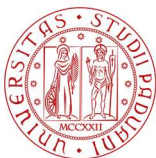


Denominazione	Macroeconomia II
Docente	Efrem Castelnuevo e Giovanni Pellegrino
Ore	30
CFU	6
Periodo di svolgimento	Gennaio-Febbraio 2025
Modalità di erogazione	☒ In presenza ☐ A distanza ☐ Duale
Lingua di erogazione	Inglese
Obbligo presenza	☐ Sì (% minima di presenza) ☒ No
Contenuti del corso	Gli strumenti principali studiati in questo corso sono il modello <i>Vector AutoRegressive</i> (VAR), ampiamente utilizzato per condurre analisi macroeconomiche sin dal contributo fondamentale di Sims (1980), l'analisi delle <i>Local Projections</i> proposta originariamente da Jordà (2005), e i modelli DSGE resi popolari da Christiano, Eichenbaum ed Evans (2005) e Smets e Wouters (2007). Gli studenti verranno introdotti a una varietà di strategie di identificazione per elaborare i dati e identificare gli effetti del ciclo economico derivanti dai più rilevanti shock macroeconomici, nonché a tecniche che permettono a un ricercatore di applicare un modello DSGE ai dati. Al termine del corso, gli studenti saranno in grado di: i) leggere articoli scientifici all'avanguardia basati su VAR strutturali (SVAR), <i>Local Projections</i> (LP) e modelli DSGE; ii) produrre ricerche scientifiche utilizzando questi approcci. 1. Dai modelli DSGE ai modelli VAR 2. SVAR: Restrizioni con zeri. 3. Modelli DSGE: Stima a informazione limitata mediante il matching dei risultati da modelli SVAR 4. Modelli SVAR e DSGE: Shock di incertezza e non linearità in macroeconomia (un'introduzione) 5. SVAR: Restrizioni tradizionali sui segni e recenti affinamenti 6. Proxy-SVAR 7. Simulazioni controfattuali con VAR 8. <i>Local Projections</i> 9. Modelli DSGE: <i>Metropolis-Hastings</i> (tempo permettendo)
Obiettivi di apprendimento	L'obiettivo di questo corso è imparare a stimare modelli autoregressivi multivariati (VAR) per l'analisi del ciclo economico, identificare i fattori determinanti del ciclo economico, stimare i meccanismi di trasmissione degli impulsi strutturali e valutarne la rilevanza.
Metodologie didattiche	Lezioni frontali del docente e presentazioni di gruppo degli studenti
Corso su competenze	☐ Sì ☒ No



trasversali,
interdisciplinari,
transdisciplinari

Possibile
partecipazione di
dottorandi di altri
corsi

☒ Sì
☐ No

Prerequisiti
(non obbligatorio)

max 3750 caratteri

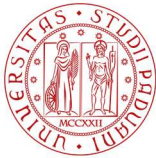
Modalità d'esame
(se previsto)

Valutazione finale:

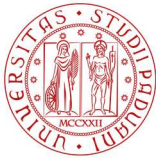
- Presentazioni degli studenti di articoli all'avanguardia: 20% del voto finale. Queste presentazioni della durata di 45 minuti saranno presentazioni di gruppo, con domande dal pubblico (Efrem, Giovanni e gli studenti non relatori). Gli articoli che dovrete leggere e presentare saranno comunicati in aula.
- Progetto finale: 80% del voto finale. Il progetto finale deve essere un pezzo originale di ricerca con una breve motivazione, una descrizione dei dati e dell'approccio econometrico, una documentazione del risultato principale con commenti (una figura/tavola potrebbe essere sufficiente) e una breve sezione conclusiva. In altre parole, ci si aspetta che questo progetto sia un breve articolo di tipo scientifico. Il progetto finale deve essere un progetto individuale (anche se è consentita la collaborazione tra studenti). La scadenza (ferma!) per il progetto è il 31 marzo 2026.

Materiale studio

- Angeletos, G., F. Collard, and H. Dellas (2020): "Business Cycle Anatomy," *American Economic Review*, 110(10), 3030–3070.
 - Antolín-Díaz, J., and J. F. Rubio-Ramírez (2018): "Narrative Sign Restrictions," *American Economic Review*, 108(10), 2802–2829.
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 - Boivin, J., and M. Giannoni (2006): "Has Monetary Policy Become More Effective?," *Review of Economics and Statistics*, 88(3), 445–462.
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 - Canova, F., and G. de Nicoló (2002): "Monetary Disturbances Matter for Business Fluctuations in the G-7," *Journal of Monetary Economics*, 49, 1131–1159.
 - Canova, F., and M. Paustian (2011): "Business cycle measurement with some theory," *Journal of Monetary Economics*, 58, 345–361.
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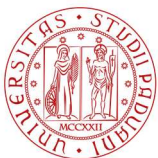
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- Canova, F., and L. Sala (2009): "Back to Square One: Identification Issues in DSGE Models," *Journal of Monetary Economics*, 56(4), 431–449.
 - Castelnuovo, E., and P. Surico (2010): "Monetary Policy Shifts, Inflation Expectations and the Price Puzzle," *Economic Journal*, 120(549), 1262–1283.
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 - Christiano, L., R. Motto, and M. Rostagno (2014): "Risk Shocks," *American Economic Review*, 104(1), 27–65.
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 - Jordà, O., and A. M. Taylor (2023): "Local Projections," *Journal of Economic Literature*, forthcoming.
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 - Kilian, L., and H. Lütkepohl (2017): "Structural Vector Autoregressive Analysis," Cambridge University Press, Cambridge.
 - Kilian, L., and D. Murphy (2012): "Why Agnostic Sign Restrictions Are Not Enough: Understanding the Dynamics of Oil Market VAR Models," *Journal of the European Economic Association*, 10(5), 1166–1188.
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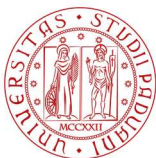
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- Ludvigson, S. C., S. Ma, and S. Ng (2021): "Uncertainty and Business Cycles: Exogenous Impulse or Endogenous Response?," *American Economic Journal: Macroeconomics*, 13(4), 369–410.
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 - Ramey, V. A. (2011): "Can Government Purchases Stimulate the Economy?," *Journal of Economic Literature*, 49(3), 673–685.
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 - Ramey, V., and S. Zubairy (2015): "Government Spending Multipliers in Good Times and in Bad: Evidence from U.S. Historical Data," *Journal of Political Economy*, 126(2), 850–901.
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 - Schmitt-Grohé, S., and M. Uribe (2018): "How Important are Fiscal Multipliers?," *Journal of Economic Perspectives*, 32(3), 163–184.
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 - Stock, J. H., and M. W. Watson (2001): "Vector Autoregressions," *Journal of Economic Perspectives*, 15(4), 101–115.
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- Uhlig, H. (2005): "What are the Effects of Monetary Policy on Output? Results from an Agnostic Identification Procedure," *Journal of Monetary Economics*, 52(2), 381–419.
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 - Waggoner, D. F., and T. Zha (2012): "Contractionary Monetary Policy and the Unemployment Rate," *Journal of Economic Dynamics and Control*, 36(1), 1–12.
 - Waggoner, D. F., and T. Zha (2019): "Inference in VAR Models with Data-Driven Sign Restrictions," *Journal of Business & Economic Statistics*, 37(2), 301–312.
 - Waggoner, D. F., and T. Zha (2020): "Identifying Monetary Policy Shocks: A New Approach," *American Economic Journal: Macroeconomics*, 12(2), 206–236.
 - Zhang, Y. (2019): "The Macroeconomic Effects of Government Spending: Evidence from the U.S. States," *Journal of Economic Dynamics and Control*, 105, 100–121.



Course unit English denomination	Macroeconomics II
Teacher in charge	Efrem Castelnovo and Giovanni Pellegrino
Teaching Hours	30
Number of ECTS credits allocated	6
Course period	January-February 2025
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	English
Mandatory attendance	☐ Yes (% minimum of presence) ☒ No
Course unit contents	The main tools studied in this course are the Vector AutoRegressive (VAR) model, which has been heavily employed to conduct macroeconomic analysis since (at least) the seminal contribution by Sims (1980), the local projections analysis originally proposed by Jordà (2005), and the DSGE frameworks popularized by Christiano, Eichenbaum, and Evans (2005) and Smets and Wouters (2007). Students will be introduced to a variety of different identification strategies to process the data and identify the business cycle effects of the most relevant macroeconomic shocks, as well as to techniques that enable a researcher to take a dynamic stochastic general equilibrium (DSGE) framework to the data. At the end of the course, students will be able to: i) read state-of-the-art scientific papers based on Structural VARs (SVARs), Local Projections (LPs), and DSGE frameworks; ii) produce scientific research with such approaches. 1. From DSGE to VAR frameworks 2. SVAR: Zero restrictions 3. DSGE models: Limited-information estimation by SVAR IRFs matching 4. SVAR & DSGE models: Uncertainty shocks and non-linearity in macro (an introduction) 5. SVAR: Traditional sign restrictions & recent refinements 6. Proxy-SVARs 7. Counterfactual simulations with VARs 8. Local Projections 9. DSGE models: Metropolis-Hastings (time permitting)
Learning goals	The goal of this subject is to learn how to estimate multivariate models for the analysis of the business cycle, identify its drivers, estimate the transmission mechanisms of structural impulses, and assess their relevance.
Teaching methods	Frontal lectures and students' group presentations.
Course on transversal, interdisciplinary, transdisciplinary skills	☐ Yes ☒ No



Available for PhD
students from other
courses

☒ Yes
☐ No

Prerequisites
(not mandatory)

max 3750 caratteri

Examination methods Assessment:
(in applicable)

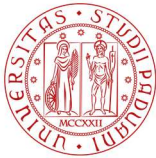
- Students' presentations of state-of-the-art papers: 20%. These 45-minute-long presentations will be group presentations, with questions from the audience (Efrem, Giovanni, and the non-presenting students). The papers you will be required to read and present will be communicated in class.
- Final project: 80%. The final project is expected to be a novel piece of research with a short motivation, a description of the data and the econometric approach, a documentation of the main result with comments (one Figure/Table could be enough), and a short concluding section. In other words, this project is expected to be a short scientific-type of paper. The final project is expected to be a solo project (although collaboration among students is allowed). The (hard!) deadline for the project is March 31, 2026.

Suggested readings

- Angeletos, G., F. Collard, and H. Dellas (2020): "Business Cycle Anatomy," *American Economic Review*, 110(10), 3030–3070.
 - Antolín-Díaz, J., and J. F. Rubio-Ramírez (2018): "Narrative Sign Restrictions," *American Economic Review*, 108(10), 2802–2829.
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