# SYLLABUS

# Course: Behavioral Macroeconomics (Graduate)

**Prerequisites:** Advanced Macroeconomics, Familiarity with structural macroeconomic modelling

## Course Description

This course explores macroeconomic consequences of departures from the Rational Expectations assumption. We will discuss how behavioral biases, cognitive constraints and imperfect information affect economic behavior and macroeconomic dynamics. We touch upon the classical literature on learning in macroeconomics to modern frameworks of rational inattention, diagnostic expectations, and sparsity. We study behavioral departures from RE stemming from sources such as overconfidence, myopia and cognitive discounting.

## Learning Outcomes

The goal of this course is to understand how bounded rationality shapes macroeconomic dynamics, and how to develop mathematical models of boundedly rational behavior.

The course will involve preparing for lectures by reading the assigned papers ahead of class and making a 1-page summary of the main ideas discussed in the paper. In class, we will be revisiting the core concepts described in these papers. During lectures, we will be discussing these papers in detail.

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# Module 1: Irrational behavior and efficiency

*Does macroeconomics rely on the assumption of "rational behavior"? Does empirical evidence provide support for Full Information Rational Expectations (FIRE)?*

- **Week 1: Zero-Intelligence Agents**
    - **Core Paper:** Gode & Sunder (1993), "Allocative Efficiency of Markets with Zero-Intelligence Agents," *Journal of Political Economy*.
    - **Focus:** The "Double Auction" experiment. Understanding how market constraints (budget sets) and structure can deliver efficiency even without rational behavior
- **Week 2: Information Rigidity and Empirical Tests**
    - **Core Paper:** Coibion and Gorodnichenko (2015), "Information Rigidity and the Expectations Formation Process: A Simple Framework and New Facts," *American Economic Review*.
    - **Focus:** Testing for departures from FIRE using predictability in forecast errors and forecast revisions.

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## Module 2: Learning and Information Frictions

*How agents process information and update beliefs under constraints.*

- **Week 3: Adaptive Learning & E-Stability**
  - **Core Paper:** Marcet & Sargent (1989), "Convergence of Least Squares Learning Mechanisms in Self-Referential Linear Stochastic Models," *Journal of Economic Theory*.
  - **Focus:** The "Agents as Econometricians" approach. Mapping the Actual Law of Motion (ALM) to the Perceived Law of Motion (PLM). Convergence in Toy models.
- **Week 4: Sticky Information**
  - **Core Paper:** Mankiw & Reis (2002), "Sticky Information versus Sticky Prices," *Quarterly Journal of Economics*.
  - **Focus:** Comparing information rigidity and price rigidity as sources of persistence
- **Week 5: Rational Inattention & Entropy**
  - **Core Paper:** Sims (2003), "Implications of Rational Inattention," *Journal of Monetary Economics*.
  - **Focus:** Shannon capacity and the "bottleneck" of human cognition. Why agents optimally choose to ignore information.

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## Module 3: Narratives, Heuristics and Biases

*The role of higher-order beliefs and psychological distortions in aggregate cycles.*

- **Week 6: Macroeconomics of Narratives**
  - **Core Paper:** Flynn and Sastry (2024), "The Macroeconomics of Narratives," *Economic Theory*.
  - **Focus:** How "Animal Spirits" and collective beliefs drive sentiment-driven booms and busts.
- **Week 7: Myopia and Anchoring**
  - **Core Paper:** Angeletos and Huo (2021), "Myopia and Anchoring," *American Economic Review*.
  - **Focus:** Proving the observational equivalence between incomplete information and behavioral distortions.
- **Week 8: Diagnostic Expectations & Overreaction**
  - **Core Paper:** Bordalo, Gennaioli, & Shleifer (2018), "Diagnostic Expectations and Credit Cycles," *Journal of Finance*.
  - **Focus:** The "Representativeness" heuristic and how overreaction to news creates credit cycles.

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## Module 4: Behavioral Microfoundations

*Applying bounded rationality to consumption, labor, and firm-level decision-making.*

- **Week 9: Behavioral Household Finance**
    - **Core Paper:** Laibson (1997), "Golden Eggs and Hyperbolic Discounting," *Quarterly Journal of Economics*.
    - **Focus:** Time-inconsistency, present bias, and the implications for the Marginal Propensity to Consume (MPC).
- **Week 10: Fair Wages and Labor Rigidity**
    - **Core Paper:** Akerlof & Yellen (1990), "The Fair Wage-Effort Hypothesis and Unemployment," *Quarterly Journal of Economics*.
    - **Focus:** Morale, fairness, and the behavioral roots of downward nominal wage rigidity.
- **Week 11: Sparsity-Based Bounded Rationality**
    - **Core Paper:** Gabaix (2014), "A Sparsity-Based Model of Bounded Rationality," *Quarterly Journal of Economics*.
    - **Focus:** The case for "simple" models. How agents purposefully ignore low-impact variables to reduce cognitive load.

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# Module 5: Synthesis

- **Week 12-15: Research Proposal Presentations**
    - Students will present their final research proposals. This may include: clear and precise statement of the research problem, concise discussion of related literature, modelling strategies and potential estimation techniques/solution methods.

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# Grading & Assessment

| **Component (Weight)** | **Description** |
|---|---|
| Replication Project (20%) | Download SPF Data from the Philadelphia Fed website and replicate the main regressions from Coibion and Gorodinichenko (2015) |
| Weekly Write-ups (60%) | A 1-page analysis of the weekly core paper. Be sure to discuss the main ideas presented, but at an accessible level of detail. If you prefer, you can choose to submit a deck of UPTO 6 slides instead of a write-up. |

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| Research Proposal (20%) | Developing a research question, building a mathematical model, discussing estimation strategies. |

## Recommended Resources

- **The Foundation:** Thomas J. Sargent, *Bounded Rationality in Macroeconomics: The Arne Ryde Memorial Lectures*.
- **Concepts & Context:** Jason Collins' Blog excellent for digestible explanations of some core concepts in behavioral economics