CLOUD COMPUTING AND ARCHITECTURE

ECTS: 5

Periode: Kvarter 1 2015

Niveau: Kandidat

Semesterplacering:

Deltagerbegrænsning:

Undervisningssprog: Engelsk

Sted:

Primær uddannelse: Kandidatuddannelsen i datalogi

Relaterede uddannelser (vis alle): Bachelorud…

Institut: Institut for Datalogi

Kursustype: Ordinær

STADS UVA kode: 220152U003

Kvalifikationsbeskrivelse

Course Objective:

The student can design, implement, and evaluate reliable, available, and scalable architectures for distributed systems of moderate complexity in a cloud computing context.

Learning outcomes:

- *Design* distributed systems of moderate complexity using architectural patterns to achieve specific architectural quality attributes
- *Implement* distributed systems using tactics and patterns for reliability, availability, and scalability
- *Deploy*, *evaluate, and test* distributed systems in virtualized environments and cloud environments
- *Apply* central techniques for big data

Indhold

The course consists of results from research and practice within software architecture and cloud computing focusing on design, implementation, and evaluation of back-end architectures for high availability, reliability, and scalability. It will contain central techniques from software architecture to describe and evaluate quality attributes, discuss central definitions and techniques in cloud computing, service concepts and utility computing and the underlying technologies, in particular virtualization. Great emphasis is put on practical experience gained in design and implementation using architectural and design patterns (for instance within redundancy, messaging, hypervisors, and NoSQL) as well as concrete products and libraries (for instance MongoDB, RabbitMQ, Docker, or similar). Emphasis is also put on software engineering techniques to develop and evaluate reliability, availability, and scalability primarily through testing.

Underviser

Henrik Bærbak Christensen (resp)

Timer - Uge - Periode

Faglige forudsætninger

Tips til søgning

Søgefeltet

I søgefeltet kan du udelukkende søge på kursustitler. Du kan afgrænse yderligere ved fx at vælge din uddannelse.

Overblik over kurser på din uddannelse

Afgræns din søgning ved at vælge Periode, År og Uddannelse. Så får du en oversigt over samtlige kurser, som uddannelsen udbyder for den valgte periode.

Søg på nøgleord

Efter du har valgt din uddannelse, kan du i søgefeltet skrive "tag:: nøgleord". Nøgleord kan f.eks. være obligatorisk, valgfag, profilfag.

Gemte kurser

- Du har endnu ikke gemt nogle kurser.

GEM DETTE KURSUS

Senest viste kurser

- Cloud Computing and Architecture
- Arkitektur og design af distribuerede pålidelige systemer (TIARDI1U01) (Q1)

Ældre kurser

- IHAs kursuskatalog med kurser fra før F2014
- ASBs fagkatalog med kurser fra før F2013
- AUs kursuskatalog med kurser fra før F2012

Undervisningsformer

Forelæsning

Kommentarer til undervisningsform

Lectures of 3 hours every week

Eksamensoplysninger

Praktisk

Censur: intern censur

Bedømmelse: 7-trinsskala

Forudsætninger for prøvedeltagelse: Approval of a set of milestones on the mandatory project is a prerequisite for the exam.

Bemærkninger: Practical, individual, examination based upon mandatory project developed in groups. Approval of a set of milestones on the mandatory project is a prerequisite for the exam. In the exam the student is required to perform minor modification and/or additions to source code, testing, deployment scripts and/or other artefacts in the mandatory project, and demonstrate it to the examiner. The required modifications/additions are not known in advance of the exam.

At the exam the student must bring laptop with working internet connection.
All aids.

Eksamenstid: 60 minutter

Hjælpemidler: Anviste

Litteratur

Chapters from e.g.:

Lenn Bass et al. "Software Architecture in Practice, 3rd Edition"

Michael T. Nygard. "Release It!"

Frank Buschmann et al. "Pattern-oriented software architecture, Vol 4"

Robert C. Martin. "Clean Code"

Martin L. Abbott et al. "The art of Scalability"

Research papers and online resources.

The course requires that students get access to hosting in the cloud.

A laptop with a modern processor supporting virtualization technology is recommended.

Pensum

Studieordninger

Forudsætningsaktivitet

Semesterplacering

Deltagerbegrænsning

Øvrige oplysninger

Kursushjemmeside:
http://bb.au.dk/

Eksamenstermin:
Eksamen: Q1
Reeksamen:Q2

Vi udvikler løbende kursuskataloget. Hvis du har forslag til kursuskatalogets videre udvikling, er du velkommen til at kontakte os på feedback@adm.au.dk.