1. **Lecturer:** A/Prof Shelton Peiris (Carslaw Room 819)

2. **Objectives:** Establish some advanced methods of modelling and analysing of time series data. A particular attention will be given to the theoretical development of various methods related to the advanced topics given in the course outline.

3. **Outcomes:** Following this course, students will be able to develop their analytical thinking on theoretical aspects of time series beyond the topics covered. This may provide a path for further research and/or higher studies for potential students.

4. **Course Outline:**

   (ii) An Introduction to Spectral Analysis of Time Series.
   (iii) Fractional Differencing and Long Memory Time Series Modelling.
   (vi) Time Series Modelling of Durations: Autoregressive Conditional Duration (ACD) and Stochastic Conditional Duration (SCD) Models.

5. **Assumed Knowledge:** Mathematical Statistics (Advanced knowledge at Intermediate and Senior Levels) including a course on Time Series Analysis or equivalent.

6. **Method of Teaching and Learning:** Lectures: 2 lectures (2 hours) a week
   - Monday 4.00pm (Carslaw 830)
   - Tuesday 12.00N (Carslaw 830)

   **Assessments:**
   - 2 Assignments - 14%
   - 1 Technical Report* - 11%
   - November Examination - 75%

   *Note: This report (about 6-8 pages, typed or neatly handwritten) must include the analysis of a real time series data set using standard time series techniques. The evidence of using a suitable computer package (eg. R, S+, SAS) is essential in your report. Students must clearly demonstrate their understanding of time series analysis through this report for full marks.

7. **Suggested Reading:**