

Stat5504 Course outline

Instructor: Mohamedou Ould-Haye

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Place: SA314.

Time: 11:30am-1pm, TR

Office hours: 11am-12pm (W) and 1-2pm (Th.)

Textbook: Time series analysis and its applications, with R examples. 3rd edition by Robert H. Shumway and David S. Stoffer.

Grading: 3 assignments (1/3), test(1/3) and final project (1/3).

Course tentative timetable:

Week	Sections	Details
1-3	1.1-1.6 and appendix A	Time series models, measuring dependence, stationarity, parameter estimation, large sample distributions
4 Assignment 1 due Oct. 18	2.1-2.4	Regression in time series context, smoothing, trend, differencing
5-7 Assignment 2 due Nov. 8.	3.1-3.9	Modeling and forecasting with autoregressive, moving average models (ARIMA), autocorrelation and partial autocorrelation functions (ACF, PACF), seasonal ARIMA,
8-10 Midterm test Nov. 15 (Covering Ch. 1-4)	4.1-4.8	Spectral analysis, filtering, spectral density, periodogram, parametric and nonparametric estimation methods, linear filters, transfer function models (input and output series), cross spectrum
11-12 Assignment 3 due Nov. 29.	5.1-5.6	Additional time domain models: long memory models, GARCH models, threshold models, unit-root test for stationarity, regression with autocorrelated errors.

Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the **Student Guide** at <http://www2.carleton.ca/equity//ccms/wp-content/ccms-files/Student-Guide-card-09.pdf>

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the **Student Guide** above.

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the **PMC website** at <http://www1.carleton.ca/pmc/> for the deadline to request accommodations for the formally-scheduled exam (if applicable).