Report Guidelines

Classical Time Series Modelling (Unit 1)

1. Identify/model long-term trends (polynomial regression, smoothing, etc.)
2. Identify/model seasonal components (harmonic regression, differencing, etc.)
3. Determine whether residuals are uncorrelated over time, via the sample ACF

Linear Filters and ARMA(p,q) processes (Unit 2)

Identify ARMA behaviour in the residuals by examining their sample ACF, and/or using more quantified diagnostics such as AIC.

Linear Prediction and Forecasting (Unit 3)

1. Partition the data into training (past) and testing (future) intervals.
2. Evaluate the training model's forecasting abilities by comparing its prediction (and 95% CI) to the testing data.
3. Forecast some length of time into the future, using the full dataset, and plot.

Theory + Interpretation

1. Was the students model able to effectively capture the data's behaviour? If not, what were the main barriers? (non-stationarity, missing data, etc.)
2. Were the student's hypotheses supported by the model?
3. What scientific conclusions can be made about the data, given the final model?

What do you think?

Regarding subsets of the data

You can use any portion of your chosen dataset, as long as the portion in question is at least $N \approx 50$ observations long.

Formatting!

1. It must be a rendered Quarto document (PDF not HTML)
2. Plotting Ettiquette
3. Latex! alpha = 0.05

$$X_t = m_t + s_t + Y_t$$

The MA(1) parameter is $\theta = 0.17$. This was found using… #### Teamwork Strategy Give it to me again! It may not match your originally proposed plan.

2-player mode

Both series (X_t, Y_t) must be modelled according to methods from Units 1,2 and 3, if relevant.