

# Course Manual LCSS

Large and Cloud-based Software-Systems

Version: 1 | Last Change: 25.09.2019 21:43 | Draft: 0 | Status: vom verantwortlichen Dozent freigegeben

## – General information

**Long name** Large and Cloud-based Software-Systems

**Approving CModule** [LCSS\\_MaTIN](#)

**Responsible** Prof. Dr. René Wörzberger  
Professor Fakultät IME

**Valid from** summer semester 2021

**Organisation and materials** [Ilias course](#)

**Level** Master

**Semester in the year** summer semester

**Duration** Semester

**Hours in self-study** 78

**ECTS** 5

**Professors** Prof. Dr. René Wörzberger  
Professor Fakultät IME

**Requirements**

- advanced programming skills
- basic knowledge in web technologies
- basic knowledge in databases
- basic knowledge in software architectures
- basic knowledge in the Unified Modeling Language (UML)

**Language** English

### Literature

### Final exam

**Details** The final exam is either oral or written. Students have to prove that they can architect a large and cloud-based system and run it in the cloud.

**Minimum standard** 50% of all achievable points

**Exam Type** EN Klausur

**Separate final exam**

Yes

## – Lecture / Exercises

### Learning goals

Goal type	Description
Knowledge	Understanding different stakeholder groups with their interests and concerns
Knowledge	Understanding quality attributes and their interdependencies
Knowledge	Knowing scenario-based specifications of architecturally relevant requirements
Knowledge	Knowing the parts of a large and cloud-based system cluster, like load balancers or messages queues.
Knowledge	Knowing the constituents of a system cluster in the cloud of an actual cloud provider like Google.
Knowledge	Knowing the use of container virtualization techniques like Docker and orchestration tools like Kubernetes.

### Special requirements

none

### Accompanying material

- lecture notes (in English)  
- assignment sheets  
- lab course assignment sheets  
- free coupons for use in the cloud

### Separate exam

No

### Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	1
Exercises (shared course)	0
Tutorial (voluntary)	0

## – Practical training

### Learning goals

Goal type	Description
Skills	Specifying and documenting the design of a large and cloud based system with hindsight to conflicting quality requirements
Skills	Prototypically implementing the large system, deploy and run it in the cloud.

### Special requirements

none

**Accompanying material** - lab course assignment sheets  
- templates for documents

**Separate exam** Yes

### Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	1
Tutorial (voluntary)	0

### Separate exam

**Exam Type** EN Projektaufgabe im Team bearbeiten (z.B. im Praktikum)

**Details** Teams have to solve multiple assignments regarding the design, implementation and deployment of a large system in the cloud. The solutions have to be presented by the team members at certain dates during the term.

**Minimum standard** Contributions of each team member have to meet a certain level of quality and quantity in each presentation and preliminary deliveries (documents).