

**Course Objectives**

This course attempts to provide a foundation for application development using VBA. This course produces the skills to create typical GIS programming tasks.

**Course Outline**

**1. Introduction**

- o Introduction to GIS programming

**2. Fundamentals**

- o Fundamentals of geoprocessing
- o Fundamentals of Python using variables
- o Naming conventions and reserved words
- o Testing and printing variable values
- o Looping and control structures

**3. Debugging**

- o Debugging, optional and required parameters,
- o Objects, properties and methods

**4. Object Model Diagrams**

- o The geo-processor object
- o Functions and parameters
- o Passing and returning values
- o Multiple inputs and complex parameter passing
- o Selections and sets, SQL basics

**5. Writing results to disk, various formats and switches, other useful modules, presentations**

**Recommended Books**

1. Kropla, B. (2005) "MapServer: Open Source GIS Development", Apress, Co. ISBN: 1590594908
2. Bugg, K.E (2003) "GIS Programming: Prepare for the Gathering Storm", GEO.
3. Ralston, B. A. (2002) "Developing GIS Solutions with Map Objects and Visual Basic", Onword Press, New York. ISBN: 0766854388
4. Rigaux, P. Scholl, M. and Voisard, A. (2001) "Spatial Databases: With Application to GIS", Morgan Kaufmann; 2nd edition. ISBN: 1558605886.