

***Bayesian Macroeconometrics***  
Summer Semester 2019  
Prof. Dr. Alexander Meyer-Gohde  
Chair of Financial Markets and Macroeconomics

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<b>Lecture:</b>	Fridays 12:15-1:45 p.m. Seminarhaus SH 5.107
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11. April 2019

**Faculty of Economics and  
Institute for Monetary and Financial  
Stability**

**Chair of Financial Markets and  
Macroeconomics**

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**Course Grade:** The grade will be based on a final exam.

**Course Description:** This course will introduce students to the foundations of Bayesian estimation in the context of macroeconomics. A rigorous treatment of the principles of Bayesian estimation and contrast with frequentist techniques will form the foundations to application to reduced-form and structural models of the macroeconomy. Topics such as linear regression, VAR, and DSGE models will be examined through the Bayesian perspective.

**Textbooks:**

*Introduction to Bayesian Econometrics*  
2nd Edition, Cambridge University Press, 2012  
By Edward Greenberg

*Bayesian Econometric Methods*  
Cambridge University Press, 2007  
By Gary Koop, Dale J. Poirier, and Justin L. Tobias

*Bayesian Estimation of DSGE Models*  
Princeton University Press, 2016  
By Edward P. Herbst and Frank Schorfheide

*Methods for Applied Macroeconomic Research*  
Princeton University Press, 2007  
By Fabio Canova

**Course Outline**

*Part I: Bayesian Inference*

1. Introduction to Bayesian inference
2. Linear regression
3. Priors and likelihood

*Part II: Bayesian VARs*

4. Vector Autoregressions (VARs)
5. Bayesian Vectorautoregressions (BVARs)
6. Structural Vectorautoregressions (SVARs)
7. Further Topics (Potentially Sign-Restrictions, Regime-Switching, Stochastic Volatility, Time-Varying VARs)

*Part III: Bayesian Analysis of DSGE Models*

8. Dynamic Stochastic General Equilibrium (DSGE)
9. Bayesian Estimation of DSGEs
10. Bayesian Analysis of DSGEs

LGB-1: Students will understand, estimate, and apply state-of-the-art structural and reduced-form macroeconomic models.

LGB-2: Students will master the numerical techniques of state-of-the-art Bayesian estimation.

LGB-3: Students will be able to apply the techniques and their understanding of the course's models in their further studies and use them to inform their understanding and discussion of the macroeconomy.

LGB-5: Students will be able to use and apply the numerical analysis programs Matlab and Dynare

LGB-7: Students will be able to express, explain and analyze state-of-the-art models formally, verbally and graphically.