

GIS Education @ University as seed of Projects to help local Government Management

The province of Tucumán, Argentina is located at the northwest of the country. Due to its small surface, less than 23.000 square kilometers, is the smallest province of the country.

Even though its size, years ago this province finished a full GIS solution carried out by the Dirección de Catastro (Cadastral Organism), accomplishing a project that covered every geometric square polygon in the province.

At the same time, local government is slowly introducing the GIS philosophy in other organisms with the idea to spread the advantage of this technology, especially since the Spatial Data Infrastructure directives that were issued from the National Geographic Institute to standardize GIS data across the country.

As a response to this new technology implemented by a government agency and in order to provide future professionals in this area, the Universidad Tecnológica Nacional (National Technological University at Tucumán) began introducing an elective GIS course in the upper level of Systems Engineering career four years ago. In parallel, the decision of Dirección de Catastro to partially share its spatial data was considered a milestone that enhanced the interaction with the university.

This decision was critical since up to date the main usage of cadastral information was to keep an updated database of building constructions based on spatial satellite images detection.

Up to date more than 100 students have been choosing this elective GIS course so far, and also a great number of them continued beyond the scope of it to plan their final projects based on GIS tools learned.

In an effort to fuel the GIS passion to an audience that never before has seen something beyond Google Earth's solution the International GIS Day began to be celebrated yearly at the Technological University with the support of the Systems Department.

Sponsored by ESRI (Environmental Science Research Institute), every November a GIS Day is organized by universities and high schools across the world in an effort to promote and allow the students to show their mates all what they can do with GIS in a great variety of fields, by showing poster and video sessions at the main hall. Private and public companies are also invited to participate.

The purpose of this poster session at GI_Forum 2012 is to show how the GIS course introduced for the first time became a seed of projects by using basic spatial data that helped local government to solve environmental problems.

In some cases students were allowed to get basic spatial data from Dirección de Catastro to shape their projects by implementing geoprocessing tools in order to get the solutions requested.

At the same time the number of students requesting data to organisms for shaping their projects began to increase.

One of the disciplines demanding more GIS analysis is the Environmental Secretary from the local government in order to enhance the auditing policy to control local and international companies.

A couple of projects to be outlined have to do with this topic:

- 1.- GIS survey maps of tree distribution on the main downtown of Tucumán capital, that was awarded by Planet Action with the donation of high resolution satellite images for measuring the urban tree index helping local authorities to get a better idea of how to administer the green index in the city.
- 2.- Trash Facility Relocation Impact Analysis using GIS Tools, that include the study of relocating the whole trash cells to a newer place to meet the increasing demand of processing the municipal solid waste management.

Some other projects to be briefly outlined in the poster will address several disciplines such as tourism (Tourism guide implementation by using Google Maps), science field (Solar radiation measurement using GIS tools), marketing (Geomarketing tools development for shopping location planning), telecommunications (Wimax implementation design using GIS tools) and geoprocessing tools development (Python scripting for automatized geoprocessing GIS).

All the projects developed had the local government as the main target by contributing to analyze the reality with a brand new tool that places a geographic point of view to lead the decision makers to take best action courses based in this paradigm.

Following the poster guidelines I would submit you the full version with graphics and images long before the deadline of June.
Thank you in advance.

Best regards,

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