

<b>Program</b>	<b>09TT- Engineering in Telecommunication Technologies and Services</b>
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<b>Course number and name</b>	
<b>Number</b>	95000242
<b>Name</b>	Spatial Data Infrastructures Infraestructuras de Datos Espaciales
<b>Semester</b>	Y2 - S4

<b>Credits and contact hours</b>	
<b>ECTS Credits</b>	4.5
<b>Contact hours</b>	45

<b>Coordinator's name</b>	Julián Robledo Candela
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<b>Specific course information</b>
<p><b>Description of course content</b></p> <p>A Spatial Data Infrastructure (SDI) is an integrated set of resources (catalogs, servers, programs, applications, web pages, ...) to allow access and manage data sets and geographic information system services (described by its metadata), available on computer networks and fulfills a standards (ISO 19100 family of standards) and specifications governing standard, ensuring interoperability of geographic information and facilitate the exchange of information. It is also necessary to establish a legal framework to ensure that the data produced by the institutions will be shared by all the administration in order to be used by the public.</p> <p>The implementation of an IDE project materializes through a geoportal that provides a view service, service location and gazetteer services.</p>
<p><b>List of topics to be covered</b></p> <p>Module 1 Introduction</p> <ul style="list-style-type: none"> <li>1.1 Fundamentals and definitions topic</li> <li>1.2 Free distribution applications and geospatial data sources</li> </ul> <p>Module 2 Geospatial Data</p> <ul style="list-style-type: none"> <li>2.1 Structures of geospatial data subject</li> <li>2.2 Working with geospatial data</li> </ul> <p>Module 3 Spatial data infrastructure.</p> <ul style="list-style-type: none"> <li>3.1 Definition and components of spatial data infrastructures</li> </ul> <p>Module 4 Web Visualization OGC</p> <ul style="list-style-type: none"> <li>4.1 Theory of visualization and service</li> <li>4.2 Web customers a service of display: light and heavy</li> </ul> <p>Module 5: project IDE issue</p> <ul style="list-style-type: none"> <li>5.1 Development of a visualization</li> </ul>
<p><b>Prerequisites or co-requisites</b></p> <p>There is no recommended previous subjects.                      Prior knowledge: geometry and mathematics studied in high school</p>

Course category in the program		
<input type="checkbox"/> R (required)	<input checked="" type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

Specific goals for the course
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<p><b>Specific outcomes of instruction</b></p> <p>RA1 - Understanding and application of basic concepts of geomatics and representations of geographic information</p> <p>RA2 - compression and knowledge of different systems of obtaining geospatial data used in geographic information systems (SIG) and implementation of the resulting data.</p> <p>RA3 - understanding of the services defined by the Open Gis Consortium (OGC) for the development of re of spatial data infrastructure (SDI).</p> <p>RA4 - capacity for the design and development of a spatial data infrastructure, comprising both theoretical and practical limitations.</p> <p>RA5 - Provide an overview of the client and the server side technologies in web programming.</p> <p><b>Student outcomes addressed by the course</b></p> <p>CG1- CG13, CECT1, CECT2, CECT3</p>
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Bibliography and supplemental materials
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<p>“Geographic Information Systems: Principles, Techniques, Management, and Applications”, P. A. Longley et alt, Ed. John Wiley and sons, 2005.</p> <p>“Principles of Geographic Information Systems”, P. A. Burrough et al(2005)</p> <p>“GIS for Everyone”, David E.David (2003)</p> <p>“Geospatial Data Infrastructure. Concepts, Cases and Good Practice”, R. Groot y J. MCLAughlin, Ed. Oxford University Press, 2000.</p> <p>“Spatial and modeling GIS”, David Maguire (2005)</p> <p>“Fundamentos de las Infraestructuras de Datos Espaciales”, Editores: Bernabé-Poveda, M.A., López-Vázquez, C.M., Ed. UPM-Press, Serie Científica. 2012.</p> <p>“A White Paper of Lidar Mapping”. Ambercore. LIDAR: (2008).  <a href="http://www.ambercore.com/files/TerrapointWhitePaper.pdf">http://www.ambercore.com/files/TerrapointWhitePaper.pdf</a>,</p> <p>“Sistemas de Información Geográfica”, J. Bosque Sendra, (1997).</p>
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Teaching methodology
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<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> problem solving sessions	<input checked="" type="checkbox"/> collaborative actions	<input type="checkbox"/> laboratory sessions
<b>Other:</b> Case study			