FINTECH IN AI TIMES: FROM IDEAS TO SUCCESS

Grado en Computación e Inteligencia Artificial / Bachelor in Computer Science and Artificial Intelligence BCSAI SEP-2025
FAIT-CSAI.4.M.A

Area Computer Science
Number of sessions: 30
Academic year: 25-26
Degree course: FOURTH
Number of credits: 6.0
Semester: 1º
Category: OPTIONAL
Language: English

Professor: **ANA MARIA GLAVAN**

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Ana Maria holds a Ph.D. in Mathematical Engineering from Carlos III University of Madrid. She taught different topics of Mathematics at Carlos III University, University of Navarra and IE University. Her actual research interests are on mathematical analysis and numerical simulations of biological and medical systems, and new trends in the fintech industry.

Academic Qualifications

- Ph.D. in Mathematical Engineering, Carlos III University, 2016
- Master in Biosensors for Environmental Monitoring, Perpignan University and Bucharest University, 2003
- B.Sc. in Chemistry, Bucharest University, 2001

Academic Experience

- Adjunct Professor, IE Business School, 2016-present
- Invited Professor, Carlos III University, Ph.D. Programme in Mathematical Engineering, 2016-2017
- Assistant Professor, University of Navarra, 2010-2012
- Teaching Assistant, Carlos III University, 2004-2009
- Research Assistant, BIOMEM, Centre de Phytopharmacie, 2002-2003

Fields of Interest

- Computational methods in Biology and Finance
- Applied and computational mathematics
- Numerical modelling algorithms

Office Hours

Office hours will be on request. Please contact at:

aglavan@faculty.ie.edu

PREREQUISITES

No prior experience in fintech is required. The course is suitable for students interested in financial technology, AI applications, entrepreneurship, and innovation.

SUBJECT DESCRIPTION

Fintech is not just a fashionable word today, but it describes an industry providing the market with innovative adding-value solutions. Newly created Fintech companies are surpassing traditional financial actors with hundreds of years of history. Important financial institutions are acquiring Fintech companies or analysing possible alliances with them. Moreover, disruptive technological innovations are revealed frequently and immediately adopted. Fintech players are improving the financial inclusion around the globe, and this is just one of their roles from the everyday more important CSR/ESG perspective. Fintech startups, already disruptive business models, emerged during last years as solutions for democratizing finance. However, the industry today faces a once-in-a-lifetime opportunity: AI will further democratize the field, and new opportunities are ready for visionary minds. We assist to the evolution of Fintech 3.0 into Fintech 4.0. On top of it, recent amendments to regulation (e.g. Reg (EU) 2024/886 entering into force in April 2025) will give Fintech companies access to new lines of business.

Within this scenery, even the most skeptical ones cannot neglect the importance of this new industry. As a future manager or entrepreneur, it is today a must to be informed about these advances and to be prepared for the next opportunities.

This course realizes a 360º overview of the Fintech industry, from its origins until nowadays. Through theoretical concepts, cases, models, technological background, but especially from the real business cases of successful companies, the Fintech landscape will be contemplated from a mix of financial, managerial and technical perspectives.

Our approach:

- **The method.** Using successful Fintechs stories and invited speakers, we will leverage on core finance concepts (like portfolio selection and wealth management, credit scoring and lending, insurance products design, money market functioning) and will understand how technology fueled the creation of Fintech 3.0 generation of startups.
- **Let's build a solid base first.** Why Fintechs appeared? We will critically analyze the traditional financial system's inefficiencies and gaps leading to the flourishing of different generations of fintech companies in recent years. This is the fundamental step for learning to detect future business opportunities and gaps.
- **AI opens new opportunities**. It's your moment! Be creative! The way of doing business drastically changed with the emergence of AI tools. Nowadays, when launching a new startup, your idea matters more than your technical skills. With this more democratic and competitive environment in mind, we will train ourselves to move one step further and detect new Fintech 4.0 business opportunities.
- **Pitch your fintech business idea!** The culmination of the course will be the presentation of your fintech business idea.

LEARNING OBJECTIVES

The topic provides an overview of the Fintech trends and opportunities, combining a financial and strategic perspective with a technical description of the disruptive technological innovations.

By discussing real cases of successful Fintech companies, the students will be able to identify and analyse the last technologies, the innovations delivered and the cutting-edge business models employed: in a single world, the way they revolutionize finance.

As secondary objectives of this topic, we will discuss the application of AI to financial start-ups and we will introduce the Blockchain technology.

The students, as future managers and entrepreneurs, will develop a future vision allowing them to make strategic decisions within the actual financial environment. The skills developed and trained during this period will represent a valuable asset when starting or joining a new Fintech venture.

The course will combine theory with real-companies case studies, group homework and presentations. As successful Fintech companies are the result of activity of perfectly matching teams, the team-based problem solving is an important skill that we will emphasize.

The training culminates with "the elevator pitch": the final group presentations, where the teams will present their Fintech business proposals, after understanding all the theoretical background and overviewing the actual horizon of companies. The final presentation is an opportunity to practice your most valuable asset: the disrupting future entrepreneur profile that you have cultivated during last years at IE University, and to apply it to a very promising framework that is radically changing the way we understood the financial industry.

TEACHING METHODOLOGY

IE University teaching method is defined by its collaborative, active, and applied nature. Students actively participate in the whole process to build their knowledge and sharpen their skills. Professor's main role is to lead and guide students to achieve the learning objectives of the course. This is done by engaging in a diverse range of teaching techniques and different types of learning activities such as the following:

Learning Activity	**Weighting**	**Estimated time a student should dedicate to prepare for and participate in**
Lectures	30.0 %	45.0 hours
Discussions	10.0 %	15.0 hours
Exercises in class, Asynchronous sessions, Field Work	13.3 %	20.0 hours
Group work	20.0 %	30.0 hours
Individual studying	26.7 %	40.0 hours
TOTAL	100.0 %	150.0 hours

AI POLICY

In today's world, generative artificial intelligence (GenAI) is changing how we work, study and, in general, how we get things done. However, in the context of this course, the use of GenAI is not permitted, unless it is otherwise stated by the instructor. The use of GenAI tools would jeopardize the students' ability to acquire fundamental knowledge or skills of this course.

If a student is found to have used AI-generated content for any form of assessment, it will be considered academic misconduct, and the student might fail the respective assignment or the course.

PROGRAM

SESSION 1 (LIVE IN-PERSON)

Introduction

- Course Introduction
- What is “Fintech”?
- Today’s landscape: the Fintech boom, major players, lines of business

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 2: Financial Services and Fintech (Ver Bibliografía)

SESSION 2 (LIVE IN-PERSON)

Fintech Evolution in Time

- The Fintech origins. How has it evolved in time?
- The Fintech evolution stages
- Environmental conditions fueling the Fintech boom

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 2: Financial Services and Fintech (Ver Bibliografía)

SESSION 3 (LIVE IN-PERSON)

Fintech: reshaping the traditional financial industry

An overview of the Fintech universe, from the financial management perspective:

- Why was Fintech born?
- Which service does it aim to provide?
- The business model of a Fintech company
- Critical success factors for a Fintech initiative
- Fintech interaction with traditional actors
- Fintech firms’ classification and examples
- Fintech extended universe: Insurtech, Regtech, Wealthtech

Book Chapters: Nicoletti. The Future of FinTech: Integrating Finance and Technology in Financial Services. Ch. 3: Model and Classifications, Ch. 4: Fintech Innovation (Part 1), Ch. 5: Critical Success Factors, Ch. 6: Responses of Traditional Players (See Bibliography)

SESSION 4 (LIVE IN-PERSON)

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Book Chapters: Nicoletti. The Future of FinTech: Integrating Finance and Technology in Financial Services. Ch. 3: Model and Classifications, Ch. 4: Fintech Innovation (Part 1), Ch. 5: Critical Success Factors, Ch. 6: Responses of Traditional Players (See Bibliography)
Article: Cutting through the Fog: Finding a Future with Fintech (HBS UV7225-PDF-ENG)

SESSION 5 (LIVE IN-PERSON)

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Article: Elixir: A Fintech Banking Solution for Millennials (HBS W18578-PDF-ENG)
Book Chapters: Nicoletti. The Future of FinTech: Integrating Finance and Technology in Financial Services. Ch. 3: Model and Classifications, Ch. 4: Fintech Innovation (Part 1), Ch. 5: Critical Success Factors, Ch. 6: Responses of Traditional Players (See Bibliography)

SESSION 6 (LIVE IN-PERSON)

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Book Chapters: Nicoletti. The Future of FinTech: Integrating Finance and Technology in Financial Services. Ch. 3: Model and Classifications, Ch. 4: Fintech Innovation (Part 1), Ch. 5: Critical Success Factors, Ch. 6: Responses of Traditional Players (See Bibliography)
Article: Kueski: Revolutionizing Consumer Credit in Mexico (HBS KE1026-PDF-ENG)

SESSION 7 (LIVE IN-PERSON)

Fintech: reshaping the traditional financial industry

An overview of the Fintech universe, from the financial management perspective:

- Why was Fintech born?
- Which service does it aim to provide?
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- Critical success factors for a Fintech initiative
- Fintech interaction with traditional actors
- Fintech firms' classification and examples
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Book Chapters: Nicoletti. The Future of FinTech: Integrating Finance and Technology in Financial Services. Ch. 3: Model and Classifications, Ch. 4: Fintech Innovation (Part 1), Ch. 5: Critical Success Factors, Ch. 6: Responses of Traditional Players (See Bibliography)

SESSION 8 (LIVE IN-PERSON)

Wealth Management, Robo-advising and Credit Risk Management

- Traditional approach
- Gaps and inefficiencies

SESSION 9 (LIVE IN-PERSON)

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- Traditional approach
- Gaps and inefficiencies

SESSION 11 (LIVE IN-PERSON)

Invited Speaker: How have we built our successful robo-advising company? Lessons from successful entrepreneurs: shifting from traditional finance to technology fueled management

SESSION 12 (LIVE IN-PERSON)

Fintech and Financial Inclusion

- Fintech as an opportunity for underserved public

SESSION 13 (LIVE IN-PERSON)

Fintech opportunities for new mandatory non-financial ESG reporting/compliance frameworks

- Overview of the regulatory framework
- Let's detect the opportunities
- Fintechs doing this

SESSION 14 (LIVE IN-PERSON)

Invited Speaker: How have we built our sustainability/ESG Greentech (regtech) company? Lessons from successful entrepreneurs

SESSION 15 (LIVE IN-PERSON)

Midterm Test

SESSION 16 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 1

An overview of the technological innovations that have impacted the financial industry:

- Big Data, Data Analytics, IoT
- Cloud-computing
- API-fication
- Embedded Sensors
- Mobility

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 4: Fintech Innovation (Ver Bibliografía)

SESSION 17 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 1

An overview of the technological innovations that have impacted the financial industry:

- Big Data, Data Analytics, IoT
- Cloud-computing
- API-fication
- Embedded Sensors
- Mobility

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 4: Fintech Innovation (Ver Bibliografía)

SESSION 18 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 2

An overview of the technological innovations that have impacted the financial industry:

- Introduction to Blockchain
- Blockchain as Infrastructure in Financial Services
- Cybersecurity in Blockchain

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 4: Fintech Innovation (Ver Bibliografía)

SESSION 19 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 2

An overview of the technological innovations that have impacted the financial industry:

- Cryptocurrencies
- Investments in cryptocurrencies
- Regulatory framework

SESSION 20 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 3

- Machine Learning/Deep Learning
- Examples of Fintechs leveraging this technology

SESSION 21 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 3

- Machine Learning/Deep Learning
- Examples of Fintechs leveraging this technology

SESSION 22 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 3

- Machine Learning/Deep Learning
- Present your Machine Learning/Deep Learning Fintech idea

SESSION 23 (LIVE IN-PERSON)

Recent Technology Disruptors. Part 4

- Fintech and AI agents
- Examples
- Applications

SESSION 24 (LIVE IN-PERSON)

Fintech and AI agents. Part 4

Present your Fintech AI idea!

Practical Case: JPMorgan Chase: Getting Future Ready with AI (HBS 325066-PDF-ENG)

SESSION 25 (LIVE IN-PERSON)

Fintech and Regulation

- Regulatory Sandboxes
- Regulations supporting the Fintech boom

Book Chapters: Bernardo Nicoletti. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. Chapter 7: Regulations (Ver Bibliografía)

SESSION 26 (LIVE IN-PERSON)

How to finance my Fintech business idea? Part 1

Funding stages and investor types
Equity, debt, and alternative instruments

Crowdfunding
Building a fintech-specific funding strategy
Practical Case: Managing AI Risks in Consumer Banking (HBS 124093-PDF-ENG)

SESSION 27 (LIVE IN-PERSON)

How to finance my Fintech business idea? Part 2

- Funding stages and investor types
- Equity, debt, and alternative instruments
- Crowdfunding
- Building a fintech-specific funding strategy

SESSION 28 (LIVE IN-PERSON)

Your Future within the Fintech universe: how to be well prepared for this challenge

Masterclass with Invited Speaker: Are you ready? New business opportunities, new skills required. Career Advices from a senior fintech entrepreneur

Practical Case: Finalaw: Fintech Platform Disrupting Real Estate Industry (HBS BAB791-PDF-ENG)

SESSION 29 (LIVE IN-PERSON)

Final Presentations. Pitch your Fintech Company. Part 1

SESSION 30 (LIVE IN-PERSON)

Final Presentations. Pitch your Fintech Company. Part 2

EVALUATION CRITERIA

criteria	percentage	Learning Objectives	Comments
Group Presentations	20 %		Intermediate Presentations
Class Participation	30 %		It consists of class discussions (10%) and case studies (20%)
Intermediate Tests	25 %		Midterm Test
Final Group Presentation	25 %		Final Presentation

<p>RE-SIT / RE-TAKE POLICY</p>

Grading for retakes will be subject to the following rules:

- Those students who failed the subject in the first regular period will have to do a retake in July (except those not complying with attendance rules who are banned from this possibility).
- Dates and location of the July retakes will be posted in advance and will not be changed. Please take this into consideration when planning your summer.
- The maximum grade that a student may obtain in the 2nd exam session is 8 out of 10.

BIBLIOGRAPHY

Recommended

- Bernardo Nicoletti. (2017). *The Future of FinTech: Integrating Finance and Technology in Financial Services.* 1ª. Palgrave Macmillan. ISBN 3319514148 (Digital)

BEHAVIOR RULES

Please, check the University's Code of Conduct here. The Program Director may provide further indications.

ATTENDANCE POLICY

Please, check the University's Attendance Policy here. The Program Director may provide further indications.

ETHICAL POLICY

Please, check the University's Ethics Code here. The Program Director may provide further indications.