

<b>Course unit title:</b>	Geographical Information Systems (GIS)
<b>Course unit code:</b>	CSW451
<b>Type of course unit:</b> (Compulsory/optional)	Optional
<b>Level of course unit:</b> (First, second or third cycle)	Bachelor (1 <sup>st</sup> Cycle)
<b>Year of study:</b>	3 or 4
<b>Semester when the unit is delivered:</b>	5 or 6 or 7 or 8
<b>Number of ECTS credits allocated:</b>	6
<b>Name of lecturer(s):</b>	TBA
<b>Learning outcomes of the course unit:</b>	
<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> <li>• Recall the underlying concepts of GIS, their relevance for spatial analysis, the issues surrounding their implementation and their application</li> <li>• Recognize the importance of data quality and data management</li> <li>• Develop skills in analyzing spatial information, data mapping and digitization</li> <li>• Explain how GIS can be used to solve problems in the business domain</li> <li>• Use a GIS software to solve IS related problems</li> </ul>	
<b>Mode of delivery:</b>	Face-to-face
<b>Prerequisites and co-requisites:</b>	CSC331
<b>Recommended optional program components:</b>	None
<b>Course contents:</b>	
<p><b>Objective:</b> The objective of this module is to provide an introduction to basic concepts and practice of GIS and their relationship to basic methods of spatial analysis. Fundamental to this objective is to demonstrate how various spatial data can be represented and modelled in a GIS.</p>	
<p><b>Description:</b> This course provides an introduction to the basic principles of GIS and their application in modeling geographical assets. The course will emphasize on business applications of GIS.</p> <ul style="list-style-type: none"> <li>• Introduction to Geographic Information Systems Define the key elements of a GIS, elementary database management.</li> </ul>	

- Data management:  
Datums, Ellipsoids, Geoids, Coordinate Systems, and Map Projections
- Data in GIS  
Differentiate between raster data and vector data, explain the concept of layers, describe map types, describe common map symbols, data digitization.
- Data Quality  
Discuss how to maintain confidence in data. Explain how to manage error and data quality issues.
- Data Models and Databases  
Illustrate the components of database management in GIS.
- Spatial Analysis of Vector and Raster Data  
Interrogate and perform basic spatial analysis. Explain spatial distributions, spatial densities and spatial correlations.
- Statistics and Spatial Data Measurements  
Illustrate the process of statistical analysis of special data for decision making

<p><b>Recommended or required reading:</b></p>	<p>Jensen, J.R. and Jensen, R.R. <i>Introductory Geographic Information Systems</i>, Boston: Pearson, 2012</p> <p>Heywood, I. Cornelius, S. and Carver, S. <i>An Introduction to Geographical Information Systems</i>. Prentice Hall, 3rd edition, 2006</p> <p>Burrough, P. and McDonnell, R. <i>Principles of GIS</i>. Oxford: Oxford University Press, 1998</p>					
<p><b>Planned learning activities and teaching methods:</b></p>	<p>Class Instruction:</p> <p>Consultation:</p>	<table border="1"> <tr> <td data-bbox="1024 1486 1261 1541">42 Hours</td> </tr> <tr> <td data-bbox="1024 1541 1261 1596">15 Hours</td> </tr> </table>	42 Hours	15 Hours		
42 Hours						
15 Hours						
<p><b>Assessment methods and criteria:</b></p>	<p>Examinations</p> <p>Assignments / Class Participation</p> <p>Project</p>	<table border="1"> <tr> <td data-bbox="1024 1682 1261 1736">50%</td> </tr> <tr> <td data-bbox="1024 1736 1261 1791">10%</td> </tr> <tr> <td data-bbox="1024 1791 1261 1845">40%</td> </tr> <tr> <td data-bbox="1024 1845 1261 1900">100%</td> </tr> </table>	50%	10%	40%	100%
50%						
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<b>Language of instruction:</b>	English
<b>Work placement(s):</b>	No
<b>Place of Teaching:</b>	IT Laboratory European University Cyprus, Nicosia