TS Module 14 Model diagnostics

(The attached PDF file has better formatting.)

- Residual analysis
- q-q plots

Read Section 8.1, “Residual analysis,” on pages 174-179. Know equation 8.1.3 on page 175.

We test if residuals lie within a 95% confidence interval by plotting standardized residuals (residuals divided by their standard deviation). See Exhibit 8.1 on page 176, Exhibit 8.2 on page 177, and Exhibit 8.3 on page 178.

We test if the residuals are normally distributed with q-q plots. See Exhibits 8.4 and 8.5 on page 179 and Exhibit 8.6 on page 180.

Standardized residuals and q-q plots are covered in the regression analysis course. You use these techniques in the student project.

The final exam does not test standardized residuals. But it may give a q-q plot (quantile comparison plot) and ask what it means. The homework assignment shows the types of q-q plots that may be tested.

Read pages 180-185. Know the Box-Ljung test (and the simpler Box-Pierce Q statistic) on pages 183-184. You use this test to determine if your time series is correctly specified.

Know equations 8.1.5 and 8.1.6 on page 180 and 8.1.8, 8.1.9, and 8.1.10 on page 182.