Green Macro-Finance

Title	Green Macro-Finance
Semester	E2026
Master programme in	Samfundsøkonomi
Type of activity	Course
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Registration is through stads selvbetjeningwithin the announced registration period, as you can see on the Studyadministration homepage. When registering for study activities, please be aware of the potential conflicts between study activities or exam dates. The planning of activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.
ECTS	10
Responsible for the activity	Mehmet Ulug (mehmetu@ruc.dk)
Head of study	Nina Torm (ninatorm@ruc.dk)
Teachers	__NONE
Study administration	ISE Registration & Exams (ise-exams@ruc.dk)
Exam code(s)	U60891GB

ACADEMIC CONTENT

Overall objective	The course develops an analytical framework for understanding the operations of key monetary and financial institutions in the modern global economy, with a particular emphasis on the role of money and finance in helping spur a green transition of the world economy. The course tracks the development of shadow banking from the emergence of Eurodollar markets in the 1950s to the increasing collateralization of finance from the early 1990s onwards, stressing the implications for fiscal-monetary cooperation in collateral-based financial systems. Analytically, the course draws upon central banking scholarship interpreting the 2008 financial crisis as caused by balance sheet interlinkages between global banks and mobilizes a macro-financial specialization within Post-Keynesian monetary economics, known as The Money View. The course progresses from these two literatures to the emerging field of Critical Macro-finance, which draws on the intellectual lineage of Schumpeter, Keynes and Minsky and on The Money View, but departs from the latter by analytically connecting financial structure to the macro-institutions of the state. In parallel with introducing to these theoretical literatures, the course gives students in-depth knowledge of the knots and bolts of financial regulation and monetary policy operations. In so doing, special emphasis is given to the potential role of financial regulation and monetary policy in spurring structural changes in finance that may accelerate the transition to a low-carbon emissions economy.

Detailed description of content

Green Macro-Finance Money, Finance, and Policy for the Green Transition

Who will finance the Green Transition?

The transition to a sustainable economy is not only an environmental challenge, but also a macro-financial one. Financial systems, banks, central banks, and governments play a central role in mobilizing investment, managing risks, and steering capital toward sustainable economic activities.

This course explores how modern monetary and financial systems shape the transition toward a low-carbon and environmentally sustainable economy. Students examine the institutional structure of global financial markets, the role of banking systems and central banks, and the policy tools that can support green investment and sustainable development.

Particular attention is given to green finance instruments, green monetary policy, financial regulation, and the role of fiscal policy and public investment in accelerating the Green Transition. The course also addresses emerging macro-financial risks related to climate change, biodiversity loss, and ecosystem degradation, and introduces analytical frameworks used to study interactions between the financial system, the macroeconomy, and the environment.

Example Themes and Methods

- Macro-financial risks associated with climate change and the Green Transition
- Biodiversity loss, ecosystem decline, and their macroeconomic implications
- Green financial instruments such as green bonds, green banks, and green credit
- Green monetary policy and the evolving role of central banks in climate policy
- The structure and evolution of global dollar funding markets and shadow banking
- Financial regulation and capital allocation in the transition to low-carbon economies
- Fiscal-monetary coordination in collateral-based financial systems
- Climate transition risks and financial system dynamics
- Empirical and institutional analysis of macro-financial systems
- Stock-Flow Consistent (SFC) modelling frameworks for analyzing interactions between finance, macroeconomy, and climate policy-

Concepts and Theories

- Money creation and the role of banks in modern monetary systems
- The structure of global dollar money markets and collateralized finance
- Central banking, monetary policy operations, and interest rate policy
- Critical macro-finance and the political economy of financial systems
- Sustainable finance and green financial regulation
- Climate-related financial risk and transition risk
- Macro-financial approaches to the Green Transition
- Ecological macro-finance and modelling of economy–finance–nature interactions

Course material and Reading list

Readings and preparation materials for each session will be specified and made available on the course Moodle page prior to the start of the course. The reading list will include academic articles, book chapters, and policy reports relevant to the themes of the course. Students are expected to complete the assigned readings in advance in order to actively participate in class discussions and engage with the analytical and empirical material presented during the course.

Examples of core and supplementary readings include:

- Aguila, N., & Wullweber, J. (2024). Greener and cheaper: green monetary policy in the era of inflation and high interest rates. Eurasian Economic Review, 14, 39–60.
- Battiston, S., Dafermos, Y., & Monasterolo, I. (2021). Climate risks and financial stability. Journal of financial stability, 54, 100867.
- Dafermos, Y., & Nikolaidi, M. (2021). How can green differentiated capital requirements affect climate risks? A dynamic macrofinancial analysis. Journal of Financial Stability, 54, 100871.
- Dafermos, Y., Gabor, D., & Michell, J. (2023). Institutional supercycles: An evolutionary macro-finance approach. New political economy, 28(5), 693-712.
- Flammer, C. (2021). Corporate green bonds. Journal of financial economics, 142(2), 499-516.
- Golka, P., Murau, S., & Thie, J. E. (2024). Towards a public sustainable finance paradigm for the green transition. Finance and Society, 10(1), 38-50.
- Guter-Sandu, A., Haas, A., & Murau, S. (2024). Green macro-financial governance in the European monetary architecture: Assessing the capacity to finance the net-zero transition. Competition & change, 10245294241275103.
- Karolyi, G. A., & Tobin-de la Puente, J. (2023). Biodiversity finance: A call for research into financing nature. Financial Management, 52(2), 231-251.
- Kedward, K., Gabor, D., & Ryan-Collins, J. (2024). Carrots with (out) sticks: Credit policy and the limits of green central banking. Review of international political economy, 31(5), 1593-1617.

- Kedward, K., Ryan-Collins, J., & Chenet, H. (2023). Biodiversity loss and climate change interactions: financial stability implications for central banks and financial supervisors. Climate Policy, 23(6), 763-781.
- Vestergaard, J. (2022). Monetary policy for the climate? A money view perspective on green central banking. Institute for New Economic Thinking Working Paper Series, (188).
- Vestergaard, J. (2024). Green central banking: reorienting finance through a recalibration of monetary policy. Climate Policy, 24(7), 924-933.

Overall plan and expected work effort

The total workload associated with a 10 ECTS course is 270 hours.

For this course, the workload is allocated as follows:

Classes: 20 hours

Preparation for classes (readings, exercises, and other tasks): 120 hours (approximately 5 to 6 hours per hour of class)

Exam and project work: 56 hours

Other activities (exercises, assignments, etc.): 74 hours

Total: 270 hours

Evaluation and feedback

Students receive ongoing feedback from the instructor through in-class discussions, exercises, and question-and-answer sessions during the course. Individual feedback on the final exam may also be provided upon request.

The course is evaluated regularly. At the beginning of the course, the course convenor is informed if the course is to be evaluated and notifies the students. The evaluation is carried out in accordance with the study board's evaluation practice.

Programme

Course Program

The course is organized around a set of thematic modules that introduce students to the macro-financial foundations of the Green Transition. The outline below provides a general overview of the course structure.

Although flexible, the progression of the course covers the following themes::

- **Foundations of green macro-finance** Introduction to the relationship between macroeconomics, finance, and environmental sustainability, and the role of financial systems and public policy in addressing environmental challenges.
- **The modern monetary and financial system** Structure of contemporary monetary systems, including money creation, banking systems, and the institutional role of central banks in modern economies.
- **The rise of global finance** Historical expansion of international finance, the emergence of the dollar-centred global financial system, and the growth of shadow banking and collateral-based finance.
- **Macro-financial dynamics and financial instability** Balance-sheet interactions, financial cycles, and theoretical perspectives on financial instability in modern macroeconomics.
- **Environmental risks and the global economy** Climate change, biodiversity loss, and ecosystem degradation as emerging sources of macroeconomic instability and financial risk.
- **Financing the green transition** Green finance instruments such as green bonds and green credit, sustainable investment strategies, and the role of development banks and public financial institutions.
- **Central banking and climate policy** The potential role of central banks in addressing climate-related financial risks through monetary policy, financial supervision, and regulatory frameworks.
- **Financial regulation and green investment** How financial regulation and prudential policies can influence credit allocation and support sustainable economic activities.
- **Fiscal policy and public investment for green transformation** Public investment, industrial policy, and fiscal-monetary coordination in financing large-scale green economic transformation.
- **Analytical frameworks for the green economy** Modelling approaches used to analyse the interaction between macroeconomic dynamics, financial systems, and environmental change, including stock-flow consistent models.

A detailed weekly programme, including readings and preparation materials, will be made available on the course Moodle page before and during the course.

ASSESSMENT

Overall learning outcomes

After the course, the student will be able to:

- understand the evolution of international money and finance from the late 19th century onwards
- read, understand, and evaluate professional discourse about the current operation of global money markets
- understand the institutional structure of the dollar money markets, their connection to capital markets, and the mechanisms of central bank control
- analyze how global financial processes contribute to shaping macroeconomic dynamics and outcomes
- understand the knots and bolts of financial regulation and monetary policy operations, nationally and internationally
- analyze how financial regulation and monetary policy may structurally affect the financial system in ways that could contribute to steering capital towards economic activities that support a sustainable future – and away from those that do not.

Form of examination

Individual written invigilated exam

The exam must be completed using your own computer. The internet may only be used to access the exam materials and submit your answers.

The duration of the exam is 3 hours.

Permitted support and preparation materials for the exam: No support or preparation materials are allowed during the exam..

Assessment: 7-point grading scale

Form of Re-examination

Samme som ordinær eksamen / same form as ordinary exam

Type of examination in special cases

**********NONE**

Examination and assessment criteria (implemented)

The exam consists of an **individual written invigilated exam. ** The exam must be completed using the student's own computer. Internet access is permitted only for accessing the exam materials and submitting answers through the designated exam platform.

The duration of the exam is **3 hours.**

Permitted support and preparation materials: No support or preparation materials are allowed during the exam.

The exam will consist of a combination of **short analytical questions and longer essay-style questions.** Students may be asked to explain key theoretical concepts, interpret macro-financial developments, and apply theoretical frameworks from the course to contemporary policy issues related to finance, climate risks, and the Green Transition.

Assessment Criteria

The assessment evaluates the student's ability to:

- demonstrate knowledge of the institutional structure of modern monetary and financial systems
- explain key concepts related to money creation, banking systems, financial regulation, and central banking
- analyze macro-financial processes and their implications for macroeconomic dynamics and financial stability
- critically discuss the role of financial institutions, monetary policy, and financial regulation in supporting the Green Transition

- evaluate macro-financial risks associated with climate change, biodiversity loss, and environmental degradation
- apply theoretical frameworks from macro-finance and ecological macroeconomics to contemporary economic and policy issues related to sustainable finance and environmental transition
- assess the role of financial instruments such as green bonds, green credit, and sustainable investment mechanisms in financing low-carbon and environmentally sustainable economic activities
- present arguments clearly, critically, and in a well-structured written form
- assessment emphasizes analytical reasoning, conceptual understanding, and the ability to connect macro-financial theory with challenges related to the Green Transition and environmental sustainability.

Exam code(s)

Exam code(s) : U60891GB

Course days:

Hold: 1

Green Macro-Finance

Time 22-09-2026 12:15 til
22-09-2026 14:00

Location 07.2-061 - Undervisningslokale (30) Skærm

Teacher Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time 29-09-2026 12:15 til
29-09-2026 14:00

Location 07.2-061 - Undervisningslokale (30) Skærm

Teacher Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time 06-10-2026 12:15 til
06-10-2026 14:00

Location 07.2-061 - Undervisningslokale (30) Skærm

Teacher Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time 13-10-2026 12:15 til
13-10-2026 16:00

Location 07.1-033 - Undervisningslokale (30) Skærm

Teacher Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	28-10-2026 12:15 til 28-10-2026 14:00
Forberedelsesnorm	Ikke valgt
Forberedelsesnorm D-VIP	Ikke valgt
Location	07.2-061 - Undervisningslokale (30) Skærm
Teacher	Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	03-11-2026 12:15 til 03-11-2026 14:00
Location	07.2-061 - Undervisningslokale (30) Skærm
Teacher	Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	09-11-2026 12:15 til 09-11-2026 16:00
Forberedelsesnorm	Ikke valgt
Forberedelsesnorm D-VIP	Ikke valgt
Location	07.1-008 - Undervisningslokale (60)
Teacher	Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	24-11-2026 12:15 til 24-11-2026 14:00
Location	07.2-061 - Undervisningslokale (30) Skærm
Teacher	Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	01-12-2026 12:15 til 01-12-2026 16:00
Location	07.2-061 - Undervisningslokale (30) Skærm
Teacher	Mehmet Ulug (mehmetu@ruc.dk)

Green Macro-Finance

Time	15-01-2027 09:00 til 15-01-2027 12:00
Location	05.1-021 - Undervisningslokale (30)

Green Macro-Finance

Time	24-02-2027 09:00 til 24-02-2027 12:00
Location	12.2-079 - Teori 12.2 (15) Skærm