

# BLOCKCHAIN, 2021-2022

## DESCRIPTION

A blockchain is a decentralised, public ledger of transactions. This innovative technology can be used to address different industry problems by enabling trust and security between parties that want to do business. The technology hype has gone, and organisations are moving from experimental proofs-of-concept to large-scale projects. Currently, major blockchain projects have been released in several industries including cybersecurity, healthcare, logistics and education. To find more about use cases, you can see the vision document of the Dutch Blockchain coalition [here](#).

This minor prepares ICT students to build decentralised applications. Currently, we work with partner organisations that propose real-world problems to students in the field of Telecom, Public Services, Government, Logistics, to name a few.

The video below shows an example of a project outcome built by students

VIDEO

## LEARNING GOALS

At the end of this course, the students should be able to

- **Understand** what Blockchain is and why it is used
- **Explain** the different components involved within Blockchain
- **Know** when and why you may want to use Blockchain within your environment
- **Interact** with a blockchain system by sending and reading transactions.
- **Design**, build and deploy smart contracts and distributed applications.
- **Discuss** the impacts of blockchain applications on society, laws and regulations, ethics and legislation

## COURSE(S), ECTS, ASSESSMENT

The minor is divided into modules:

In **Blockchain Applications** module (4 ECTS), students are introduced to the blockchain world. We investigate the influence of other fields of knowledge like economics, computer science and mathematics over decentralised ledger technologies. Also, it explores how blockchain can be used to solve problems, from cryptocurrencies to consortium-based apps.

In the **Development** module (4 ECTS), students learn how to create a blockchain network, and how to program smart contracts, the essential building blocks of this technology.

The **Architecture** module (4 ECTS) can be seen as a continuation of the development course, exploring different software requirements of a blockchain-

based application, like interoperability, security, digital identity, and hosting decisions.

The **Legal and Risk** module (4 ECTS) investigates the legal aspects of a blockchain solution (privacy, security, GDPR). A blockchain application has a broad scope, affecting many different stakeholders. Thus, governance and risk management play a key role.

The **Project** module (11 ECTS) is dedicated to the design and implementation of a blockchain solution together with the client. Students, lecturers and the company work together in an agile fashion.

Admission requirements:

The teaching and examination regulations of the Bachelor programme apply.

This minor is restricted to students with a proven background of software development.

## STUDY MATERIALS

Student materials like presentations, articles, videos, and assignments will be distributed through the current learning environment

LECTURER

[Marcio Fuckner](#)