

**Are you dealing with errors in measurements, data processing, or statistical interpretation of the estimates? Then estimation theory is a must for you.**

***Here is your chance to learn advanced estimation techniques...***

**Enrol in “Advanced Estimation Theory” (GMAT9161) in S1 2010...**

***Aims of the course:***

To provide advanced-level theory and techniques for estimating the state of a non-linear dynamic system, e.g. static and kinematic positioning from GPS carrier-phase observables, precise orbit determination (POD) of artificial satellites, statistical signal processing, etc.

Estimation theory is a branch of statistics and applied mathematics that deals with time-varying measurements where uncertain noise is unavoidable due to the nature of data acquisition.

Estimation theory is essential in numerous areas including telecommunications, engineering mechanics (e.g. control theory for dynamic systems), network security, and satellite geodesy.

***Course topics:***

Introduction to the linearisation of the estimation process; the least squares solution; the minimum variance estimate; maximum likelihood and Bayesian estimation; the batch processor; the sequential estimation algorithm; the extended sequential estimation algorithm; state noise compensation algorithm; smoothing techniques; covariance analysis and the probability ellipsoid.

***About the lecturer:***

Dr Samsung Lim has been teaching Satellite Geodesy and Geographical Information Systems (GIS) for the past fifteen years. Samsung’s research interests include network-based reverse real-time kinematic (RTK) GPS positioning, 3D modelling/visualisation of LiDAR data, and knowledge-based generalisation of GIS features. In 2005, Samsung developed an address-based search tool in conjunction with the contemporary web-map services such as Google Earth. Samsung’s 3D model of the UNSW Kensington campus developed in 2006 is unique in that all buildings are textured and therefore the virtual reality is obvious. Samsung has published more than 120 journal and conference papers since 1995.

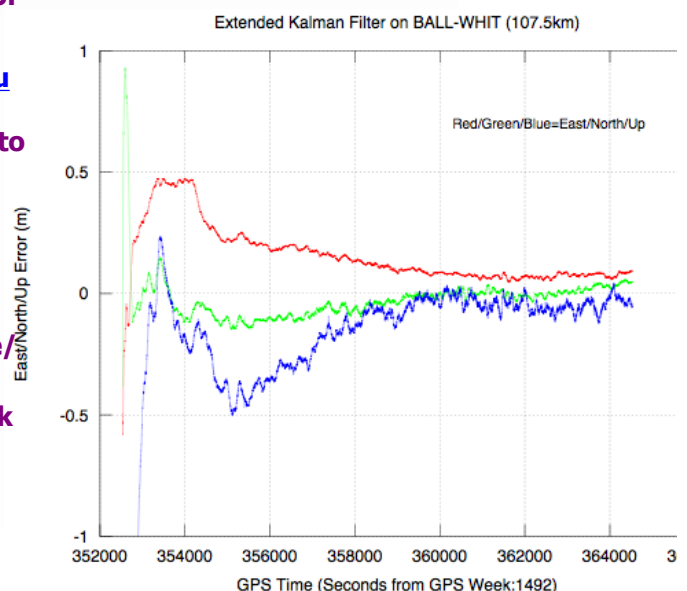
***More information:***

Contact Samsung Lim on email: [s.lim@unsw.edu.au](mailto:s.lim@unsw.edu.au) regarding any questions you may have. Assistance with enrolment will be provided, as well as access to last year’s course website.

Download the course description from: <http://www.gmat.unsw.edu.au/futurestudents/templates/9161outline.pdf>.

Consult UNSW handbook entry at: <http://www.handbook.unsw.edu.au/postgraduate/courses/2010/GMAT9161.html>.

This course is suitable for postgraduate coursework students from computer science & engineering, electrical engineering & telecommunications, environmental science & engineering, planning & geography, civil engineering & surveying.



School of Surveying & Spatial Information Systems  
Level 4 Electrical Engineering Building  
Telephone: 93854205 Email: [survsis@unsw.edu.au](mailto:survsis@unsw.edu.au)



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