# SYLLABUS

## 1. Preliminaries

Bayesian inference
MCMC
MacKay (2003)
Gelman, Carlin, Stern, Dunson, Vehtari, and Rubin (2014)

## 2. Filters

Kalman
Discrete Markov
Particle
Kantas, Doucet, Singh, Maciejowski, and Chopin (2915)
Doucet and Johansen (2008)
Shephard (2013)

## 3. VAR's, SVAR's, and DSGE's

Priors for SVAR's from structural models
Del Negro, Schorfheide, Smets, and Wouters (2007)
Del Negro and Schorfheide (2004)

## 4. Dynamic Factor Models

## 5. Bayesian inference for continuous time models

Stochastic differential equations
Karatzas and Shreve (1988), Chapter 5. However, this is at a high mathematical level and this chapter is not independent of the previous ones.
Inference for diffusion processes
Eraker (2001),Johannes and Polson (2006)

## References

Del Negro, M., and F. Schorfheide (2004): "Priors from General Equilibrium Models for VARs," *International Economic Review*, 45, 643–673.

Del Negro, M., F. Schorfheide, F. Smets, and R. Wouters (2007): "On the Fit and Forecasting Performance of New Keynesian Models," *Journal of Business and Economic Statistics*, 25(2), 123–162.

Doucet, A., and A. N. Johansen (2008): "A Tutorial on Particle Filtering and Smoothing: Fifteen years later," Discussion paper, Oxford University, http://www.stats.ox.ac.uk/~doucet/doucet_johansen_tutorialPF2011.pdf.

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GELMAN, A., J. B. CARLIN, H. S. STERN, D. B. DUNSON, A. VEHTARI, AND D. B. RUBIN (2014): *Bayesian Data Analysis*. CRC Press.

JOHANNES, M., AND N. POLSON (2006): "MCMC Methods for Continuous-Time Financial Econometrics," in *Handbook of Financial Econometrics*, ed. by Y. Ait-Sahalia, and L. P. Hansen. http://www0.gsb.columbia.edu/faculty/mjohannes/PDFpapers/JP_2006.pdf.

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SHEPHARD, N. (2013): "Martingale unobserved component models," Discussion paper, Oxford University, `http://www.people.fas.harvard.edu/~shephard/ll20130210.pdf`.