
EDUCATION ON PHOTOGRAMMETRY REMOTE SENSING AND GIS. EXPERIENCES, CRITICISM, REVISIONS.

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ABSTRACT

A revised scheme of the education subjects on Photogrammetry Photointerpetation Remote Sensing Geoinformation Systems in the Dept of Civil Engineers of Aristotle University of Thessaloniki is presented. This includes grouping and profound understanding of principles and methods as well as evaluation and introduction of new knowledge.

1 INTRODUCTION

The Lab. of Photogrammetry - Remote Sensing was established ten years ago in the Dept of Civil Engineers of Aristotle University of Thessaloniki.

For the time being, the following subjects are developed.

Graduate subjects: «Photogrammetry-GIS» and «Photointerpetation-Remote Sensing-Special subjects of Photogrammetry».

Post-graduate subjects for doctoral thesis: «Photogrammetry GIS Photointerpetation Remote Sensing».

Post-graduate subject for specialization on Environment Protection and Development: «Photogrammetric, Remote Sensing and GIS methods and systems for the acqistition, process and management of envrronment data».

Post-graduate subject for specialization on Protection Preservation and Restoration of Architectural Monuments: «Photogrammetry GIS and Photointerpetation Remote Sensing on the study of monuments and historical centers».

Previous papers of ours in Commission VI included, among others, the principles of organization and the structure of the Lab. of Photogrammetry - Remote Sensing.

However, on the base of our relevant experiences and the technological progress with corresponding advances at the scientific areas of Photogrammetry Photointerpetation Remote Sensing GIS, we face the necessity of critical considerations and gradual revisions.

The continously increasing volume-of knowledge and suitable considerations about the education procedure (subjects, presentation, exercises, laboratories etc.) must be taken in mind.

We present below a scheme of education subjects, which we gradually work out.

2 EDUCATION SUBJECTS

Object space, image space.
Mathematics, transformations.

Acquisition of data: photographic systems, photon sensors, thermal sensors, electron sensors.
Instrumentation for terrestrial, aeroplane and satellite «takings» and relevant subjects.
Stereoscopy.
Orientations: internal, external (relative, absolute).
Analogical, analytical, digital, rectification, orthophotography methods: principles, methods, correspondences, particularities, instrumentation, products, advances, trends.
Aerotriangulation. Methods. Cases of terrestrial takings, from aeroplane and satellite.
Global Positioning System.
Digital Elevation Models.
Electronics, automations.
Adjustment.
Software analysis.
Image interpretation, visual and digital analysis.
Thermography.
Remote sensing microwave systems.
Satellites-multispectral pattern recognition.
Geoinformation Systems.
System of specifications, realization of specifications and user.
Applications relatively to the directions of the Dept of Civil Engineers as geotechnical subjects, hazards, hydrology, environment, road construction, structures.

3 CONCLUSIONS

The principles for the scheme as well other general considerations can be summarized as following.

Grouping of subjects to reasonable and functional entities.
Presentation of principles and methods (correspondences, differences).
Presentation of selective examples from every category of instrumentation.
The volume of knowledge must not prevent from profound understanding of principles and methods.
Evaluation and introduction of new knowledge.
Overall aspects for Photogrammetry Remote Sensing and GIS.

All the above generally concern the education procedure of post-graduate subjects, too.

Finally, we note the importance and the role of the most suitable use of the framework «Photogrammetry-GIS and Photointerpretation-Remote Sensing» for man and environment.

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