



UZH
Blockchain
Center



Universität
Zürich^{UZH}

PROF. DR CLAUDIO J. TESSONE

PHD SEMINAR ON

BLOCKCHAIN

RESEARCH

SYLLABUS

SPRING SEMESTER 2019

Network Science / URPP Social Networks

UZH Blockchain Center

Department of Business Administration (IBW)

University of Zurich, Switzerland

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PREAMBLE

Welcome

This course takes place every Semester. You will find all necessary information concerning the course within this Syllabus. From time to time, updates will be communicated on the webpages of the Network Science group and UZH Blockchain Center. The URLs are

- <http://www.business.uzh.ch/professorships/networkscience>
- <http://www.blockchain.uzh.ch>

Please, check regularly both.

Most of the events take place concurrently with the Lecture Series of the UZH Blockchain Center. In others, PhD Students are expected to present the results of their work on the area.

We are very happy to welcome you to our Lecture series and PhD Seminar.

Claudio J. Tessone

QUICK OVERVIEW

Instructor

- Prof. Dr Claudio J. Tessone

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Webpage: <https://www.business.uzh.ch/professorships/networkscience>

Details

Type: PhD Seminar

Target Audience: PhD students at the Faculty of Economics, Business Administration and Information Technology

Frequency: Each Semester

AP (ECTS): 3

Language: English

Prerequisites

Basic knowledge on the Blockchain technology, its jargon and applications.

Content:

A seminar with very active participation of the students that introduces them to the state-of-the-art research developed internationally.

Grading:

Active participation. Presentation of own research in the area (i.e. a finished project) or critical review of a (previously agreed upon) topic of research related to Blockchain.

Further information:

<https://www.business.uzh.ch/en/professorships/networkscience/teaching>

Registration:

Through the registration tools at the University of Zurich.

I. INTRODUCTION AND OBJECTIVES

Blockchains have disrupted the way of thinking distributed systems; since their introduction multiple applications have surfaced, ranging from financial ones – which have been the most pervasive – to supply chains, digital democracy and distributed computing.

Blockchain related research is increasingly becoming an active, heavily interdisciplinary, field of research. This Seminar is intended for PhD students interested in obtaining in-depth familiarity with and current research topics different areas related to blockchains. Students will actively participate in lectures by top scholars recognised internationally. They will have to opportunity to critically evaluate the research presented. They will also receive feedback on their current research projects and get to know the work of other students.

2. PROGRAMME SPRING 2019

This PhD Seminar nurtures also from the Lecture Series on Blockchain and the Swiss Symposium on Blockchain Research, organised by the UZH Blockchain Center.

LECTURE 1. 19.02.2019 - State of Cryptoeconomics Research

Dr Shermin Voshmgir

Director, Research Institute for Cryptoeconomics

Vienna University of Economics and Business

Austria

LECTURE 2. 12.03.2019 - Stablecoins: Crypto's Holy Grail or Fools' Errand?

Dr Garrick Hileman

Head of reseach at Blockchain

London School of Economics

United Kingdom

LECTURE 3. 21.05.2019 - Will Bitcoin mining lead to global environmental catastrophe?

Prof. Dr Ladislav Křištofuk

Vice-Dean for Student Affairs & Associate Professor

Faculty of Social Sciences, Charles University Prague

Czech Republic

LECTURE 4. 21.05.2019 - Design and verification of Bitcoin smart contracts with

BitML

Prof. Dr Massimo Bartoletti

Blockchain@Unica Lab

Università di Cagliari

Italy

LECTURE 5. 04.06.2019 – The BSafe Academic Network

Dr Shin'ichiro Matsuo, Research Professor

Department of Computer Science,

Georgetown University

USA

3. COURSE MATERIAL

Material Offered

Students have access to OLAT to download the slides presented in class, find relevant material, datasets and literature.

Overview of classes

On the webpage an overview of all classes given by our team can be found. Develop an idea of the classes and how they best fit into your personal agenda. Keep in mind that network theory and analytics classes are only offered once a year. It is also necessary to have successfully completed the prior course to proceed with the following.

Syllabus

For each course, a detailed syllabus exists with all details concerning that specific course. This is your guideline for the class and a **MUST** read. You'll find everything in here concerning the grading of the course, the agenda, the planned topics and much more...

The main materials used in this course are:

The Slides

The slides presented and discussed in class are available in a digital format. You can download the slides to each class. The slides do not completely cover the entire Syllabus,

therefore, it is necessary to participate in the class. All slides will be distributed after each module.

All our slides follow our detailed standardized slide format. All presentations in the classroom also have to follow this format.

4. READING

The material will be distributed in OLAT and in class.

Related scientific journals

- ⊕ *Ledger*
- ⊕ *Frontiers in Blockchain*

5. APPLICATION PROCEDURE

To apply for the seminar, please, send Prof. Dr Claudio J. Tessone a short application E-mail. First come first served. If you receive our positive confirmation by February 10th at the latest, **THEN** you are asked and allowed to officially book this seminar using the “Modulbuchungstool”. Booking the seminar without a positive confirmation from our Chair is not implying the right to attend the course. In this case the course may be graded as failed.

Once confirmed please enrol to the course using the usual UZH planning tools. In case of doubts, contact the instructor of the booking service of the Faculty: E-Mail: modulbuchung@oec.uzh.ch.

6. EVALUATION

There is no final written exam on the subjects taught during the course. We believe this is a subject whose depth can be best learnt by investigating the subject: Therefore, there are extensive practice sessions where the students get in-depth exercises on the main topics in the area.

6.1 Active participation in lectures

Thoughtful and active participation in the lecture are expected (and core to the course). Credits will be given for knowledge of readings, cogent articulation of arguments and comments, and contribution to case discussion. Participation will be evaluated for quality

as well as consistency. Attending the lectures is mandatory, except for cases of *force majeure* which must be communicated as soon as possible to the instructor.

6.2 Presentation

Students which are actively performing research in the area of blockchain will present a piece of their research in the format of a scientific seminar. The status of the project should be final, or close to finalisation.

Students who are not active in the field will review an area of the state-of-the-art literature (previously agreed with the instructor) and will present the results, including their critical perception.

The presentations are expected to be highly structured, and comprehensible to an interdisciplinary audience.

7. ACADEMIC FRAUD

The Code of Honour of the University of Zurich applies to all work in this course and will be strictly enforced. The intent of the Honour Code in this course is to ensure that each student claims and receives credits for his/her own efforts. Violations to this are considered academic fraud.

Definition

Academic fraud is an act by a student, which may result in a false academic evaluation of that student or of another student. Plagiarism is understood as the use or imitation of another people's work, either wholly or partially, without acknowledging the source and the author. In principle, plagiarism is an infringement of copyright law. Short passages from another author may be quoted.

All documents you will hand-in are going to be checked by software and manually for plagiarism. Documents with a score above 10% are going to be intensively validated and in suspicious cases we hand-out penalties for fraud behaviour.

8. ADMINISTRATIVE COMMENTS

8.1 Students with disabilities

Any student with a documented disability needing academic adjustment or accommodation is requested to speak with the instructors during the first two days of class. All discussion will remain confidential. Students with disabilities will need to also contact the directors of the Faculty.

8.2 Getting in contact with me

E-mails should be short and to the point. Before sending an email, make clear that email is the appropriate instrument for your task. In some situations, a telephone call is much easier and more personal. Or just ask me in class.

8.3 Sound-emitting devices

It is expected that you turn off/mute all devices that emit sounds and noises that may interrupt the class (e.g., notebook, mobile phones, watch alarms). If a student leaves a lecture to answer a call without previously notification, he/she will not be allowed to return to class.