NOTICE OF
UNIVERSITY ORAL
GEODESY AND GEOMATICS ENGINEERING

Master of Science in Engineering

James Mtamakaya

Wednesday, December 17, 2008
@ 10:00 am

Head Hall – E-11

Board of Examiners: **Co-Supervisors:**   **Dr. Marcelo Santos, Geodesy & Geomatics Eng**

Examining Board: **Dr. Peter Dare, Geodesy & Geomatics Eng**
Dr. Mike Ircha, Association of Canadian
 Port Authorities

Chair: **Dr. Sue Nichols, Geodesy & Geomatics Eng**

ESTABLISHMENT AND MAINTANANCE OF A NEW REAL TIME GEOSPATIAL FRAME -TZRF10 FOR TANZANIA

Abstract

Tanzania like most of the African countries has an old and conventional geodetic network. This network was established and computed by the Directorate of Overseas (DOS) Surveys of Great Britain back in 1950 based on the arc 30th meridian of the Clarke 1880 modified ellipsoid with its origin in Cape Town in the Republic of South Africa. The present network does not satisfy the overgrowing mapping requirements of the country as well as homogeneous cross border mapping activities with neighbouring countries.

For long Tanzania has been collaborating with other African countries to establish a unified African Geodetic Reference Frame (AFREF) in many ways. However, lack of appropriate expertise and proper awareness of the concept as well as the differences in economic levels amongst the African countries have always been the limiting factors.

In view of those limitations, the primary objective of this thesis is to provide the basis for the establishment and maintenance of a 3-dimensional dynamic reference frame for Tanzania in the ITRF system with optimum accuracy requirement in an economic way.

A conceptual plan to realize a new spatial framework in Tanzania (TZRF10) has been developed, using the least-squares covariance analysis technique as a tool to evaluate for its geometrical consistency.

A case study on reference frame maintenance has been developed and evaluated based on data from NRCan. The present advancement in communication technologies and increased capacity of internet–based real time geodetic applications has been illustrated through a case study and evaluated for its performance.

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