Technology Arts Sciences
TH Köln

Course Manual LCSS

Large and Cloud-based Software-Systems

− 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
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 knowledege in web technologies - basic knowledge in databases - basic knowledge in software architectures - basic knowledge in the Unified Modeling Language (UML)
Language	English
Separate final exam	Yes

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

– 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 cluser in the cloud of an actual could provider like Google.
Knowledge	Knowing the use of container virtualization techniques like Docker and orchestration tools like Kubernetes.

Special requirements

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 sytem with hindsight to conflicing quality requirements
Skills	Prototypically implementing the large system, deploy and run it in the cloud.

Expenditure classroom teaching

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

Special requirements

Accompanying material	- lab course assignment sheets - templates for documents
Separate exam	Yes

Separate exam

Exam Type	EN Projektaufgabe im Team bearbeiten (z.B. im Praktikum)
Details	Teams have to solve multiple assignements regarding the desing, 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 premlimiary deliveries (documents).