MASTER in ECONOMICS
Academic year 2009/2010
Program

I QUARTER- PRELIMINARY COURSES
(September 21 – October 30, 2009)

MATH (0 credits):


COMPUTING 1 (3 credits):


**II QUARTER - CORE COURSES**
(November 9 – December 18, 2009)

**TIME SERIES AND ECONOMETRICS 1 (6 credits):**


**Static Regression:** Introduction and review. The classical linear model and the OLS estimator. Sampling properties of OLS. GLS and feasible GLS. Diagnostic procedures. Hypothesis testing and model selection.

**MICROECONOMICS 1 (6 credits):**


**Games and Imperfect Markets:** Monopoly, price discrimination. Market structure and imperfect competition, collusion. Dynamic games of perfect and imperfect information.

**MACROECONOMICS 1 (6 credits):**

**Introduction to contemporary Macroeconomics:** The dynamics of aggregate supply and demand. Rational expectations and the Lucas Critique. Solving rational expectations models. The central bank and monetary policy rules. Microfoundations of incomplete nominal adjustment.

**Consumption and Investment:** Stochastic implications of the Permanent Income Hypothesis. The overlapping generations model with money. Fixed Capital Investment. Inventory investment. Credit Rationing.

**III QUARTER - CORE COURSES**
(February 15 – March 26, 2010)

**TIME SERIES AND ECONOMETRICS 2:**


**IV and GMM (3 credits):** The method of moments. The instrumental variable (IV) method. Sampling properties of IV estimators. Hypothesis testing. Testing the validity of IV assumptions. Applications of the IV method to economics and finance. GMM estimation and testing. Applications of GMM to economics and finance.

MACROECONOMICS 2:


Empirics in Growth Theory (2 credits): The course aims to provide a discussion about some important questions related to the empirical investigation of some economic growth theories. Convergence versus multiple equilibria models. Model uncertainty. Production functions and unobserved heterogeneity. Empirical methods.


MICROECONOMICS 2:


FINANCE:


Financial Regulation (3 credits): Financial markets and financial systems around the world: Institutions and markets; Arm’s length transaction markets: security markets; Relationship markets: banking markets; Trend in financial development: Market participation via intermediaries (“re-intermediation”); Integration of markets. What a well functioning financial system attains: Channelling of resources from surplus units to deficit units; Risk sharing; Liquidity provision; Information aggregation and optimal resource allocation. What are the impediments: Agency/informational problems between trading
partners; The anatomy of the borrower-lender relationship: moral hazard (hidden action), adverse selection (ex-ante informational asymmetry), contract enforceability; Optimal constrained solution: optimal form of contract and constrained efficiency; The scope for financial intermediaries: delegated monitoring. The key role of the legal infrastructure. Relationship markets: Financial intermediaries: the potential for double moral hazard: Theoretical issues and implications for regulation; The many facets of intermediary’s “moral hazard”; Evidence around the world; Regulatory failures, Systemic failures. Arm’s length transaction markets: Security Markets: Their role in resource allocation; Their functioning when agents are differently informed and behave strategically: Informed/insider trading, market manipulation. The insider trading regulation and disclosure requirements: Its economic rationale and the state of arts in Europe. Theory on Corporate Governance. Some empirical evidence on the characteristics of the corporate governance systems. What discipline for corporate governance.

Financial Market Theory (3 credits): Portfolio Selection Models. Asset Pricing. (To be updated.)


MATHEMATICAL STATISTICS:

Asymptotic Theory (3 credits): The course focuses on some basic techniques widely used in studying the large-sample properties of estimators and test-statistics. Basic probabilistic tools: Modes of convergence and relationships among them; the law of large numbers and the central limit theorem. Asymptotic theory - the parametric case: the delta-method; asymptotic theory for M-estimators. Asymptotic theory - the nonparametric case: The projection technique (basic elements), U-statistics: definition and asymptotics; Differentiable statistical functionals (introductory aspects).

Markov Chains (3 credits): Introduction to stochastic processes. The Markov assumption, its scope and consequences. Markov chains: definitions and computations; classification of states; invariant distributions; the Metropolis algorithm and optimization; passage problems.

COMPUTING 2 (3 credits):


IV QUARTER - CORE COURSES PROGRAMS
(April 6 – May 14, 2010)

MACROECONOMETRICS:


MICROECONOMETRICS:

**Categorical Data Models (3 credits):** Logit and probit models. Ordered logit and probit. Multinomial logit and probit. Generalized linear models.

**Nonparametrics Density (3 credits):** Density estimation: Empirical densities; The kernel method; Statistical properties of the kernel method; Other methods for density estimation; Multivariate density estimation. Distribution function (df) and quantile function (qf) estimators: The empirical df; The empirical qf; Estimating the conditional qf; Estimating the conditional df; Relationships between the two approaches; Generalizations. Linear nonparametric regression estimators: Regression splines. The kernel method. The nearest neighbor method. Cubic smoothing splines. Local polynomial regression. Statistical properties of linear smoothers. Methods for high dimensional data

**Panel Data (3 credits):** Examples of panel data. Static linear models: notation and basic models, least squares estimation, hypothesis testing, minimum distance estimation, repeated cross-sections, open issues. Dynamic linear models: The basic models, a general framework for IV estimation, open issues. Nonlinear models: Parametric models for binary responses, parametric count-data models, GLM for cross-section and panel data, semiparametric estimation, Tobit models, open issues.

PUBLIC ECONOMICS:


**Environmental and Natural Resources (2 credits):** “Sustainable Development” and Optimal Natural Resource Use: Economic Growth and the Environment; The Economics of Renewable Resources; The Economics of Non Renewable Resources. Valuing the Environment. Game Theory and the Environment. Environmental Regulation and Policy: Command and Control Instruments; Taxes and Emission Permits. (To be updated)

INDUSTRIAL ECONOMICS:

**Economics of Regulation (3 credits):** Limits to competition: cost concepts and market structure. Socially optimal behaviour under perfect information. Regulation and asymmetry of information. Non bayesian regulatory mechanisms: price cap and rate of return regulation. Bayesian regulatory mechanisms. Access price regulation. (To be updated)