RHODES SYMPOSIUM ON MODERN TRENDS OF EDUCATION IN PHOTOGRAMMETRY AND REMOTE SENSING

Photogrammetry and Remote Sensing in Civil Engineering

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ABSTRACT

The programs for developement (planning-application) of each country,among others,have the need,for their better success, for a better possible complete information.

Photogrammetry and Remote Sensing due to the richness of qualitative and metric information which they offer give also valuable services to this purpose.

The fields of activities of a Civil Engineer are of basic importance to the development of a country.

These activities are better realized with the contribution of the applications of Photogrammetry and Remote Sensing.

This work refers in principal to this general frame.

Especially it refers to our experiences from the recent start of the course of Photogrammetry and Remote Sensing-Geoinformation Systems to the Department of Civil Engineers of the Aristotle University of Thessaloniki.

Information are given concerning the teaching and researching activities and their general connection of the objectives of Photogrammetry and Remote Sensing with the objectives of Civil Engineer.

Results are expressed which are favourite and encouraging to the effort of the connection of Photogrammetry and Remote Sensing to the different Scientific and Technological Fields.

In this paper we will refer to our experiences related to the education, to the subjects of Photogrammetry and Remote Sensing which have been started to be taught recently (academic year 1986-87) to the Department of Civil Engineers of Aristotle University of Thessaloniki.

The Department of Civil Engineers has the following sectors: Structures, Hydraulics and Environment, Transportation works and organization, Geotechnical Engineering.

In the department the 6-month period system of teaching is applied. The lessons are taught as lessons of selection Photogrammetry 8th 6-month period, Remote Sensing 9th 6-month period. For the teaching, 3 hours weekly are offered for each subject. This time is increased significantly mainly for the elaboration of exercises in groups after agreement with the students.

Each lesson is attended by 80 students about. Theorytical and practice education is applied according to the following.

Photogrammetry
The following groups of subjects are taught:
Images with metric photographic camera, metric photographic camera and accessories, photographic image, study of the taking of airphotographs, basic mathematic relations, transformations in photogrammetric problems, relative and absolute orientation, analog photogrammetric instruments, test of instruments.

Aerotriangulations, rectification, orthophotography, terrestrial photogrammetry.

Application of photogrammetry in road study, Photogrammetric and Photointerpretation study of drainage, planning of photogrammetric projects, digital and automatic restitution systems, digital terrain models, study of monuments and historic centers.

Upon completion of the teaching of the first group of subjects the possibility of partian examining is given and in case of succesful results release from the final exams. Almost all students prefer this system, which furthermore offers steady knowledge for the smooth attendance and continuation of the teaching.

The practice education is being done on the basis of the existing equipment in groups.

It refers to the practice in stereoscopic viewing with stereoscopes (lens and mirror) and the familiarization working the analogic instruments.

Remote Sensing
In Remote Sensing the following groups of subjects are taught:

Landforms, analysis of tone-texture, fracture analysis, drainage analysis, slope analysis, soils analysis.

Sattelite takings (Landsat, Spot), multispectral scanning and spectral pattern recognition, aerial thermography, microwave sensing.

The practice education refers mainly in the exercising of students in groups to the photointerpretation work at large complex areas of Greece.

In both lessons of Photogrammetry and Remote Sensing the familiariazation of the students with the study of international Bibliography is tried.

General theorytical and practical objects, International Congress archives are sources from where the students select the subjects for their study in small groups and with permanent attendance.

The examination procedure consists of theorytical and practical examination.

The interest of students for the elaboration of dissertations refers mainly to the study of possibilities in applying of Photogrammetric and Remote Sensing methods in the content of the 4 sectors of the Department.

The selection, formation and elaboration of the subject is done with the cooperation with the students. More than 15 students elaborate dissertations. The subjects refer to the following objects mainly:
Long term attendance of urban areas
Environmental objects
Study of problems of monuments and historic centers
Study of transportation works

Doctoral thesis are also elaborated which refer to the following objects:
Photogrammetry and Remote Sensing to the study of geotechnical problems (landslides)
Photogrammetry and Remote Sensing in transportation works

These who work for doctoral thesis also participate to the educational and researching work.

As a general observation can be expressed that the students of Civil Engineers Department show a permanently increased interest for the attendance of the lessons of Photogrammetry and Remote Sensing.

This is because they can realize the use of relative knowledge in the subjects that interest the Civil Engineers.

We take seriously under consideration this aspect and we serve it on the basis of the following principles:

The better possible information without extremely theorytical analysis
Detailed presentation of the possibilities in applying Photogrammetry and Remote Sensing to the objects of all 4 branches of the Department

Practicing individual of in small groups
Information on Bibliography
Elaboration of dissertations on subjects of applications according to the specific interest of each student.

Generally it seems that the information of the students of the Civil Engineers Department to the subjects of Photogrammetry and Remote Sensing serve and will serve more in future to the organizing and materialization of the Development programs in our country.