Cloud Computing

Course guide 2026-2027

Semester	Fall (semester 1)
Inholland location	Haarlem
Inholland faculty	Engineering, Design and Computing
Language of instruction	English
Cycle	Bachelor level
Number of ECTS	30

Subjects

Subject title	ECTS	Course code
Cloud Databases	3	1920CLD01Z
Server Side Programming 1	3	1924SSPR1Z
Server Side Programming 2	3	1924SSPR2Z
Project Cloud API 1	2	1924PRCA1Z
Research Cloud 1	2	1922CLD03Z
Project Cloud API 2	13	1924PRCA2Z
Microservices Architecture	2	1924MICRAZ
Research Cloud 2	2	1922CLD09Z

Content subjects

Over the past decade server-side software deployment models have rapidly changed, and the availability of development services has greatly increased. Thorough knowledge of IaaS and PaaS solutions is vital to software developers specializing in backend software development.
This minor addresses these topics in a hands-on manner and teaches you how to develop serverless solutions. It consists of various classes and workshops with topics ranging from obtaining hands on experience with Microsoft Azure, to cloud database models, REST API design and testing, Continuous Integration / Continuous Delivery (CI/CD) and DevOps.
A general overview of the scope of the concepts of cloud computing is provided by the Cloud Computing course. The API Design course teaches you how to properly design and document an API based on the RESTful paradigm using OpenAPI (Swagger). The API Testing course provides you insights in how to perform automated tests on an API, and how to integrate this into a CI/CD pipeline.
In addition, students will develop skillsets necessary to deploy, maintain and scale software in a containerized environment (Kubernetes).
Microservice architectural styles that structure an application as a collection of services will be implemented with modern programming languages (Go and Python). A course in Cloud Databases allows you to differentiate between various options at hand for storing information in a scalable manner. Hands on experience is provided by several Azure development workshops.
The core of the minor consists of a group project for an external client (not for profit), which provides you the opportunity to seeing your backend being applied in practice.

Learning outcomes

The student is able to:

- identify cloud deployment models and apply these models in a development process
- design an API using the RESTful paradigm
- model and document an API using OpenAPI (Swagger)
- differentiate between various cloud database models, and apply them to a software solution
- design and develop highly scalable serverless cloud solutions
- design, develop and deploy highly scalable cloud solutions
- cooperate with fellow students in software development activities
- effectively communicate with external clients (not for profit)

Mode of delivery, planned activities and teaching methods

Strategies and teaching activities

- Workshops by experts
- Do research with your project group
- Lectures on theory combined with practical exercises

Prerequisites and co-requisites

Audience: Bachelor ICT 3rd year with knowledge and experience in Object Orientated Programming Languages such as C# or Java.

Assessment methods and criteria

- Project assessment consisting of a specification review, code review and two presentations.
- Individual code assessment
- Individual programming assignments
- Written exam on cloud computing theory

All assessments must be completed with a sufficient grade

Lecturer(s)

Teachers of the Information Technology Haarlem study program and guest lectures and workshops by specialists from the field of cloud computing.

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