esade

TEACHING GUIDE - 2026-2027

Industrial Strategy in the Techno-Economic Race

UGRA_016587

Departments	Department of International, European Union and Comparative Law
Teaching Languages	English
ECTS	4
Teacher responsible	Leandro Urbano Tornero - leandro.urbano@esade.edu

Course Goals

This elective course aims to give students a 360-degree perspective on the context of the unfolding Techno-Economic Race, becoming familiar with the key markets and technologies, and equipped with the decision-maker toolkit to shape industrial policies and business strategies in this context. At the end of this course, students will be prepared to comment on the global Techno-Economic Race and to become effective agents of change in its context – more prepared to shape their subsequent learning and professional development journey by pursuing specific research and applied projects as well as targeted career opportunities across government, entrepreneurship, companies, finance or advisory services.

Specifically, the Industrial Strategy elective will equip students with:

1. Global perspectives: global trends, rationales for and against industrial strategy, overview of key technologies and markets involved from AI and quantum computing through cleantech and renewable energy to shipbuilding, overview of regional approaches, and library of cases analyzing success stories and lessons learnt from the US, EU, China, South Korea, Indonesia, Peru, Costa Rica, etc.
2. Tools: latest frameworks to frame industrial strategy decisions (e.g., US national security priorities, World Bank 3i transformations, value chain capability analysis) and tools to enable context-setting and effective recommendations (Atlas of Economic Complexity, New Industrial Policy Observatory, overview of policy tools, Harvard Kennedy School policy triangle, business cases, and strategic options and recommendations briefs)
3. Skills: the course combines short context-setting lectures with case studies to shape a board-room-like learning experience akin to Harvard Business School case method approach. Students will be constantly engaged with case discussions and on-the-spot briefs, expected to be prepared and deliver sharp recommendations on specific policy and strategy questions

throughout the sessions. Faculty will provide candid, constructive feedback for students to develop the ability to deliver rigorous analytics-based, effective recommendations. Finally, students will familiarize themselves with a specific technology or market and country context, and build policy and business strategy recommendations for a real-world player of their choice – developing project-based effective teaming, analytics and presentation skills with the option to publish the perspectives elaborated.

Teaching methodology

The course combines 6 learning methods:

1. Lectures: overview of global perspectives, regional approaches, key frameworks and concepts, and recap of key learnings from previous sessions.
2. Readings: students are provided with a short but highly relevant reading list for each class. It is in the best interest of students to familiarize themselves with the reading list content as it will be the basis for discussion and evaluation.
3. Guest speakers: students will have the chance to interact with world-class policy and business thought leaders during the course, learning about their real-world experiences in industrial strategy, giving ample space for Q&A.
4. On-the-spot briefs: during lectures, students should be thoroughly prepared, having read and reviewed short but critical preparatory materials, and be ready to provide short and sharp strategic recommendations on a given policy or business “challenge” to be posed by the lecturer. Students may be asked to volunteer or be ready to be cold called. The goal of on-the-spot briefs is not grading students, they are not formally evaluated. They aim to promote preparation, participation and to give students the opportunity to hone recommendation and presentation skills with live feedback from colleagues and faculty.
5. Recommendation Briefs: students will be asked to prepare two policy and business Recommendation Briefs, one at the end of each week. The first Brief will be individual and the last one in groups of 5-6 students. Two sessions will devote time to the live presentation and discussion of student Briefs. Briefs are 3-page written memos that outline industrial strategy options and recommendations for a chosen technology or market in a specific country context, addressed to a real policy or business stakeholder. The first, Individual Recommendation Brief will focus on a country or state, leveraging the tools of economic complexity and overall industrial strategy learnt by the end of the first week. The second, Group Recommendation Brief will focus on a specific cluster within the country context. For example, a group may choose to write a Brief on strategic priorities to develop AI data centers in Spain, addressed to the Minister of Economy. Another may choose to outline strategic priorities to capture mineral-related green growth opportunities around the development of the Chancay Port in Peru, addressed to the CEO of Volcan Minera, a key zinc mining player and co-developer of the Chancay Port with the Chinese COSCO Shipping. General guidance on brief elaboration and examples will be provided, part of the first lecture will be

devoted to brief elaboration best practices, and while students will be free to choose any technology, market, geography and “client” for their Recommendation Briefs, a list of options will be provided for both exercises.

6. Final Presentations: together with the second, group-based Recommendation Brief, students will be working in groups of 5 to 6 to prepare and present a 7-10-slide, 5-7-minute slide presentation. The last session of the course will be devoted to these final presentations, with extensive feedback and Q&A.

The main learning site for this course is the classroom, which will be far more dynamic than a regular lecture. This requires compromise: students should be present and ready to intervene, volunteering and being cold called. Students may use laptops, tablets and any other digital devices to support the in-classroom learning experience. But they should expect being cold called if distracted or otherwise hindering the learning environment.

Students are not barred from using AI and any productivity-enhancing tools, and are encouraged to leverage them to prepare their classroom interventions and Recommendation Briefs, as they would in a real working environment. As would happen in a cabinet meeting or a board room, however, students are expected to master the content, and will be required to flexibly address questions and challenges from faculty and colleagues with content depth and dexterity.

Bibliography

Michel E. Porter, The Competitive Advantage of Nations, Free Press, 0684841479 (Book)

Cesar A. Hidalgo, The Infinite Alphabet: And the Laws of Knowledge, Penguin (Book)
Ricardo Hausmann, Cesar A. Hidalgo, The Atlas of Economic Complexity: Mapping Paths to Prosperity, MIT Press (Book)

Réka Juhász, Nathan Lane and Dani Rodrik, The New Economics of Industrial Policy (2024) (Article)
Mariana Mazzucato and Dani Rodrik, Industrial Policy with Conditionalities: A Taxonomy and Sample Cases (Article)

Amir Lebdioui, Survival of the Greenest, Cambridge University Press (Book)
Andrew Cainey and Michael Page, Xiconomics: What China's Dual Circulation Strategy Means for Global Business (Book)

Dan Wang, Breakneck: China's Quest to Engineer the Future (Book)

World Bank Group, World Development Report 2024 THE MIDDLE-INCOME TRAP (Article)

Ricardo Hausmann, Dani Rodrik, Andres Velasco, Growth Diagnostics (2008) (Article)

Leandro Urbano et al., Green Growth Ecosystems: Practical Lessons for Policymakers (Article)

Leandro Urbano et al., A Pivotal Moment for US Energy and Industrial Innovation (Article)

Leandro Urbano et al., The Draghi Report and the Future of the EU’s Industrial Strategy (Article)

Activities

Case study resolution
Case Discussion - Intel in Costa Rica.

Case Discussion - Indonesia EV industrial strategy.

Case Discussion - Emergence of commercial space cases: NASA, SpaceX and additive manufacturing.

Interaction with visiting guest professionals

Guest speaker - Victoria Suarez, Harvard Growth Lab: Public and private approaches to industrial strategy.

Guest speaker - Fernando Martín, IMD and Global Trade Alert: Industrial policy trends and evidence.

Guest speaker - Andrew Cainey, author "Xiconomics", RUSI Senior Fellow, BCG Senior Advisor: China's approach to industrial strategy and the techno-economic race.

Guest speaker - Juan Luis Manfredi, UCLM International Affairs Professor, Principe de Asturias Professor at Georgetown University (2021-24): US and EU, politics, geopolitics and economic cooperation/competition.

Guest speaker - Andres Valenciano, CEO at Democracia+, former Trade Minister of Costa Rica, former CEO of UN ECLAC Washington DC Office: Industrial policy in Latin America, the case of Costa Rica (attracting Intel, advanced manufacturing players, investment promotion best practices, special economic zones and clusters).

Guest speaker - Martin Cassinelli, Assistant Director at Atlantic Council (Washington DC): nearshoring context in the US - Latin America and the Caribbean context, priorities for public and private players, success cases, failures and learnings, and the inside of Washington DC.

Guest speaker - Alejandra Guardia, Associate Investment Officer at International Finance Corporation (World Bank), Green Growth Professor at Universidad del Pacifico: Green Growth priorities and strategies across the Pacific, energy and infrastructure, industrial policy architecture, mobilizing finance and private sector players.

Guest speaker - Daniel Rodan, PhD in Physics at MIT, Quantum Science and Engineering Lead North America at Qblox: MIT innovation ecosystem experience, fundamentals of Deep Tech innovation from the perspective of science, bridging science and markets, quantum outlook and opportunities, building a quantum business in interaction with US industrial policy (Project Genesis and others).

Project development and presentation

Individual Recommendation Brief: country/state industrial strategy.

Group Recommendation Brief and Final Presentation: cluster industrial strategy.

Content

#	Topic
1	Introduction: Brief introduction to the course structure, methods, and overview of the field of industrial strategy from public and private perspectives.
2	Industrial Policy: Fundamentals of industrial policy. History of past economic miracles, frameworks and rationale for industrial policy, tools, implementation, comparative approaches among the US, EU, China and Global South challenger nations, challenges and opportunities
3	Industrial Business Strategy: Fundamentals of business strategy in the building of new and/or critical industries and technologies. Business case basics (strategy, Capex, Opex, ROI), competitive advantage, Porter's diamond, supplier networks and clusters, innovation cycle and valleys of death, site selection basics.
4	Applications - Clusters and Site-Based Advantage: Nearshoring, clusters, special economic zones and industrial parks. The case of Costa Rica from Intel to an advanced manufacturing hub, with former Trade Minister and live case discussion.
5	Applications - Green Growth: Overview of energy transition landscape and technologies,

#	Topic
5	Green Growth frameworks, natural resources and the Dutch Disease, infrastructure and energy, green industrial policy, green clusters, climate finance, transfer of technology, long-term innovation capabilities, success cases, failures and lessons learnt, applications to Latin America and Southeast Asia.
6	Applications - Frontier Technologies: Fundamentals of Deep Tech, techno-economic race context in depth, national security, overview of frontier sectors: AI, quantum, nuclear fusion, critical infra (subsea cables, data centers), new space, polar ecosystems, subsea mining; industrial strategy for the frontier, innovation ecosystems - MIT testimonial, quantum case study, new space case study.
7	Final Group Presentations

Assessment

Tool	Assessment tool	Category	Weight %
Individual or team exercises		Ordinary round	30.00%
Group project		Ordinary round	60.00%
In-class analysis and discussion of issues		Ordinary round	10.00%

PROGRAMS

- BITLASI22-Bachelor in Transformational Leadership and Social Impact (Undergraduates: Business)
  - BITLASI22 Year 4 (Mandatory)
  - BITLASI22 Year 1 (Mandatory)
- GBD20-Double Degree in Business Administration and Law (Undergraduates: Law)
  - GBD20 Year 4 (Optative)
  - GBD20 Year 2 (Optative)
  - GBD20 Year 5 (Optative)
  - GBD20 Year 3 (Optative)
  - GBD20 Year 1 (Optative)
- GBD23-Double Degree in Business Administration and Law (Undergraduates: Law)
  - GBD23 Year 1 (Optative)
  - GBD23 Year 4 (Optative)
  - GBD23 Year 2 (Optative)
  - GBD23 Year 5 (Optative)
  - GBD23 Year 3 (Optative)
- GBD25-Double Degree in Business Administration and Law (Undergraduates: Law)
  - GBD25 Year 1 (Mandatory)
  - GBD25 Year 4 (Mandatory)
  - GBD25 Year 2 (Mandatory)
  - GBD25 Year 5 (Mandatory)
  - GBD25 Year 3 (Mandatory)
- GDL20-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)
  - GDL20 Year 1 (Optative)
  - GDL20 Year 4 (Optative)
  - GDL20 Year 2 (Optative)
  - GDL20 Year 5 (Optative)
  - GDL20 Year 3 (Optative)
- GDL23-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)
  - GDL23 Year 1 (Optative)
  - GDL23 Year 4 (Optative)
  - GDL23 Year 2 (Optative)
  - GDL23 Year 5 (Optative)
  - GDL23 Year 3 (Optative)
- GDL25-Double Degree in Law and Global Governance, Economics and Legal Order (Undergraduates: Law)
  - GDL25 Year 1 (Optative)
  - GDL25 Year 4 (Optative)
  - GDL25 Year 2 (Optative)
  - GDL25 Year 5 (Optative)
  - GDL25 Year 3 (Optative)
- GED20-Bachelor in Law (Undergraduates: Law)
  - GED20 Year 1 (Optative)
  - GED20 Year 4 (Optative)
  - GED20 Year 2 (Optative)

GED20 Year 3 (Optative)

GED25-Bachelor in Law (Undergraduates: Law)
- GED25 Year 4 (Optative)
- GED25 Year 2 (Optative)
- GED25 Year 3 (Optative)
- GED25 Year 1 (Optative)

GEL19-Bachelor in Global Governance, Economics and Legal Order (Undergraduates: Law)
- GEL19 Year 3 (Optative)
- GEL19 Year 1 (Optative)
- GEL19 Year 4 (Optative)
- GEL19 Year 2 (Optative)

GEL23-Bachelor in Global Governance, Economics and Legal Order (Undergraduates: Law)
- GEL23 Year 1 (Optative)
- GEL23 Year 4 (Optative)
- GEL23 Year 2 (Optative)
- GEL23 Year 3 (Optative)

GEL25-Bachelor in Global Governance, Economics and Legal Order (Undergraduates: Law)
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- GEL25 Year 4 (Optative)