A 3-Day Discrete Time Series Course

The Discrete Time Series Course is a university level course. The course is designed for digital signal processing engineers, control engineers and time series analysts as well as graduate students in these fields. Each attendee will receive presentation notes, the textbook *The ARIMA and VARIMA Time Series: Their Modelings, Analyses and Applications* and license to use the V-ARIMA Time Series toolbox. The course will cover the following topics.

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Day 1. Probability, Statistics and the Discrete Time Series.
       - Probability and Statistics.
            - The Moments and Cumulants.
       - The ARIMA Time Series.
            - The Moments of an ARIMA Time Series.
            - The Model of an ARIMA Time Series.
       - The Deterministic Time Series.
            - The Harmonic Time Series.
            - The Periodic Time Series.

Day 2. The Time, Frequency Statistics and Analyses.
       - The Time Statistics of an ARMA Time Series.
       - The Frequency Statistics of an ARMA Time Series.
            - The Autospectrum.
            - The Cross-spectra.
       - The Time Statistics of a VARMA Time Series.
       - The Frequency Statistics of a VARMA Time Series.

Day 3. Identification, Forecast and Applications.
       - Identification of an ARMA Time Series.
            - Identification of an AR Time Series.
            - Identification of an MA Time Series.
            - Identification of an ARMA Time Series.
       - Identification of a VARMA Time Series.
            - Identification of a VAR Time Series.
            - Identification of a VMA Time Series.
            - Identification of a VARMA Time Series.
       - Forecast.
            - Forecast of an ARMA Time Series.
            - Forecast of a VARMA Time Series.
       - Applications
            - Discrete Control Theory.
            - Digital Filter Design.
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