

NOVA Information Management School

NOVA IMS

Course	Location Based Services
Coordinator:	Pedro Cabral
ECTS	4
Carga horária	45
Objectives:	<p>This course has a practical and theoretical component.</p> <p>The practical component, which corresponds to the 1st half of the course, aims to provide the basic capabilities to develop applications with ArcGIS Runtime SDK for .NET.</p> <p>The theoretical component, which corresponds to the second half of the course, aims to explore the technical concepts related with LBS.</p> <p>In the end of the course, students should be able to:</p> <ul style="list-style-type: none"> • Develop a basic application with maps in .NET • Discuss critically the main concepts related with LBS.
Curricular Unit Contents:	<p>The practical component comprises 5 tutorials:</p> <ol style="list-style-type: none"> 1. Add a map to your app 2. Use ArcGIS basemaps 3. Access feature data in the cloud 4. Work with portal content 5. Add geocoding to your app 6. Get driving directions <p>The theoretical component has the following content:</p> <ol style="list-style-type: none"> 1. Positioning Technologies in Location-Based Services 2. Wireless Location Technology in Location-Based Services 3. Location in Wireless Local Area Networks 4. Radio Frequency Identification Positioning 5. Supporting Smart Mobile Navigation in a Smart Environment

	<p>6. Indoor Location Determination: Environmental Impacts, Algorithm Robustness, and Performance Evaluation</p> <p>7. Location-Aware Access Control: Scenarios, Modeling Approaches, and Selected Issues</p> <p>8. Location-Based Services and Privacy</p> <p>9. Protecting Privacy in Location-Based Applications</p> <p>10. Presence Services for the Support of Location-Based Applications</p> <p>11. Data-Flow Management for Location-Based Service Applications Using the Zoning Concept</p> <p>12. Assisted Global Navigation Satellite Systems: An Enabling Technology for High Demanding Location-Based Services</p>
Teaching methods:	<p>Practical classes with software.</p> <p>Theoretical classes related with LBS concepts.</p> <p>Teaching language is Portuguese. If there are non-portuguese speaking students and or professors, the course will be in English.</p>
Grading methods:	<p>1st phase:</p> <p>Participation in class and assiduity (5%),</p> <p>6 .NET applications per group (30%),</p> <p>Group case study presentation and forum (15%)</p> <p>Presentation of LBS topic (20%)</p> <p>Exam (30%).</p> <p>2nd phase:</p> <p>6 .NET applications (30%),</p> <p>Exam (70%).</p>
Bibliography:	<ul style="list-style-type: none"> • ArcGIS Runtime SDK for .NET, ESRI, disponível em https://developers.arcgis.com/net/ • Ahson S. and Ilyas, M., "Location-Based Services Handbook: Applications, techniques, and Security", CRC Press, 2011