Kevin's Notes 2024-2025

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https://kevinli03.github.io

Introductory Courses

GV4L8 Introductory Maths

GV4L8 Introductory Maths for Political Science

Lecturer: Dr. Marta Antonetti

Assessment: None (Pre-Sessional)

Course Content (Lectures, Readings, and Problems):

1. Sets, Expressions, Functions
2. Vectors, Matrices, Continuity, Limits
3. Derivatives, Optimisation, Integrals
4. Counting, Probability, Random Variables

Autumn Term

GV481 Quantitative Analysis

GV481 Quantitative Analysis for Political Science

Lecturer: Dr. Aliz Toth

Formative Assessment: Problem Set 1 (AT W7), Problem Set 2 (AT W9)

Summative Assessment: Coursework (50%, 10 Jan), Exam (50%, Spring)

Course Content (Lectures, Readings, and Problems):

1. Quantitative Thinking and Correlations
2. Bivariate and Multivariate OLS | Problem Set 1
3. Uncertainty and Hypothesis Testing
4. Introduction to Causal Inference
5. Randomised Controlled Trials

7. Selection on Observables
8. Instrumental Variables
9. Regression Discontinuity
10. Differences-in-Differences
11. Survey Experiements

Resources:

- Interpreting Regressions Guide

GV4C8 Game Theory

GV4C8 Game Theory for Political Science

Lecturer: Professor Rafael Hortala-Vallve

Formative Assessment: Weekly Problem Sets, Week 11 Mock Exam

Summative Assessment: Problem Set 1 (25%, AT W7), Problem Set 2 (25%, AT W11) Exam (50%, Spring)

Course Content (Lectures, Readings, Problems):

1. Political Economy, Game Theory, Aggregation of Preferences
2. Nash Equilibrium, Static Games of Complete Information | Problem Set Week 2
3. Downsian Models of Electoral Competition | Problem Set Week 3
4. Redistributive Politics, Mixed Strategies, Valence Politics | Problem Set Week 4
5. Dynamic Games of Complete Information, Legislative Bargaining | Problem Set Week 5

7. Elections as Incentive Devices, Counter-terrorism, Repeated Games
8. Imperfect and Incomplete Information, Bayesian Nash Equilibrium
9. Perfect Bayesian Equilibrium
10. Signalling and Elections as Accountability Mechanism

MY452A Regression Analysis

MY452A Applied Regression Analysis

Lecturer: Prof. Jouni Kuha

Summative Assessment: Exam (100%, Spring)

Course Content (Lectures, Readings, and Problems):

0. Statistical Inference Review
1. Introduction to Regression Modelling
2. Linear Regression I: Basic Elements
3. Linear Regression II: Different Types of Explanatory Variables
4. Linear Regression III: Model Selection and Research Design
5. Linear Regression IV: Models for Longitudinal and Clustered Data
7. Binary Logistic Regression I: Definition and Interpretation
8. Binary Logistic Regression II: Estimation and Inference
9. Models for Polytomous Responses
10. Models for Counts
11. Further Topics

MY470 Computer Programming

MY470 Computer Programming (Autumn Term)

Lecturer: Dr. Milena Tsvetkova

Summative Assessment: N/A (Auditing)

Course Content (Lectures, Readings, and Problems):

1. What is Computation
2. Data Types in Python
3. Control Flow
4. Functions
5. Classes
6. Testing and Debugging
7. R Programming Language
8. Algorithms and Order of Growth
9. Searching and Sorting Algorithms
10. Tree and Graph Algorithms

Winter Term

GV482 Current Issues

GV482 Political Science and Political Economy: Current Issues

Lecturer: Prof. Stephane Wolton

Assessment: Coursework (50%, WT), Online Assessment (50%, Spring)

1. States vs. Markets (From IR470 W1)

MY457 Causal Inference

MY457 Causal Inference for Observational and Experimental Studies

Lecturer: Dr. Daniel De Kadt

Assessment: Take-Home Assessment (100%, Spring)

MY455 Multivariate Analysis

MY455 Multivariate Analysis and Measurement

Lecturer: Prof. Jouni Kuha

Assessment: Exam (100%, Spring)

ST304 Time Series

ST304 Time Series and Forecasting (Winter Term)

Lecturer

Short Guides