

Academic Year: 2019/2020		
Course: Geographic Information Science		
Coordinator: Eusébio Reis		
Teaching Staff: Eusébio Reis; Patrícia Abrantes		
ECTS: 6	Weekly Hours: 3,0 h	Typology: Theoretical-practical
Contents		
<p>1. GISc Introduction Overview, Fundamentals, History</p> <p>2. Geographic Information and Spatial Data 2.1. Properties of Spatial Data 2.2. Models and structures of spatial data 2.3. Geographical data base 2.4. Uncertainty and Error Assessment</p> <p>3. GIS and spatial analysis functions 3.1. GIS as toolboxes 3.2. GIS Spatial analysis: Vector and Grid analysis 3.3. Trends and further developments in GISc</p> <p>4. Visualization and cartography 4.1. GIS, data visualization and cartography 4.2. Digital thematic cartography 4.3. Cartographic outputs: printing and map export</p> <p>5. GIS for Applied Sciences</p>		
Objectives and skills		
<p>Objectives:</p> <ul style="list-style-type: none"> - Basic knowledge about the sciences that support GISc; - Test and analyse different GIS tools to solve identical problems; - Identify main scientific and technical advances in GIS. <p>Skills:</p> <ul style="list-style-type: none"> - To have a domain of the concepts and GISc semantic; - To understand how geographic data is organized into different GIS environments; - To have a glance of GIS spatial analysis in most popular and open source GIS programs; - Know how to apply similar methodologies through different GIS programs. 		
References		
<p>By R (Ed.) (2001) Principles of Geographic Information Systems: an introductory textbook. ITC Educational Textbook Series 1. The International Institute for Aerospace Survey and Earth Sciences (ITC), Enschede, Netherlands. 490p.</p> <p>Duckham M, Goodchild M, Worboys M (eds) (2003) Foundations of Geographic Information Science. Taylor & Francis. 256p.</p> <p>Longley P, Goodchild M, Maguire D, Rhind D (eds) (2005) Geographical Information Systems and Science. John Wiley & Sons (2.^a ed.), Chichester, England. 517p.</p> <p>Maguire D, Goodchild M, Rhind D (eds) (1991) Geographical Information Systems: Principles and Applications, 2 volumes. Longman Scientific & Technical, England.</p> <p>Matos J (2001) Fundamentos de Informação Geográfica. Geomática. Lidel Ed. Técnicas. 326p.</p> <p>Wilson J, Fotheringham A (eds) (2008) The handbook of Geographic Information Science. Blackwell Publishing. 634p.</p>		
Knowledge evaluation methods and their partial grades		
<p>1 work group (45%); presentation and discussion of the work (20%); 1 individual theoretical exercise (30%); personal evaluation (5%).</p>		