



**NOTICE OF
UNIVERSITY ORAL**
GEODESY AND GEOMATICS ENGINEERING

Master of Science in Engineering

Jaime Garbanzo Leon

Monday, August 31, 2015 @ 11:00 am

Head Hall – Room E-11

Board of Examiners: Supervisor: Dr. Emmanuel Stefanakis, Geodesy & Geomatics Eng.

**Examining Board: Dr. Peter Dare, Geodesy & Geomatics Eng.
Dr. Vassilis Gikas, National Tech University, Greece**

Chair: Dr. Emmanuel Stefanakis, Geodesy & Geomatics Eng.

**A Geospatial Web Application (GEOWAPP) for Supporting Course Laboratory
Practices in Surveying Engineering**

ABSTRACT

Although most of the university courses are somehow supported by a Learning management system (e.g Desire2Learn), field practices in survey engineering are not interactively supported by these systems. Also, the internet is available in almost every place today, and there are a wide range of internet services on the web. By combining these advantages with e-learning, survey practicums can be enhanced with a web-based application. The survey practicums are very specialized with precise old fashioned techniques used for checking measurements in the field. Thus, the combination of E-learning and practicums is not straight forward. In order to achieve this combination, there is a need to define a framework of survey exercises and a way of effectively delivering the information to the student making the process more efficient. Different outlines of surveying courses were studied in order to provide a set of exercises that can be supported by a GEOWAPP (Geospatial Web Application). This thesis proposes a combination of processing tools, created in Python, JavaScript and PHP, and Google Maps. The main objectives is to enhance the experiences that students have in the field as well as evaluating their techniques for surveying. Accuracy was chosen as the pillar of this application, which helps to gather information about students technique and computations, and to locate students' mistakes easily. This specific application is intended for self-reviewing. A prototype of the application was developed, which contains five (5) operational tools. These tools were tested with artificial and real data; this testing gave a good insight of such an application requirements. User reviews were carried out showing that students embrace the idea of similar applications. Finally, GEOWAPP showed some learning enhancing characteristics. However, a test with a real course remains to be carried out to determine whether it is beneficial to students.

Faculty Members and Graduate Students are invited to attend this presentation.