



**Degree: MBA      Department: Finance**

## **Blockchain, Crypto Currencies and Decentralized Finance 1231.7302**

**Prerequisites and parallel requirements: None**

**Semester Bet – 2023**

Section	Day	Hour	Final Task	Lecturer	Email
01	Sunday	18:45-21:30	Project (white paper and presentation)	Prof. Evgeny Lyandres	lyandres@tauex.tau.ac.il

**Office Hours:** By appointment

### **Course Units**

Course units: 2 course units

1 course unit = 4 ECTS units

The ECTS (European Credit Transfer and Accumulation System) is a framework defined by the European Commission to allow for unified recognition of student academic achievements from different countries.

**The course is limited to 30 students.**

### **Course Description**

This course will focus on one of the most disruptive technologies of the 21<sup>st</sup> century -- blockchain. We will begin by outlining the most important innovations in financial technology over the past two decades. We will then present the concept of blockchain, explain the technological fundamentals, discuss various types of blockchain, and focus on the Bitcoin blockchain. We will proceed by discussing various types of crypto assets, and will outline the institutional framework of the crypto market. We will then present the idea of smart contracts, while focusing on the Ethereum blockchain and mentioning other blockchains and cross-chain transfers. Then, we will begin our discussion of Decentralized Finance (DeFi) by focusing on decentralized exchanges (DEXes). We'll continue by discussing other types of DeFi applications and protocols, such as collateralized and flash loans, derivatives, and tokenization. We will also discuss the risks of DeFi.

This course is an essential introduction to blockchain technology and applications for anyone interested in both the theoretical and practical approaches to blockchain.

The course will feature the following components:

1. Lectures;
2. Simulations of blockchain technology and Decentralized Finance;
3. Guest lectures;
4. Final project involving a proposal of a new application of blockchain technology.

## Course Objectives

Upon completion of the course, you will:

1. Understand the basics of the blockchain technology;
2. Become accustomed with the Bitcoin blockchain;
3. Understand the basics of smart contracts, Ethereum blockchain, and other programmable blockchains;
4. Become familiar with the most important developments in Decentralized Finance (DeFi);
5. Understand various types of crypto assets and the uniqueness off crypto as an asset class;
6. Dive deep into crypto and blockchain by thinking about a new, yet undeveloped and unique, application of blockchain technology.

## Evaluation of Students and Composition of Grades

Percentage	Assignment	Group Size/Comments
40%	New blockchain application (white paper)	Groups of up to 5 students
40%	New blockchain application (presentation)	Groups of up to 5 students
10%	Homework assignments	Individual
10%	Class participation	Individual

## Grading Policy

In the 2008/9 academic year the Faculty instituted a grading policy for all graduate level courses that aims to maintain a certain level of the final course grade. Accordingly, this policy will be applied to this course's final grades.

Additional information regarding this policy can be found on the Faculty website.

[Score Retention Policy](#)

## Evaluation of the Course by Student

Following completion of the course students will participate in a teaching survey to evaluate the instructor and the course, to provide feedback for the benefit of the students, the teachers and the university.

## Course Site (Moodle)

The course website on Moodle will be the primary tool to communicate messages and material to students. You should check the course site regularly for information on classes, assignments and exams.

Course material will be available on the course website.

Please note that topics that are not covered in the course material but are discussed in class are considered integral to the course and may be tested in examinations.

## Course Outline\*

Class	Date	Topic(s)	Additional activities	Submissions	Comments
1	26/2/2023	Introduction to fintech and blockchain  The building blocks of blockchain			
2	5/3/2023	The basics of blockchain	Hashing and cryptography simulation		
3	12/3/2023	Types of consensus mechanisms, Bitcoin, Ethereum, and additional blockchains	Guest lecture on the topic of confidential cryptocurrencies		
4	19/3/2023	Introduction to Decentralized Finance (DeFi)	Guest lecture on the topic of decentralization of information on blockchain	Homework 1	
5	26/3/2023	Centralized crypto exchanges (CEXes)  Decentralized crypto exchanges (DEXes)	Guest lecture introducing a DeFi protocol		
6	2-6/4/2023	Initial conversations with teams regarding ideas for the course project			Conversations with Prof. Lyandres
7	16/4/2023	Decentralized lending	Guest lecture introducing another DeFi protocol		
8	30/4/2023	Additional blockchain applications: Tokenization and derivatives  DeFi risk sources	Opening a crypto wallet and interacting with a DeFi application (demo)	Homework 2	
9	7-11/5/2023	Informal presentations by teams of their project ideas		Submission of an initial idea for the project	Conversations with Prof. Lyandres and course mentor
10	14/5/2023	Regulation and corporate governance in the DeFi world	Guest lecture on the topic of crypto regulation and governance		

11	21-25/5/2023	Continued conversations with teams regarding course project		Initial draft of the project's white paper	Conversations with Prof. Lyandres and course mentor
12	28/5/2023	Investments in crypto	Guest lecture on the topic of crypto in Israel		
13	4-8/6/2023	Final discussions with teams regarding course project		Final draft of the project's white paper	Conversations with Prof. Lyandres and course mentor
14	11/6/2023	Presentations of course projects			Presentations of final project in front of industry experts

\*Subject to change

## Recommended Reading

"Beyond Bitcoin: The Economics of Digital Currencies and Blockchain Technologies" by Hanna Halaburda, Miklos Sarvary, and Guillaume Haeringer (available on [www.ssrn.com](http://www.ssrn.com))

"DeFi and the Future of Finance" by Campbell Harvey, Ashwin Ramachandran, and Joey Santoro (available on Amazon)