



# Visitor Seminars Teaching

School of  
**Surveying**  
*Te Kura Kairūri*

**Location:** Room 113 (also known as L1), 1<sup>st</sup> Floor  
310 Castle Street

**Date:** Thursday, 18<sup>th</sup> September, 2014

**Joseph Wright**

1:00 pm – 2:00 pm

## The value of scripting in spatial science education

### Abstract:

Students of Surveying and Geographical Information Science develop a skillset in geospatial data collection and management, which integrates the science, engineering and policy domains that inform society's use of land and resources. A component of these skills is adding value to geospatial data by transforming it into information. Scripting in computer languages like Python, Matlab and Java is a vital skill for adding value to spatial data. Scripting enables spatial data practitioners to automate repetitive or multi-step processes, adapt existing scripts, employ rarely used computational techniques, investigate sensitivity to changing inputs, and create new, more efficient and better targeted tools. Proficiency in scripting also encourages greater understanding of digital data and helps to organise, clarify and improve information processes. This lecture introduces the core principles of the scripting language Python with examples from quantitative land surface analysis and geodetic projections.

**Chris Pearson**

2:00 pm – 3:00 pm

## Geodetic datums: An essential foundation for all geospatial and surveying professionals

### Abstract:

This lecture covers the types of geodetic datums that are important to New Zealand surveyors starting with global datums such as the International Terrestrial Reference Frame (ITRF), our national datum, NZGD2000 with a brief introduction to important national datums such as AUD and NAD83 for Australia and the US/Canada. The lecture starts with an introduction to datums and datum transformations. Next I discuss how semi-dynamic datums are able to produce stable coordinates in a dynamic world. I then present a detailed discussion of NZGD2000 starting with its relationship with the ITRF followed by the role of the National Deformation Model. The lecture closes with methods required to transform between NZGD2000 and other datums.