



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
BLOC-526DL	Emerging topics in fintech	10
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
N/A	Digital Innovation	Fall/Spring
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Elective	Fintech	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
2 <sup>nd</sup> Cycle	Dr. Periklis Thivaïos	2 <sup>nd</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Corequisites</b>
Distance Learning	N/A	N/A

### Course Objectives:

The course aims to provide a critical understanding of fintech and disruption in the context of banking and insurance. It will cover the theoretical and practical underpinnings of fintech developments in the fields of credit, underwriting, digital currencies, and payments utilising case studies of successful and unsuccessful firms. The course will also focus on the practical applications of machine learning techniques to fintech use cases such as credit risk and insurance fraud assessment.

### Learning Outcomes:

After completion of the course students are expected to be able to:

- Understand the theoretical underpinnings of disruption and the means by which theory applies to fintech
- Develop a solid overview of fintech developments in the banking and insurance sector
- Critically understand the developments around digital currencies and cryptos and how they apply to the world of fintech
- Understand open banking (in the context of the EU's PSD 2 directive) and the potential for open innovation
- Develop an understanding of machine learning techniques and their practical application to fintech
- Critically assess the extent to which fintech has disrupted the financial system, the potential for future disruption and its limitations

**Course Content:**

- Introduction to fintech, innovation & disruption
  - A brief history of fintech and overview of recent developments
  - Theoretical underpinnings of disruption (from the Austrian School of Economics to today)
  - Distinguishing between disruption, innovation and novelty
- Fintech applications in banking and insurance
  - Understanding banking and insurance business models and scope of disruption
  - Developments in banking tech and insurtech, including potential future scenarios
- Digital money and cryptos for fintechs
  - History of monetary evolution and definitions
  - Introduction to monetary theory
  - The role of Central Banks in the monetary world
  - Central Bank issued Digital Currencies and cryptos
- Payments and open banking
  - Introduction to digital payments
  - The EU's PSD II: background and implications
  - Opportunities from open banking for fintechs
- Introduction to Machine Learning for fintech applications (credit modelling, fraud forecasting)
  - Non-technical introduction to machine learning
  - Supervised and unsupervised machine learning techniques for fintech
  - Case study: machine learning for credit modelling
  - Case study: machine learning for insurance fraud forecasting
- Fintech case studies (Neo Banks, Lending Club, Peer to Peer insurance, Libra)
  - Neo-banks (Revolut, N26, Monzo, Starling, Atom)
  - Non-bank financial tech providers (Tencent, Alibaba, Stripe, PayPal)
  - Peer to peer lending (Lending Club, Funding Circle)
  - Peer to peer insurance (Lemonade, Friendsurance, Guevara)
  - Libra and other developments
- The future of fintech, limitations and risks
  - Disruption, collaboration or just a fad?

**Learning Activities and Teaching Methods:**

Live sessions, forums, chats, quizzes, interactive exercises, case studies.

**Assessment Methods:**

Assignments, Exams

**Required Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
The future of fintech	Bernando Nicoletti	Palgrave Macmillan	2017	
The principles of Banking	Moorad Choudhry	Wiley	2012	
Pattern recognition and machine learning	Christopher Bishop	Springer	2006	

**Recommended Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Banking is not an industry, nor a business model,	Thivaivos P	BankNXT	2016	
Banks' maturity transformation: risk, reward and policy	Bologna P	European Systemic Risk Board	2018	
The relegated bank – a positive scenario?	Thivaivos P	Fintech Futures	2018	
The evolution of fintech: a new post crisis paradigm? 47, 4, pp 1271-1319	Arner et al	Georgetown Journal of International Law	2016	

The continuing muddles of monetary theory: a steadfast refusal to face facts pp 821-830	Goodhart C	Economica, 76	2006	
Money creation in the modern economy	Bank of England Quarterly Bulletin, Q1	Bank of England	2014	