



Syllabus

Academic Year	2026/2027
Program	Data Science and Management
Course	Digital Ecosystems
Term	II semester
Year	1
SSD	SECS P/10
Credits	6

INSTRUCTIONAL GOALS

The course reviews and analyzes current theories of ecosystems in the fields of Information Systems, Organization Studies and Business Strategy and Innovation. Much of current ecosystem formation and the business relationships it entails evolve around the production, sharing, analysis and exchange of a variety of resources among which data figure prominently. The course confronts several perspectives on ecosystems and examines the technological foundations on the basis of which ecosystems are built, maintained and governed. Among the key objectives of the course is 1) provide an in-depth understanding of the wider economic and business environment within which ecosystems develop, 2) show the contribution which information and communication technologies make to the establishment of ecosystems and 3) to analyze the practices by which data are generated, exchanged, commercialized and, more widely, involved in the dealings of ecosystem participants.

INTENDED LEARNING OUTCOMES

They describe what a learner is expected to know, understand and be able to demonstrate after completion of a learning path.

Knowledge and understanding: The course provides key concepts, frameworks and perspectives for the analysis of digital ecosystems and the business environments in which they thrive. An important objective is to provide an understanding of what ecosystems are and how they form, develop and decline, and give students the analytic tools that help map, assess and control the operations of ecosystems and ecosystem participants.

Applying knowledge and understanding: On successful completion of the course students will be able to:

- Identify the forces (e.g., network effects) and processes (e.g., complementarities, data complementarities) that drive digital ecosystem formation.
- Link resource exchanges and practices of data generation and use to the forces and processes that drive ecosystem formation.
- Describe technological architectures and functionalities that enable the building of links, data generation and sharing and map them to the development of business relationships.
- Link ecosystems and the data practices underlying them to business objectives and processes.



Making judgements: Students will be able to link the technological processes and types of data that drive ecosystem formation to business needs and the services which ecosystem participants produce in conjunction with one another. The course will use several cases of ecosystems (including Facebook, Siemens and TripAdvisor) that illustrate how conceptual ideas and tools are linked to real life situations and help students develop, tune and try out their analytical skills.

Communication skills: The course aims at providing students the key terms on the subject and acquaint them with the vocabularies, concepts and descriptive resources used in the analysis of digital ecosystems. The course will pay due emphasis on active student participation, class talk, oral presentations but also written assignments.

Learning skills: The course entails a good deal of analytic techniques that are expected to give students the ability to analyze and map the technological and business forces that drive ecosystem formation. Blending workshop and practical cases the course will furthermore give students the necessary skills to apply knowledge and understanding to particular cases.

Pre-requisites	Basic knowledge of Information Systems, Organization and Management/Business Studies
Course content	<ul style="list-style-type: none">• Course Introduction: content overview, participation rules, exam etc• The Advent of Ecosystems• Ecosystem Formation and Governance• Platforms and Ecosystems• The Dynamics of Platforms and Ecosystems• Architecture of Platforms and Ecosystems: Modularity• Boundary Resources and Ecosystems• Industrial Platform Ecosystems• Data, Platforms and Ecosystems• Data Ecosystems and Infrastructures• Data and Value• Course Overview
Reference Books	<ul style="list-style-type: none">• Slides set of the course and other teaching materials (on Luiss Learn).
Teaching Methods	<ul style="list-style-type: none">• The course is based on lectures and in-class exercises and illustrations organized around each one of the lecture topics. The topics cover key ideas and perspectives on ecosystems base on widely acclaimed readings while the classes entail additional material and cases that will exemplify the key ideas presented on each lecture. Students are expected to actively participate in the classes through questions, practical and theoretical elaborations and other contributions.
Assessment	Assessment is made of: <ul style="list-style-type: none">• class participation 1/3• written individual assignment 1/3• oral 1/3