**Advanced Risk Management (FIN 30270)**

**Tutorial 2: Spectral Risk Measures and Historical Simulation in Matlab**

**Required Preparation**

* Revise over the Spectral Risk Measures notes covered in Lecture 1 and the Excel example provided
* Work through the Excel example provided for the Historical Simulation approach in Lecture 6

**Material**

* Matlab script – “*Tutorial\_2\_SpectralRiskMeasures*”
* Matlab script – “*Tutorial\_2\_HistoricalSimulation\_VaR*”
* Excel file with sample data – “*VaR\_Data*”

**Objectives**

* This tutorial will walk present the code required to run the Spectral Risk Measures calculation in Matlab leveraging off the example covered in Lecture 2 and the accompanying Excel file
* The estimation approach to be used for the Historical Simulation approach will also be covered
* Students will be introduced to the concepts of ‘functions’ and ‘function handles’ in Matlab

**Tutorial Outline**

* The tutorial will begin by calculating Spectral Risk Measures for the example covered in Lecture 2
* The use of the trapezoidal rule will be outlined along with the specification of the exponential risk aversion function
* Following this the estimation of the Historical Simulation approach will be outlined
* This will include details regarding the weighting process to be used for interpolating the VaR in cases where no integer match for the specified confidence level has been obtained