

Degree programme	Type	Course
Business and Information Technology	OP	4

Contact lecturer

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Teaching staff

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

It is recommended to have previously taken:

- Introduction to Information Systems (102148)
- Strategic Business Management (102181)
- Corporate Software Development Projects (102175)

Objectives

- Understand the role of intelligent technologies in the digital transformation of organizations, including their application in business processes, decision-making and automation.
- Analyze the principles and models of enterprise architecture, and understand how this structure supports the alignment between business objectives, business capabilities and technological capabilities.
- Identify and evaluate emerging technologies and assess their potential impact on business strategy and operations.
- Promote a critical and ethical view on the use of intelligent technologies, taking into account aspects such as privacy, security, transparency and sustainability.
- Develop skills to communicate and justify technological decisions to both technical and business interlocutors, using language and tools appropriate to each profile.
- Experiment with practical cases and current tools to understand how intelligent technologies can be applied in the real context of a business architecture.

Learning outcomes

- CM24 (Configure the architecture of an information system that supports an organisation in an integrated manner.) Configure the architecture of an information system that supports an organisation in an integrated manner.
- KM23 (Identify the contributions of innovations in the market of integrated management systems.) Identify the contributions of innovations in the market of integrated management systems.
- SM15 (Interpret the impact and effects on the organisation of innovations and updates in integrated market management systems.) Interpret the impact and effects on the organisation of innovations and updates in integrated market management systems.

Contents

Topic 1. Enterprise Architecture: Foundations for Transformation

- What is enterprise architecture and what is it used for
- Models and frameworks
- OKR, KPI, Business Capabilities
- Architecture layers: business, data, applications, and technology
- Architecture governance and strategic role
- Architecture as a tool for alignment between IT and business

Topic 2. Intelligent Technologies and Paradigm Shift

- Introduction to artificial intelligence: basic concepts, capabilities, and limits
- Business applications of AI: predictive analytics, NLP, computer vision, agents, and assistants
- AI and decision-making: support and automation
- From data to intelligence: information flow and integration with enterprise systems
- Ethical and social considerations: transparency, privacy, bias, sustainability

Topic 3. Hyperautomation as a Driver of Efficiency

- What is hyperautomation: beyond RPA
- Process Mining, BPA, flow orchestration, and low-code/no-code
- Integration with AI: intelligent agents and cognitive automation

- Real use cases: operations, customer service, compliance, logistics
- Market tools.

Topic 4. Cloud Computing as an Agility Platform

- Introduction to the cloud model: IaaS, PaaS, CaaS, FaaS, SaaS , serverless
- Hybrid and multi-cloud architectures
- Cloud benefits and risks: scalability, costs, security, dependency
- Integration of cloud with AI and enterprise architecture tools
- Main providers

Topic 5. Evaluation and Selection of Emerging Technologies

- Methodologies to analyze emerging technologies: Hype Cycle, Technology Radar
- Selection criteria: technical feasibility, strategic alignment, cost/benefit, impact
- Detection of duplications, silos, and reuse opportunities
- Communicating technological decisions to different profiles (technical and business)
- Practical cases of technological decision-making in real contexts

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Lectures	30	1.2	CM24, KM23, SM15
Tutorials	15	0.6	CM24, KM23, SM15
Study cases	15	0.6	CM24, KM23, SM15
Drafting of cases, exercises and papers	52	2.08	CM24, KM23, SM15
Independent study	35	1.4	

Lectures and Case Studies

The basic content needed by students to introduce themselves to some of the topics covered in the course will be presented. At the same time, possible ways to complete or deepen the information received in these sessions will be suggested. During the sessions, the case method may also be used as a teaching tool, depending on the level of student participation.

The classes are designed to be dynamic and participative, offering opportunities to experiment with technology in order to validate examples. Therefore, student engagement and participation during lectures is considered essential.

Problem-Based Learning (PBL)

Part of the course will use the PBL methodology:

- Students will work on a practical case using accessible technology to develop an MVP (Minimum Viable Product) selected by each group, and the work will conclude with a presentation of the results.
- The second case will be theoretical and research-oriented, highlighting the changes in organizations and society due to the availability of intelligent technologies.

Hackathon

One of the classes will be dedicated to building and presenting a game created in teams, using *prompting* and code assistants.

Communication Channel

The use of the Virtual Campus will be prioritized, and unless there is a technical failure, it will be the only official means of communication.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Projects/Practicals and Presentations	40	0	0	CM24, KM23, SM15
Exam	50	3	0.12	CM24, KM23, SM15
Contributions during the lectures	10	0	0	CM24, KM23, SM15

Course Assessment

The assessment of the course will be carried out progressively and continuously throughout the semester. The evaluation system is based on the following learning evidence:

- Individual and small-group contributions made during the in-person sessions of the course, encouraging active student participation in their own learning process.
- The submission and oral presentation of assignments or practicals related to specific problems or projects worked on during the course, with the aim of monitoring each student's progress in understanding and using the tools covered in the subject, while also fostering the acquisition of transversal skills.
- A final exam, held during the last weeks of the semester, to support the consolidation of the material

covered throughout the course.

Assessment Criteria

The final grade for the course will be obtained from the weighted sum of the evaluations of the different pieces of evidence, considering that each of the three components has a different specific weight:

10% (contributions) + 40% (report/practical presentations) + 50% (final exam)

To apply this weighted sum, it is required that each component has a positive score, and that the grade obtained in the final exam is equal to or higher than 3.5.

Not Assessable

A student who completes at least one component of the continuous assessment can no longer be considered as Not Assessable.

The completion of assessment activities is subject to the provisions set out in this course guide and in the "Policy of the School of Economics and Business on the Detection of Irregularities during Assessment Activities", which regulates the conditions under which assessment tasks are conducted and the procedures applicable in cases where indications of irregularities are detected. Students are encouraged to consult the policy.

Bibliography

- Jeanne W. Ross, Peter Weill & David C. Robertson (2006) - Enterprise Architecture as Strategy: Creating a Foundation for Business Execution ISBN: 9781591398394
- Marc Lankhorst (ed.) (2017) - Enterprise Architecture at Work: Modelling, Communication and Analysis (4th ed.) ISBN: 9783662539323
- Thomas Erl (2013) - Cloud Computing: Concepts, Technology & Architecture ISBN: 9780133387520
- Wil van der Aalst (2016) - Process Mining: Data Science in Action (2nd ed.) ISBN: 9783662498514
- Gene Kim, Jez Humble, Patrick Debois & John Willis (2016) - The DevOps Handbook: How to Create World-Class Agility, Reliability, & Security in Technology Organizations ISBN: 9781942788003
- Nicole Forsgren, Jez Humble & Gene Kim (2018) - Accelerate: The Science of Lean Software and DevOps ISBN: 9781942788331
- Gregor Hohpe, Michele Danieli, Jean-François Landreau & Tahir Hashmi (2020) - Cloud Strategy: A Decision-based Approach to Successful Cloud Migration ISBN: 9798665253046
- Paul Harmon (2019) - Business Process Change: A Business Process Management Guide for Managers and Process Professionals (4th ed.) ISBN: 9780128158470
- Navdeep Singh Gill, Jagreet Kaur & Suryakant (2023) - Hyperautomation with Generative AI: Learn How Hyperautomation and Generative AI Can Help You Transform Your Business and Create New Value ISBN: 9789355518590

Software

It is recommended to have installed or be registered:

- Visual Studio Code (install): <https://code.visualstudio.com/>
- Github: create a user at <https://github.com> and register for the student program <https://github.com/education/students>

Other software or services that can be used:

- Camunda: <https://camunda.com/>
- n8n: <https://n8n.io/>
- Microsoft Azure for Students: <https://azure.microsoft.com/es-es/free/students/>

- Google Cloud for Students: <https://cloud.google.com/edu/students>
- AWS Educate: <https://www.awseducate.com/>

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TE) Theory	20	Catalan	first semester	afternoon
(PAUL) Classroom practices	201	Catalan	first semester	afternoon