner, the topics related to GIS matters and DataBase planning. Below that threshold, the student will not be able to pass the examination. On the contrary, the more the student will be able to interact with the examiner and discuss the topics, and the more he/she will prove to have acquired the basics of GIS and the DATABASE planning, the higher will be the evaluation grade.</p> <p>The evaluation grades range is comprised between 18 and 30.</p>
EDUCATIONAL OBJECTIVES	The aim of the course is to provide students with theoretical knowledge and operational methods that make them able to design and implement a Geographic Information System and to apply the most common spatial analysis techniques .
TEACHING METHODS	Lessons, Classroom Exercises, Seminars.
SUGGESTED BIBLIOGRAPHY	<ul style="list-style-type: none"> •P. A. Longley, D. J. Maguire, M. F. Goodchild, D. W. Rhind - Geographic Information Systems and Science, Wiley, John & Sons •G. Biallo: "Introduzione ai Sistemi Informativi Geografici", Ed. MondoGIS (www.mondogis.it) - Materiale didattico (appunti, slides) prodotto dal docente/tutor

SYLLABUS

Hrs	Frontal teaching
6	information and GIS
8	the actual rappresentation in a GIS, vectorial ad raster maps
6	Geo-data acquisition and analysis
6	spatial query and by features
6	spatial analysis techniques
6	vectorial data analysis
6	Italian cartographic reference systems: Gauss boaga, UTM and etrs89
6	Digital maps: raster and vector format. Vector primitives, radiometric and spatial resolution

Hrs	Practice
8	analysis of territorial data by GIS techniques
8	analysis spatial data
6	vectorial data analysis