REVIEW
for syllabus of "Geographic Information Systems"
by prof. Ing. Alica Kalašová, PhD.

The syllabus which developed by prof Alica Kalašová is well-created. This syllabus of lecture provides students with basic knowledge in the field of analytical use of geographic information systems. The lectures should acquaint students with GIS technologies, teach to use the most widely used GIS tools and prepare students for implementation of GIS tools in practice and in the management of private companies and state administration.

The main objectives of this lecture are following:

- Basic terminology and basic concepts in the field of GIS;
- Geographic environment modelling - the modelling of geographic environment;
- Geo-object modelling - basic approaches to modelling spatial objects;
- Raster layers, scatter surfaces, digital terrain models and their different representation;
- Geographic (GIS) databases - Different generations of GIS from the point of view of database systems;
- Input of geo-data, basic data restructuring - primary and secondary sources of geographic data, field surveys, etc;
- Analysis (in raster format) - analysis of geographic data as the main purpose of GIS, geodatabase queries, reclassification and map algebra, distance analysis, height analyses;
- Analysis (in vector format), image analysis - network analysis, traffic access zone to the service centres;
- GPS and GNSS - technical parameters, description of the principle, extended GPS (DGPS);

The general expectation regarding the knowledge to be provided is as follows:

- independent analytical work in the field of geographic data processing for the purpose of their cartographic visualization in both electronic and analogue form, with the ability to automate their work;
- solving more complicated geographic and cartographic problems in practice;
- work with geographic information systems to solve specific problems of application character;
- creation and use of digital and analogue topographic and thematic maps;
- creative use of the GIS, GNSS and other ICT techniques.

In view of the above, we would like to suggest the following:

1. The name of the master program is "ITS for Ground Transport, Logistics, and Automotive", therefore advisable to pay attention to the content "Network Analysis" and give more hours for this paragraph. We suggest it is not enough a paragraph, it should be a chapter. Because Network analyses is one of the main and useful tools of GIS when we use ITS in logistic. Network Analysis should include creation of Geodatabase Based Multimodal Network Dataset with proper attributes and explore the different feature classes which are used in the creation of Network Dataset.
2. In the exercise part it would be practic if to add following:
   - Exercise 1: Creating a network dataset
   - Exercise 2: Creating a multimodal network dataset
   - Exercise 3: Finding the best route using a network dataset
   - Exercise 4: Calculating service area and creating an OD cost matrix
   - Exercise 5: Creating a model for route analysis
   - Exercise 6: Servicing a set of orders with a fleet of vehicles

We advise to add the following books for syllabus:

Chang, Kang-Tsug. Introduction to Geographic Information Systems/Kang-tsug Chang – 4-th ed. 2008y., 450 p.

In general, this syllabus which is created by prof Alica Kalašová meets all the requirements for the master's courses and I recommend this syllabus for the implementation of the "ITS for Ground Transport, Logistics and Automotive" master course.

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