**Econ 530a. Mathematical Economics I**

**Day / time:** Wednesday, 4:00-7:00  
**Course Type:** Graduate  
**Course term:** Fall  
**Year:** 2017  
**Instructor(s):** John Geanakoplos  
**Location:** Rm. 108

This course gives a careful mathematical description of the general equilibrium underpinnings of the main models of finance and the new macroeconomics of collateral and default. Part I is a review of Walrasian general equilibrium, including the mathematical techniques of fixed points and genericity, both taught from an elementary point of view. Part II covers general equilibrium with incomplete markets (GEI). Part III focuses on the special case of the capital asset pricing model (CAPM), including extensions to multi-commodity CAPM and multifactor CAPM. Part IV focuses on the Modigliani Miller theorem and generic constrained inefficiency. Part V describes collateral equilibrium and the leverage cycle. Part VI covers default and punishment and adverse selection and moral hazard in general equilibrium. Part VII describes monetary equilibrium. This course will continue into the spring semester, where it will be taught jointly with Ana Fostel, visiting professor from the University of Virginia and Yale Ph.D.

**Semester offered:** Fall

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