NOTICE OF UNIVERSITY ORAL

GEODESY AND GEOMATICS ENGINEERING

Master of Science in Engineering

Huaining Yang

Tuesday, March 1, 2005 @ 12:30 pm
Rm E-11, Head Hall

Board of Examiners:	**Supervisor:**	**Dr. Marcelo Santos, GGE**
	Examining Board:	**Dr. Peter Dare, GGE** **Dr. Daryl Tingley, Math & Statistics**
	Chair:	**Dr. Sue Nichols, GGE**

The Canadian Geoid in the Three-Space Scenario

ABSTRACT

The three space Stokes-Helmert scheme of the precise gravimetric geoid determination has been theoretically developed and numerically realized in UNB.

A transformation of observed values of terrestrial gravity in Real space, from No topography space into Helmert space on geoid surface, is accomplished by a series of gravity reductions and corrections. Helmert co-geoid can be decomposed into two parts: the low-frequency part, called reference co-geoid is determined from satellite data directly; the high-frequency part, called residual co-geoid is determined by the solution of geodetic boundary value problem using derived terrestrial gravity. The co-geoid is transformed to the geoid by correcting from the primary indirect effects.

The final Canadian geoid has been compared with GPS/Leveling data. Difference due to the long wavelength part of the differences is obvious and other systematic errors, such as the bias and vertical deflection between the geometric geoid model and gravimetric geoid model, definitely exist.

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