



University  
of Basel

Center for  
Innovative Finance



brechnung

# Blockchain Challenge.

A Seminar of the Center for Innovative Finance.  
Information for Students.

# General Information for Students.

## The Blockchain Challenge

With the Blockchain Challenge, the University of Basel's Center for Innovative Finance overcomes the gap between theory and practice. This seminar is an excellent opportunity to gain practical experience during your studies and to work on real-world cases provided by large companies and organizations. The Challenge consists of designing a solution based on a practice-oriented problem description. Accompanied by coaches and experts, you go through the whole process of creating a concept and even develop a prototype.

## Benefits

The Blockchain Challenge not only strengthens teamwork, organizational-, and presentation skills but also promotes time-management and problem-solving competencies. Furthermore, the Challenge offers a unique opportunity to get in touch with renowned companies and experts as well as students who are interested in the topic. It is also an excellent chance to practically apply the knowledge acquired in university lectures. By working on a real-world problem with your business partner, you can potentially get a head start in launching your career. Finally, the three best-placed teams will be given an award and cash prizes amounting to a total of 19'000 CHF.

## Your Task

You will work in teams of two to four students with at least one Bachelor's and one Master's student per team. In close collaboration with a company, you will work on a real-world business case. During the semester, supported by coaches and professors, you will develop a Blockchain-based solution for the business case. You will write a concept paper, create a visual mock-up, as well as a technical prototype, and present your progress at interim presentations. The semester ends with a gala event where you will showcase your work to a broader audience.

## Your Background

Students of all disciplines are welcome, and we believe that diversity fosters creative and innovative outcomes. Successful teams usually consist of students with diverse backgrounds and skillsets such as project management, design and marketing, programming, law, and presentation skills. Prior Blockchain specific knowledge is no strict requirement, but you should be motivated and interested in the topic.

## Professors

This seminar is supervised by Prof. Dr. Fabian Schär (Professor for Distributed Ledger Technology/Fintech, University of Basel), Prof. Dr. Aleksander Berentsen (Professor of Economic Theory, University of Basel), and Prof. Dr. Walter Dettling (Lecturer for Business Information Technology and Mathematics, FHNW).

## Grading and Credits

The course is addressed to both Bachelor's and Master's students. By successful completion, you will be credited with 6 ECTS. All elements you produce during this seminar will be graded. This includes interim presentations, the concept paper, the mock-up, and your final presentation at the gala event.

## Application

The Blockchain Challenge takes place during the spring semester of 2022 and is open for Bachelor's and Master's students from the University of Basel. External applications (students of other institutions) are also considered. You can apply individually or as a team consisting of up to four students. Please keep in mind that each group must fulfill the minimum requirement of 1 Bachelor- and 1 Master-level student. The application form, as well as additional information, can be found on our website:

- <https://www.unibas.ch/de/peopleandareas/dltfintech/blockchain-challenge/>
- <https://www.unibas.ch/en/dltfintech/blockchain-challenge/>

# Key Takeaways and Preliminary Schedule.

## Key Takeaways

- You will develop a Blockchain concept based on a **real-world business case**. The business case is provided by a partner company.
- You work in **teams consisting of two to four students**. The teams are supervised by professors and external coaches.
- You will get the chance to **practically apply the knowledge** acquired in university lectures and **establish important contacts** in the corporate world.
- You will receive **6 ECTS** upon successful completion.
- The three best-placed teams will be publicly awarded during the gala event and receive cash prizes amounting to **19'000 CHF**.

## Preliminary Schedule

|             |   |
|-------------|---|
| February    | <b>Kick-off Event with Case Selection</b><br>At the kick-off event, the participating companies present their cases, and you get the opportunity for networking. Afterward, the student teams choose their case and meet up with representatives of the company.  |
| March       | <b>Jumpstart Workshop</b><br>The jumpstart workshop will provide you with the skills to successfully master your case. This event will be held in a workshop format and offers insights into blockchain, smart contracts, and user interface design. By arranging your program individually, you can prepare yourself optimally for your case.  |
| March – May | <b>Interim Presentations and Coaching Slot</b><br>After the introductory events, your team will work on its case. For specific questions, external experts from various fields of expertise can be consulted. The company providing the case is also available for consultation. During this time, you will also present your current state of work three times in short presentations. After every presentation, you will receive feedback from the professors to further improve your case. Furthermore, we will offer an individual coaching slot in the middle of the semester to clarify specific questions and help you with your case. |
| May         | <b>Final Rehearsal for the Gala Presentation</b><br>This is the last time you will rehearse your presentation for the gala event. You will get feedback in a protected environment.   |
| May         | <b>Gala Event with Award Ceremony</b><br>During the grand gala event, you will present your cases to a broad audience consisting of representatives of the participating companies, key representatives from the blockchain space, and representatives from the private sector. Finally, the three best-placed teams will be awarded.   |

**Project Partners 2022:** Axedras, BearingPoint, Blackhawk Network, Credit Suisse Asset Management Switzerland, Novartis, Roche and TezosFoundation.

**Previous Project Partners:** AXA, Bank Cler, BLKB, Burckhardt, Ernst&Young, Finnova, INNOQ, Markant, Port of Switzerland, SBB, Swisscom, SWISSTXT, Sympany, Synpulse, TopPharm, Vision&, Verein Vorsorge Schweiz





### **Blockchain Loyalty Network** Case provided by TopPharm Wenqi Li, Dominik Merz

AccountChain is a decentralized, fully transparent, and fraud-protected loyalty platform. It ensures data security and efficiency by automating accounting processes in a trusted technological environment. Moreover, the integrated unambiguous identification access mechanism allows all branches in your business network to interact with each other transparently. All data is cryptographically validated and stored decentrally, preventing fraud and cyber-attacks. Additionally, AccountChain facilitates the management of reciprocal financial liabilities between all branches, allowing customers to spend their loyalty points anywhere in your network. Furthermore, it simplifies VAT accounting through its flexible real-time reporting, providing an overview of key financial figures – trustworthy and without any delay. AccountChain helps not only in reducing marketing costs but also in developing a profound understanding of customer behavior by delivering end-to-end tracking of transaction data. Finally, the system leverages sales by allowing the simple execution of special promotions in individual branches or simultaneously for the entire network.

### **Lending and Borrowing of Crypto Assets** Case provided by Bank CLER Tobias Schaffner, Alain Schaller, Samuel Welde

Bank Cler recently announced their upcoming entry into the crypto asset market. To extend this offer, the students proposed several add-on solutions that expand the current concept beyond its initial footprint. The main focus lies on a bridge solution, enabling simple, intuitive, and smooth transitions to the DeFi ecosystem. Bank Cler customers have the option to lend and thus earn interest on their crypto assets with only a few simple steps through their existing e-banking application. The team prototyped interactive mockups and developed an actual bridge, allowing Bank Cler an easy and seamless implementation.

### **Sustainable Finance Tokenization** Case provided by Swisscom Blockchain Alisha Amrein, Dominic Richner

Swisscom challenged us to foster sustainability through the use of blockchain technology. This case aims to employ this novel technology to provide a higher degree of transparency and flexibility, align incentives in the sustainable investment market, and mitigate greenwashing in sustainable finance. Sustainable projects are represented as digital assets, called tokens, on a Blockchain platform. Corporate investors interested in environmentally or socially impactful investments can then purchase these tokens using stablecoins and cryptoassets. Whenever investors obtain such a token, they receive additional sustainability tokens as a reward. These tokens work as reputable achievements and can be publicly verified. Such a platform can mobilize investors to support more sustainable activities and provide them with valid proof of their involvement, preventing greenwashing.



### **Electronic Product Information (ePI)** Case provided by Novartis Vanessa Abegg, Manuel Baez, Josep

Brunet Kunz, Luca Finkler-Haack PharmaLedger, a leading consortium of 29 partners, including Novartis, aims to create a Blockchain-based platform for the healthcare industry. One of the most advanced use cases is the implementation of Electronic Product Information (ePI). The ePI solution allows manufacturers to profit by having faster manufacturing adaptability and cost reduction. In order to upscale such a blockchain ecosystem, it is necessary to prove that it is sustainable at a small scale and can integrate all stakeholders with different goals and interests. We designed a mock-up that visualizes the governance structure and shows what incentives are used to create a developer community to contribute to PharmaLedger. In addition, we propose creating a foundation funded by the membership fees of manufacturers in PharmaLedger and others who wish to join. This governance model will allow the balanced distribution of power inside the ecosystem regarding decision-making processes.

### **Physical Assets Tokenization** Case provided by Bearing Point Oliver Keller, Dominique Ostermayer, Dario Thürkauf

Physical assets are highly complex investments due to idiosyncratic valuation mechanisms, high financial entry thresholds, and long processing times. Multiple layers of trusted parties are usually involved in a transaction of physical assets due to complexity and the concomitant low trading activity, as well as the necessary high level of expertise. This results in high transaction costs, asymmetric information, trust as well as counterparty risks. The transition of physical assets to a blockchain by tokenization is a holistic solution to the investment case of physical assets. Our project Opus builds bridges between the blockchain and the physical world by tokenization, unlocking novel investment opportunities for institutional and retail investors alike: A modular tokenization framework for fine art with extensibility to any type of mobile physical asset. The Opus tokens are a vehicle for fractional ownership of a specific artwork based on the Ethereum ecosystem. The Opus framework reduces the number of trusted parties involved in a transaction of physical assets while expediting settlement and improving information flow and price discovery.

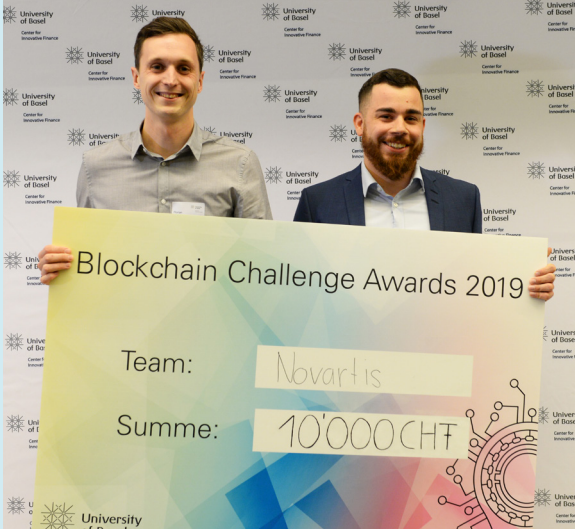


**Smart Contract Insurance**  
**Case provided by AXA**  
**Laslo Dosa, Albi Tahiri, Thom van Rijn**

Decentralized Finance (DeFi) has grown exponentially over the past year. However, users looking for exceptional returns on their investments often underestimate the risks associated with Smart Contracts, which are the fundamental building blocks of DeFi. The main issue arises from not perfectly securely written Smart Contracts, resulting in bugs and opening up potential attack vectors which can be exploited. Such imperfect code coupled with the decentralized nature of public blockchains and the resulting immutability of transactions can cause a permanent loss of crypto assets locked within DeFi protocols. Therefore, the vision of AXA is to create an insurance product for DeFi Smart Contracts, and the students were challenged to develop a solution for DeFi users.

**Blockchain Technology and Last Wills**  
**Case provided by Burkhardt AG**  
**Nico Born, Annika Kristina Hansen, Pirmin Can Özdemir**

Storing and safekeeping the last will under today’s jurisdiction can be challenging, especially to ensure the will’s existence, validity, and genuineness to the descendants. How do we know that a last will actually exist and whether the version at hand is indeed the most recent one? How can we ensure that the will-maker was sound of mind when creating his last will and that it has not been modified in the meantime? The students were asked to develop a blockchain-based concept addressing these problems.

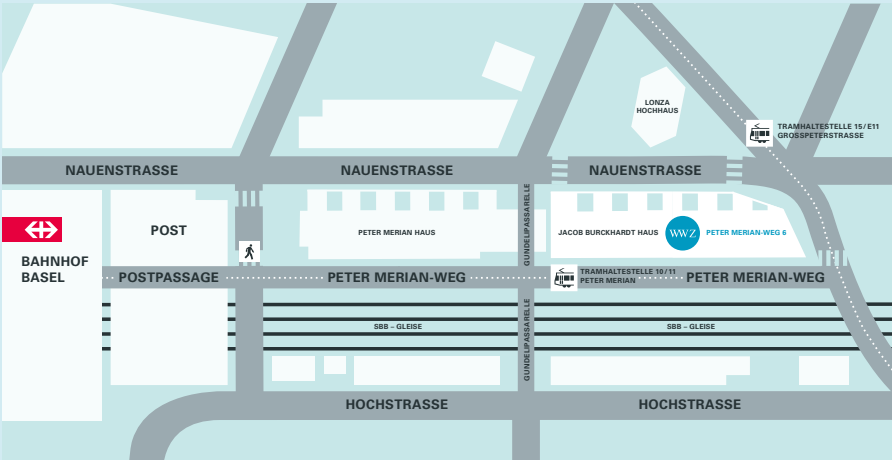


**Blockchain-Based Rental Lease Asset Managment**  
**Case provided by Credit Suisse Asset Management Switzerland**  
**Stefan Alfonz, Brian Kilchenmann, Annika Neumann, Felix Novotny**

“Liquispace” connects landlords and rental lease contract owners to a marketplace where they can liquify unused rental lease space or acquiring new rental lease space in an easy and compliant way through a block-chain-based platform, which guarantees that all business-critical requirements are fulfilled. The platform aims to improve time to market and to gain flexibility on managed real estate portfolios. It offers easy access to an open marketplace for rental lease assets with various opportunities to acquire or offer commercial rental space. Key features of the platform are: Easy access to an open marketplace for rental lease asset, where everyone can acquire or offer commercial rental space; an Ethereum blockchain-based process with an integrated rental auction; and a Smart contract-based authentication and contract signing process, deployed on the Ethereum blockchain providing a transparent and traceable audit trail.

**Directions**

Leave Basel SBB train station by the main exit/front entrance (direction city) and turn right for the covered passageway of the post-office (“Postpassage”). Then go straight on for about seven minutes through the passageway to the Peter Merian-buildings (green) and further on to the Jacob Burckhardt Building, Nr. 6 (silver). Alternatively, take the tram Nr. 10 (direction “Dornach”) or the tram Nr. 11 (direction “Aesch”) at the tram stop outside the train station’s main exit for one stop (“Peter Merian”).



**Educating Talents**  
since 1460.

Center for Innovative Finance  
University of Basel  
Faculty of Business and Economics  
Peter Merian-Weg 6  
4002 Basel  
Switzerland

<https://cif.unibas.ch>

**About the Center for Innovative Finance of the University of Basel**

The “Center for Innovative Finance” (CIF) of the University of Basel is engaged in the fields of Fintech, Digital Banking, and Finance. Our research focuses on the scientific analysis and practical implementation of Blockchain projects, venturing, and innovative financial solutions. With this research focus, the CIF is unique in Switzerland and makes a decisive contribution to the research and application of future-oriented technologies — also in the context of social consequences.