College of Europe
Collège d'Europe

Brugge | Natolin

ECTS CARD

STUDY PROGRAMME	ACADEMIC YEAR	SEMESTER
ECO	**2026**	**2**

COURSE TITLE

ECONOMICS OF EU NETWORK INDUSTRIES

COURSE PROFESSOR	COURSE Acad. ASSISTANT
JACQUES PELKMANS	**Colm Lavelle**

NATURE OF COURSE	LANGUAGE OF INSTRUCTION
OPTIONAL	**ENGLISH**

ECTS CREDITS

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1. COURSE OBJECTIVES

At the end of this course, the student will have a thorough understanding of the conceptual and practical toolbox encompassing intra-EU cross-border liberalisation, EU competition policy, and EU regulation for 6 network industries, in constituting a genuine EU single market, highlighting their evolution and the challenges they pose from both an economic and a policy perspective.

The course will equip students with the conceptual framework – economic and regulatory, and to a limited extent, based on EU competition policy - necessary to understand the role of EU network industries in the EU single market and with up-to-date knowledge of the regulatory tools deployed across them. It will therefore enable them to understand the current and the upcoming policy questions in a crucial part of the EU economy both in terms of its size and, strategically given their 'input' function in other sectors, as a key enabler of the well-being of EU citizens and the competitiveness of EU businesses.

2. LEARNING OUTCOMES

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

- Understand and analyse the EU single market for 6 important network industries, sectors with and without major 'sunk costs'
- Master the interplay between EU (cross-border) liberalisation, EU regulation, and EU (as well as Member States') competition policy, serving the emergence and proper functioning

of the single market for network industries
- Appreciate and analyse the basic economics of the (emerging) single markets in
(i) **gas & electricity**, and the interaction with climate policies, including the Green Deal
(ii) **eCommunications and the digital single market**,
(iii) **broadcasting** and **internet platforms**,
(iv) **air transport**,
(v) rail, emphasizing **freight rail services**
- Understand the rationales and basic working of quasi-regulatory Agencies at EU level in energy (ACER; and the EU network of infrastructure TSOs for gas [ENTSO-G] and electricity [ENTSO-E]), eComms (BEREC), and the safety Agencies for rail (ERA), air transport (EASA) and maritime services (EMSA)
- Participate in EU economic policy debates on the critical challenges and policy choices in network industries, given lingering barriers in the single market and the progress accomplished in market-based approaches (at first, quite contested)

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

For ECO students

1. Understand the normative assumptions, implications and limitations of economic theory and economic policy making with respect to network industries;

2. Use economic theory to assess the rationale(s) of EU regulation of network industries;

3. Learn how to acquire relevant information in related disciplines (law, political science) insofar as directly useful to appreciate the intricate issues in EU network industries in the single market

4. Has acquired economic knowledge and insights about the leading liberalisation and competition issues as well as regulatory approaches for a proper functioning of the EU single market of network industries

For MATA-ECO students

1. All the learning outcomes 1 – 4 under EEIB, ECO-ELEA and ECO-EPPA, above, also apply to MATA students.
2. When designing and amending the regulatory approach in network industries or details of the liberalisation process as well as of competition issues in these sectors, the EU and US are careful observers of one another, whether in the academic literature, in think-tanks and/or in ELEA-type settings (including courts). In this sense our NWI course is highly relevant for MATA students as much of what is learnt and applicable is likely to be relevant and/or similar in the US as well.

3. COURSE CONTENTS

The course will have two horizontal sessions (basic economics of NWI ; typical competition issues in NWI) and eight sessions for six sectors.

The six network markets which will be dealt with during the course are:

i. Electronic communications, the internet and the EU digital market (2x);
ii. Broadcasting and internet platforms (1x);
iii. Air transport (1x);
iv. Rail (1x);
v. Electricity (2x); and
vi. Gas (1x).

The course will go considerably in-depth into the economic characteristics of network industries, and on how to introduce competition in such sectors at EU level. In different degrees this has, by now, been accomplished in the 6 sectors, following a period of almost 40 years. It will zoom in on the regulatory instruments employed by the Union in all six sectors, and discuss selected competition aspects such as margin squeeze, the theory of access and interconnection, mergers and their timing, and the evolution of the underlying technologies. Cases and examples will be mostly brought in *by the students*, after consultation with Prof Pelkmans, where relevant, as well as with Colm Lavelle [see the separate document "Student presentations, and some suggestions for readings when preparing].

4. TEACHING METHOD

Contact hours: 30 hours.

The teaching will be done in the form of lectures.

Students are expected to actively participate through presentations of small cases/themes and debate. As noted above, the students will receive some guidance and some literature suggestions [see also below] before the course begins, so that they can find their way and prepare the short presentations on that basis (without investing too much time). See the separate document "Student presentations, and some suggestions for readings when preparing". For all students, *prior reading* of the compulsory reading material, before *every lecture session*, is essential. See below under 6.

5. COURSE MATERIAL

The list of *compulsory* readings reading list is found here. A few *recommended* readings are indicated as well. Readings recommended for the student *presentations* are found in a separate document for the students. Note that compulsory readings have been kept short, with one exception: the very first one by Brons et al (2019).

1. Basic economics of networks and liberalisation in the EU

M. Brons, F. Kalantzis & L. Vergano (2019), Market functioning & Market Integration in EU network industries – telecommunications, energy & transport, *European Economy Discussion Papers* 111, September (DG EcFin) ; www.ec.europa.eu/info/publications/market-functioning-and-market-integration-eu-network-industries-**telecommunications-energy-and-transport_en** (**pp. 11 – 53**)

[*recommended*] CERRE study group (2014), Network industries: efficient regulation, affordable & adequate services, June, www.cerre.eu/sites/cerre/files/140618_CERRE_RegulDossIncomEC_final

2. Typical competition aspects in network markets

Ch. Bender, G. Goetz & B. Pakula (2011), Effective competition : its importance and relevance for network industries, *Intereconomics*, Vol. 46, special forum on 'effective competition'

[*recommended*] European Commission, C(2018)2374 of 27 April 2018, Guidelines on market analysis and the assessment of significant market power (based on telecoms), pp. 27

European Commission (2020), Recommendation of 18-12-2020 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation [.....], C(2020) 8750, see www.ec.europa.eu/digital-single-market-/en/news/commission-updated-recommendation-relevant-markets (pp. 9)

3. Electronic communications, the internet and the EU Digital Market

R. Feasey (2019), New European Electronic Communications Code interpretation & implementation, *Issue Paper CERRE*, January, www.cerre.eu/wp-content/uploads/2020/05/190110_CERRE_EECC_IssuePaper_Final_compressed_1-1.pdf (11 pp.)

M. Cave, C. Genakos & T. Valletti (2019), The European Framework for regulating telecommunications, a 25-year appraisal, *Review of Industrial Organisation*, Vol. 55, pp. 47-62

[*recommended*] M. Bourreau (2021), Cooperation between telecommunications operators for infrastructure deployment, *CERRE Issue Paper*, October, www.cerre.eu/wp-content/uploads/2021/10/211025_CERRE_IP_Co-investment-Final.pdf (pp. 19)

[*recommended*] F. Grijpink et al (2018), Network sharing and 5 G, from McKinsey & Company telecoms, February, see www.mckinsey.com/industries/telecommunications/our-insights/network-sharing-and-5g

[*recommended, but **the first 9 pp. compulsory***] Oxera (2018), Regulating oligopolies in electronic communications markets : supplementary discussion paper, January, go to www.oxera.com/wp-content/uploads/2018/07/Regulating-oligopolies-in-electyronic-communications-markets---supplementary.pdf.pdf (pp. 35) [note, this interesting and sophisticated paper is written for Liberty Global, the parent company of Vodafone, Ziggo etc.] [the core of the paper is summarised in the first 9 pp.]

[*recommended*] GSMA & Kearney (2022), The internet value chain, May, www.gsma.com/publicpolicy/wp-content/uploads/2022/05/Internet-Value-Chain-2022.pdf ; read pp. 1-10 (of pp. 54)

Telefonica (2022), Merger control : ensuring the competitiveness of European markets, 5 July, together with a very short article of an interview with [now former Commissioner] Verstager, 31 Jan 2023, [see www.capacitymedia.com] where she argues strongly in favour of a much more consolidated EU telecoms single market, and again together with an article on Oct. 12 2023, on www.isp.page.news/ by Gregory Adamowicz on "a Digital Networks Act" encouraging EU telecoms "champions" – read also on https://www.digital-networks-act.com a short explanation. The DNA draft might well be published during the course in 2026.

4. Broadcasting and Internet Platforms

[*recommended*] UK House of Commons, Media Ctee (2021), The future of Public Service Broadcasting, London, 25 March, www.committees.parliament.uk/publications/5243/documents/52552/default (pp. 53) [although specific to the UK – with its fully publicly funded BBC, without advertising, besides commercial broadcasters - this report shows the predicament of today's broadcasting in a world of internet, platforms and social media, with the policy options].

[*recommended*] Center for American Progress (2021), How to regulate Tech : a technology policy framework for online services, *Report*, November, Washington DC, https://www.americanprogress.org/article/how-to-regulate-tech-a-technology-policy-franeowrk-for-online-services/ [a powerful analysis blending broadcasting and online services and platform issues, with economic, political, legal and other aspects; also US oriented, with large overlaps with debates in the EU]

J. Cremer, Y.de Montjoye & H. Schweitzer (2019), Competition policy for the digital era, [report on request of Commissioner Vestager], read **ONLY 'Executive Summary'**, pp. 2 – 11 ; see www.ec.europa.eu/competition/publications/reports/kd0419345enn.pdf

[*recommended*] V. Demary & C. Rusche (2018), The economics of platforms, IW-Analysen 123, Koeln, https://www.iwkoeln.de/en/studies/iw-analysen/beitrag/vera-demary-christian-rusche-the-economicsd-of-platforms.html [**a long study but helpful for a fuller understanding**]

J.U. Franck & M. Peitz (2019), Market definition and market power in the platform economy, CERRE Report, May, www.cerre.eu/wp-content/uploads/2020/2020/05/report_cerre_market_power_platform_economy.pdf (pp. 93 ; **only read the Exec. Summary (pp. 6-8),** and the rest only if you have time

[*recommended*] H. Varian (2020), Seven deadly sins of tech?, to be published in *Information Economics and Policy*, Sept. 2020, go to https://ssrn.com/abstract=3750292 (pp. 20); Hal Varian was professor in micro-economics at Berkeley and is now Chief Economist with Google. The paper aims to show empirically that the [7] usual objections to Big-Tech are all "untrue" as shown by (economic) facts (according to prof. Varian). Interesting 'food for thought'.

[*recommended*] P. Larouche & A. de Streel (2021), The European Digital Market Act: a revolution grounded on traditions, *Journal of European Competition Law & Practice*, September, Vol. 12, 7, pp. 542-560.

5. Towards an internal market for electricity, without and with the climate

Philip Lowe (2024), European Electricity Market Reform – ambitions and realities, London, CER, 8 Febr. 2024, see www.cer.eu (pp. 5)

Basic info on the new EU electricity market reform: (A) Press Release COM of 21 May 2024 ; https://ec.europa.eu/commission/presscorner/detail/en/ip_24_2261 ; (B) COM (on 24 May 2024) Questions and answers on the revised electricity market design, https://ec.europa.eu/commission/presscorner/detail/en/qanda_24_2260

[*recommended*] European Commission, *State of the Energy Union Report 2025*, COM(2025) 667 of 6 Nov 2025, https://energy.ec.europa.eu/strategy/energy-union/10th-report-state-energy-union_en

[*recommended*] G. Zachmann, C. Batlle, F. Beaude, C. Maurer, M. Morawiecka & F. Roques (2024), Unity in power, power in unity: why the EU needs more integrated electricity markets, *Bruegel Policy Brief* 14 Febr 2024, see https://www.bruegel.org/policy-brief/unity-power-power-unity-why-eu-needs-more-integrasted-electyrcity-markets (29 pp)

[*recommended*] European Commission (2024), Report on energy prices and costs in Europe, COM (2024) 136 of 22 March 2024, www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2024%3A136%3AFIN&qid=1711266005450

[*recommended*] read the relevant sections on the internal electricity market (or, energy market) in the Letta report of April 2024 and the Draghi report of Sept 2024. See Enrico Letta, Much more than a market, see www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-single-market-report-by-enrico-letta.pdfu (pp. 61-69) and Mario Draghi, The future of European competitiveness, see for Part A (70+ pages) www.commission.europa.eu/document/download/97e481fd-2dc3-412d-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy and for Part B (328 pp) www.commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20 >> the in-depth energy section is in Part B, pp. 4-43.

6. Towards an internal market for gas ?

S. Emilliozzi, F. Ferriani & A. Gazzani (2024), The European energy crisis and the consequences for the global natural gas market, VOXEU, 11 Jan. 2024, https://cepr.org/voxeu/columns/european-energy-crisis-and-consequences-global-natural-gas-market (pp. 5)

[*recommended*] The COM proposal on common rules in "new" gases such as renewable gases and hydrogen, from December 2021, is interesting but extremely complex (pp. 335) ; in addition, there is a proposal – also from Dec. 2021 – on mastering methane (an extreme case, with 27x as much GHGs). Meanwhile, in the summer of 2024 an EU gas regulation and an EU gas directive have been agreed under the EU hydrogen and gas decarbonisation package: Reg. 2024/1789 of 4 August 2024 on the internal markets for renewable gas, natural gas and hydrogen and Dir. 2024/1788 on common rules for these internal markets. A quick survey is by Emma de Koster, Jessica Hargreaves & Ruth Losch (2024) on https//sustainablefutures.linklaters.com/post/102jfz2/decarbonising-gas-markets (PP. 4) [*recommended*] IEA (2022), How the EU can avoid natural gas shortages in 2023, December ; find the report via www.iea.org/news/how-the-european-union-can-avoid-natural-gas-shortages-in-2023

Daniel Gros (2022), Why gas prices and consumer subsidies are both extremely costly and ultimately futile, *CEPS Policy Insights* no. 2022/28, August www.ceps.eu/download/publication/?id=37300&pdf=CEPS-PI2022-28_cost-energy-subsidies.pdf

[*recommended*] ACER (2025), Key developments in European gas markets in 2024, Market Monitoring, October, https://www.acer.europa.eu/monitoring/MMR/electricity_gas_key_developments_2025

(and see the 2024 EU energy union report, quoted under 5., above) (and see Student Presentations, on hydrogen); also a help will be IEA, 2026, Gas Market Report, Q1-2026, to be published on 23 Jan 2026.)

7. **The internal market for air transport**

European Commission, SWD(2019) 296 of 9 July 2019, Executive summary, evaluation of the common rules on air services (5 pp.)

[*recommended*] A. Haylen & L. Butcher (2017), Airports slots, House of Commons, Briefing paper no. CPB 488, June, www.parliament.uk/commons-library

[*recommended*] M. Akguec et al (2018), Low-cost airlines, *CEPS Research report*, May ; see www.ceps.eu

[*recommended*:] G. Burghouwt, P. Mendes de Leon & J. de Wit (2015), EU air transport liberalisation: process, impacts and future considerations. Discussion Paper 2015-04, International Transport Forum/OECD, www.itf-oecd.org/sites/default/files/docs/dp201504.pdf and

M. Landru et al., (2021), Study on the economic developments of the EU Air Transport Market, **ONLY pp. 15 – 30** ; see www.ec.europa.eu/en/publication-detail/-/publication/41452579-7005-11eb-9ac9-01aa75ed71a1 (EGIS & SEO) for the Commission

[*recommended*] European Commission, 2023, Report on the evaluation of EASA, COM (2023)524 of 12 Sept 2023, based on a study by RAMBOLL and TPR (Un.y of Antwerp), HTTPS://EUR-LEX.EUROPA.EU/LEGAL-CONTENT/EN/TXT/?URI=CELEX%3A52023DC0525

EU AIRLINES [A4E], 2024, ACHIEVING A COMPETITIVE AND EFFICIENT AVIATION INDUSTRY IN EUROPE, APRIL, POSITION PAPER, WWW.A4E.EU/PUBLICATIONS/ACHIEVING-A-COMPETITIVE-AND-EFFICIENT-AVIATION-INDUSTRY-IN-EUROPE

European Commission, 2025, COM unveils the Sustainable Transport Investment plan, on renewable and low-carbon-fuels for aviation, 5 nov 2025, https://transport.ec.europa.eu/news-event/news/commission-unveils-sustainable-transport-investment-plan-strategic-approach-boost-renewable

8. **A competitive internal market for (freight) rail**

[*recommended*] Y. Crozet & C. Nash (2019), A decarbonised transport system, Brussels, September, www.cerre.eu/wo-content/uploads/2020/05/cerre_whitepaper2024_mobility-1.pdf [only pp. 1-14]

[*recommended*] C. Nash & A. Smith (2019), The future of rail, regulation and competition for an innovative industry, CERRE Issue paper, February, 10 pp.,

www.cerre.eu/wp-content/uploads/2020/05/190201_IssuePaper_RailInnovation_Final-compressed.pdf

M. Castelletti (2021), Rail's role in the age of decarbonisation, *Network Industries Quarterly*, Vol. 23,4, December, pp. 6 – 9, https://www.network-industries.org/2021/12/16european-rail-more-central-than-ever/

EFRA (2022), The European Railfreight market, competitive analysis and recommendations, April, www.efrarail.eu/uploads/The%20European%20Rail%20Freight%20Market%20-%20Competitive%20Analysis%20and%20Recommendations-1649762289.pdf ; esp.ch. 3 (pp. 26-43

[*recommended*] Y. Crozet et al. (2023), The promises of European rail, Brussels, CERRE, June, www.cerre.eu (focuses on the infamous 'modal shift' between less trucking and more freight rail).

[*recommended*] Independent Rail Regulators Group (2025), 13th Annual Market Monitoring Report (covering the year 2023), see www.irg-rail.eu/irg/documents/market-monitoring/536,2025.html

6. EVALUATION

First examination session:

The course will be evaluated with a closed-book written exam. Dictionaries are allowed in the exam room.

The exam may consists of 4 or 5 sections – in most, students will be asked questions with choice and answer a specified number of questions or sub-questions. The grade for the exam constitutes 90 % of the course mark. The remaining 10 % comes from an assessment of the student presentation on a pass/fail basis.

Second examination session:

Article 18a of the Study Regulation applies.

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 (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.