Georg-August-Universität Göttingen **Module M.WIWI-QMW.0012: Multivariate Time Series Analysis**	6 C 4 WLH

Learning outcome, core skills: The students - learn concepts and techniques related to the analysis of multivariate time series and the forecasting thereof. - learn to characterize the dynamic interrelationship between the variables of dynamic systems - learn to relate economic models with restrictions implied by its empirical counterpart - learn how to analyse multivariate time series using by means of statistical software packages and to interpret the results obtained.	**Workload:** Attendance time: 56 h Self-study time: 124 h

Courses:	
1. Multivariate Time Series Analysis (Lecture) *Contents*: Vector Autoregressive and Vector Moving Average representations Model selection and estimation, Unit roots in vector processes, Vector autoregressive vs. vector error correction modeling, structural vectorautoregressions, Impulse response analysis, forecasting, forecast error variance decomposition	2 WLH
2. Multivariate Time Series Analysis (Tutorial)	2 WLH

Examination: Written examination (90 minutes) **Examination requirements:** The students show their ability to analyse systems of time series using specific statistical techniques, can derive and interpret properties of stochastic models for time series, and can decide on appropriate models for given data. The students are able to implement time series analyses using statistical software and to interpret the corresponding results. The exam covers contents of both the lecture and the exercises.	6 C

Admission requirements: none	**Recommended previous knowledge:** Modul "Statistik", Modul "Econometrics I", Modul "Introduction to Time Series Analysis"
Language: English	**Person responsible for module:** Prof. Dr. Helmut Herwartz
Course frequency: every second semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: twice	**Recommended semester:** 3 - 4