



STUDY PROGRAMME

EUROPEAN ECONOMIC STUDIES

ACADEMIC YEAR

2025 - 2026

SEMESTER

2

COURSE TITLE

SUSTAINABLE INFRASTRUCTURE ECONOMICS & FINANCE (PART I)

COURSE PROFESSORS

H. GOLDSMITH; S. HYZYK & P-E. NOEL

COURSE ASSISTANT

DMYTRO KAZAKOV

NATURE OF COURSE (COMPULSORY, ELECTIVE)

COMPACT SEMINAR

LANGUAGE OF INSTRUCTION

ENGLISH

ECTS CREDITS

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1. COURSE OBJECTIVE

The objective of the course is to give students an understanding of the history, policy background, technical issues, economic rationale, and financial structuring of sustainable and resilient infrastructure projects to address global climate, environmental and social crises. The latest EU Policy developments, including the Green Deal, Taxonomy and Just Transition will be covered.

2. LEARNING OUTCOMES

At the end of this course, the student will be able to:

- Describe the historical evolution of market- and non-market-based models of infrastructure project development and delivery;
- Describe the main trends in European and global policy driving infrastructure investments towards the triple bottom line of economic, social, and environmental sustainability;
- Explain the different project selection and design approaches applying appropriate sustainability and resilience criteria, including an appreciation of the associated risks in different sectors;
- Describe the main elements of the EU Green Deal, the principles of the EU Taxonomy for sustainable finance and the Just Transition Mechanism;
- Explain basic principles of infrastructure programme and project cycle management;
- Describe the main infrastructure financing instruments used by public and private sector promoters;
- Understand the basic principles underpinning the structuring of project and infrastructure finance as well as Public-Private Partnerships (PPPs)



The learning outcomes for this course tie in with the following learning outcomes for the European Economic Studies programme:

- Describe, explain and illustrate the normative assumptions, implications and limitations of business theory;
- Use their knowledge of business theory to define corporate strategy and assess corporate structures;
- Be autonomous in their preparation and review of materials for the courses as well as in their completion of assignments bearing different requirements in terms of methodology, workload and evaluation of the final work;
- Work together in groups to solve problems, share tasks, prepare assignments, go through case studies and make presentations;
- Think innovatively and provide constructive analytical commentary as well as potential recommendations on the evolution of the EU and its possible future development.

3. COURSE CONTENTS

Module Title	Date	Lecturers
1. Introduction and policy context: historical evolution of infrastructure services: triple bottom line; Paris Agreement; SDGs; infrastructure policy evolution. Case studies.	09.03.26 14:00-18:00	Hugh GOLDSMITH
2. Sustainable infrastructure programme and project cycle, economics, risk and resilience. Just Transition. Case studies.	10.03.26 09:00-12:00	Sebastian HYZYK
3. Infrastructure financing techniques; Project Finance; PPPs; Green Finance; Infrastructure Funds. Case studies.	10.03.26 13:00-16:00	Pierre- Emmanuel NOEL

4. TEACHING METHOD(S)

Contact hours: 10h.

Method: The course will be taught as a series of seminars combining lectures and group discussion based on pre-reading. Case studies will be used extensively in classes, drawing on the Lecturers' experience as practitioners. Students are expected to do the pre-reading and watch any online material, which they should be ready to discuss in class, where active participation is expected.

5. COURSE MATERIAL

Lecture notes (PPT presentations) will be distributed or made available online before each session. There is no single textbook for this course. Below is a list of required background readings (other material may be indicated online):



Session 1

- Goldsmith, H. (2014). The Long-Run Evolution of Infrastructure Services, CESifo Working Paper, No. 5073, Center for Economic Studies and ifo Institute (CESifo), Munich.
https://www.econstor.eu/bitstream/10419/105088/1/cesifo_wp5073.pdf
- Bak, C., Bhattacharya, A., Edenhofer, O., & Knopf, B. (2017). Toward a Comprehensive Approach to Climate Policy, Sustainable Infrastructure and Finance. Centre for International Governance Innovation, Policy Brief 106. Canada.
<https://www.cigionline.org/sites/default/files/documents/PB%20no.106web.pdf>

Session 2

- Kivilä J, Martinsuo M, Vuorinen L (2017). Sustainable project management through project control in infrastructure projects. International Journal of Project Management, 35 (6), pp 1167-1183, <https://doi.org/10.1016/j.ijproman.2017.02.009>
- European Environment Agency (2025), Europe's state of the environment 2025, EEA.
<https://www.eea.europa.eu/en/europe-environment-2025>
- Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. Nature Energy, 5(8), 569-577.
https://ecology.iww.org/PDF/misc/Carley.2020_Energy-Justice-Lit-Review.pdf

Session 3

- EU Technical Expert Group on Sustainable Finance (2019), Taxonomy Technical Report. Chapter 1 Recent Developments.
https://ec.europa.eu/knowledge4policy/publication/sustainable-finance-teg-final-report-eu-taxonomy_en
- Bielenberg, A., Kerlin, M., Oppenheim, J., & Roberts, M. (2016). Financing change: How to mobilize private-sector financing for sustainable infrastructure. McKinsey Center for Business and Environment. http://newclimateeconomy.report/2015/wp-content/uploads/sites/3/2016/01/Financing_change_How_to_mobilize_private-sector_financing_for_sustainable-infrastructure.pdf
- PPP Motivations and Challenges for the Public Sector - Why (not) and how, EPEC, October 2015
https://www.eib.org/attachments/epec/epec_ppp_motivations_and_challenges_en.pdf
- McKinsey, Built to last: Making sustainability a priority in transport infrastructure (2021)
<https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/built-to-last-making-sustainability-a-priority-in-transport-infrastructure>

Other background reading and useful references

- Ainger, C. M., & Fenner, R. A. (2014). Sustainable infrastructure: principles into practice. London, UK: ICE publishing.
- Bhattacharya, A., Oppenheim, J., & Stern, N. (2015). Driving Sustainable Development through Better Infrastructure. Brookings Global Economy and Development, Working Paper, 91. <https://www.economic-policy-forum.org/wp-content/uploads/2015/09/Session-1-Bhattacharya-PPT-Driving-Sustainable-Development-Through-Better-Infrastructure-ThinkWeek2015.pdf>



- Ehlers T (2014). Understanding the challenges for infrastructure finance. BIS Working Papers No. 454. <http://www.bis.org/publ/work454.pdf>
- European Commission (2021), Economic Appraisal Vademecum 2021-2027 - General Principles and Sector Applications. Directorate General for Regional and Urban Policy.
- Economic Appraisal Vademecum 2021-2027 - General Principles and Sector Applications - Regional Policy - European Commission (europa.eu)
- European Commission (2021). Technical guidance on sustainability proofing for the InvestEU Fund. COMMISSION NOTICE (2021/C 280/01)
- European Investment Bank (2013). The Economic Appraisal of Investment Projects at the EIB, http://www.eib.org/attachments/thematic/economic_appraisal_of_investment_projects_en.pdf
- Ferrer, A.L.C. Thomé, A.M.T. Scavarda. A.J. (2016). Sustainable urban infrastructure: a review. Resour. Conserv. Recycl. (2016), <https://doi.org/10.1016/j.jenvman.2016.09.080>
- International Labour Organisation (2015). Guidelines for a just transition towards environmentally sustainable economies and societies for all, ILO, Switzerland. https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf
- Jones, H. (2021). Sustainable Infrastructure Project Evaluation in W. Leal Filho et al. (eds.), Industry, Innovation and Infrastructure, Encyclopedia of the UN Sustainable Development Goals, Springer Nature.
- Neuman, M. (2022). Sustainable Infrastructure for Cities and Societies. Routledge.

6. EVALUATION

A **certificate of attendance** will be issued to those students who will attend a compact seminar, provided:

- Full attendance
- Passes a **10-question quiz** testing his/her knowledge acquired during this lecture
 - An online multiple choices test (80% of the grade) at the end of the last course session – 15 minutes to answer 10 questions.
 - Participation in the seminar (20% of the mark)
 - The weighted average of the two assessment elements must be equal to or greater than 50% for the seminar to be considered validated by the student

7. FURTHER SPECIFICATIONS

In this course, the use of generative artificial intelligence (genAI) is strictly prohibited at all stages of the work process on the in-class oral presentations. According to art. 38 of the Study Regulations, prohibited use means that *“all tasks related to an assignment, from planning, conceptualisation to research and writing, must be completed without any support of genAI.”*

Failure to respect these rules will be considered academic misconduct and be sanctioned in line with the Study Regulations (Section 4.4.). The use of AI-powered tools for grammar checking or reference management is permitted.

Throughout the whole duration of the exam, all the mobile phones and other electronic devices



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(except the laptop which you take the exam on) need to be put in silent mode and be kept in your bag. If you want to take and upload pictures to the exam, e.g. graphs, please raise your hand and wait for an explicit authorisation of a supervisor. Any other unauthorised usage and/or possession of phones and/or other electronic devices throughout the entire duration of the exam (inside or outside of a classroom) will be considered as (attempted) cheating and lead to a mark of 0 (under Art. 30b of the Study Regulations).

For the detailed rules on the (digital written) examinations at the College of Europe, please refer to the provisions of the Study Regulations and *Dispositions particulières*. Students are responsible to have read and complied with the applicable rules.