



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
DFIN-513	Open Financial Systems	10
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
School of Business	Fall/Spring/Summer	None
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Elective	Finance	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
2 <sup>nd</sup> Cycle	Dr. Ifigenia Georgiou Dr. Apostolos Kourtis <b>Guest Lecturer</b> Mr. Antonis Polemitis <b>Teaching Assistant</b> Mr. Mark Wigmans	1 <sup>st</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Co-requisites</b>
Distance Learning	N/A	DFIN-511

### Course Objectives:

The main objective of the course is to provide an overview of the structure and mechanics of key infrastructural elements of the existing global financial system and regional variations. In parallel, the course will aim to identify how such systems could be implemented/complemented in open blockchain models that allow interoperability, and what challenges/opportunities does this create.

The main areas of financial infrastructure that will be covered in this course will be:

- Gross Settlement Systems; settlement under blockchain models.
- Money Transmission, Payment Services and E-Money; digital currencies as methods of payment and processing.
- Securities, Assets and Commodities trading and settlement; digital currency exchanges; hybrid and decentralized exchange systems.
- Insurance in conventional financial systems; decentralizing aspects of insurance, opportunities and challenges.
- Accounting, Auditing and financial controls in conventional systems; decentralizing accounting and taking advantage of the blockchain for transparency, corporate governance and regulation.

**Learning Outcomes:**

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

- Map a functional systems' architecture underlying the current financial system and explain if and how the system can be disrupted by using a blockchain architecture as well as assess the new risks and challenges.
- Write theory, evidence-based articles and reports on financial systems, whether traditional, blockchain based, or hybrid.
- Carry out analyses of the complete vertical process of how transactions take place in conventional and open financial systems, including the spread of risk at each stage and the types of risk users are exposed to.
- Apply concepts from existing financial systems and products to open and decentralized digital currency infrastructures.

**Course Content:**

- Overview: Key aspects of financial / payments architecture and emerging analogues in blockchain-based systems.
- Fund Transfers: Gross Settlement Systems (Target2, CHIPS, Fedwire) and their analogues in blockchain-based systems
- Fund Transfers: ACH / EFTS and their analogues in blockchain-based systems
- Money Transmitters, Credit and Debit Card Networks and their relevance in P2P systems
- Payment workflow and analogues in open blockchain based systems (Bitcoin)
- Securities, Assets and Commodities Settlement, Custodians, Clearinghouses
- Decentralizing Asset and security issuance and trading over an open blockchain system, hybrid solutions in practice and risks
- Insurance basics, differences from conventional financial markets (future and prediction markets) and structure of risk in insurance systems
- Decentralizing Insurance, viability of oracles, decentralizing insurance risk management and differences from conventional approaches
- Accounting, Financial Controls and Auditing in conventional systems
- Decentralizing financial controls and making the most of blockchain structures for transparency, accountability, governance and regulatory oversight
- Class Group Project submission.

**Learning Activities and Teaching Methods:**

Lectures, Live Discussions, Course Forum discussions

**Assessment Methods:**

Group Project, Final Exam

**Required Textbooks / Readings:**

Provided in course

**Recommended Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Tom Kokkola (Ed.)	The payment system	European Central Bank	2010	ISBN 978-92899-0632-6 (print) ISBN 978-92899-0633-3 (online)
Dominique Rambure, Alec Nacamuli	Payment Systems: From the Salt Mines to the Board Room		2008	ISBN-10: 0230202500 ISBN-13: 978-0230202504
Michael Simmons	Securities Operations: A Guide to Trade and Position Management		2002	ISBN-10: 0471497584   ISBN-13: 978-0471497585

**Selected Online Readings:**

<http://gendal.wordpress.com/2014/03/02/bitcoin-exchanges-are-morecentralised-than-traditional-exchanges-we-can-do-so-much-better-than-this/>

<http://gendal.wordpress.com/2014/01/05/a-simple-explanation-of-how-sharesmove-around-the-securities-settlement-system/>

<http://gendal.wordpress.com/2013/11/24/a-simple-explanation-of-how-moneymoves-around-the-banking-system/>