Blekinge Institute of Technology
Department of Software Engineering

Revision: 1
Reg.no: BTH 4.1.14-0239-2020

COURSE SYLLABUS

Tillämpad Cloud Computing och Big Data

Applied Cloud Computing and Big Data

7.5 credits (7,5 högskolepoäng)

Course code: PA2577
Main field of study: Software Engineering
Disciplinary domain: Technology
Education level: Second cycle
Specialization: A1N - Second cycle, has only first cycle course/s as entry requirements

Subject area: Computer Technology
Language of instruction: English
Applies from: 2020-08-31
Approved: 2020-03-01

Översättning/Translation

1. Decision

This course is established by Dean 2019-11-25. The course syllabus is approved by Head of Department of Software Engineering 2020-03-01 and applies from 2020-08-31.

2. Entry requirements

At least 90 credits in a technical subject of which at least 30 credits in in one or more of the following areas: Programming, Object-oriented Systems, Software Design, Data Structures and Algorithms, Database Technology, Data Communications, Real Time Systems, Operating Systems.

or

At least 90 credits within technology and a minimum of 2 years professional experience in software development (shown by, for example, a work certificate from an employer).

3. Objective and content

3.1 Objective

The mobile and connected world of today generates a large amount of data that needs to be managed, analysed, and linked. This is often done on the cloud. The development, deployment, and management of this is called Cloud Computing. The purpose of this course is to offer a wide background about designing, developing, deploying, testing, and monitoring a cloud solution, specifically with a focus on big data problems.

3.2 Content

The course offers an overview of popular cloud platforms and provisioning and deployment of cloud applications, including cloud-based storage. The course also discuss challenges solutions for Big Data analytics. The course is divided into three themes:

- Provisioning and Deployment
- Big Data Analytics
- The Business Case for Cloud Computing

4. Learning outcomes

The following learning outcomes are examined in the course:

4.1 Knowledge and understanding

On completion of the course, the student will be able to:

- In depth be able to describe challenges with Big Data Analysis
- In depth be able to describe different types of cloud platforms
- In depth be able to describe different reasons for adopting a cloud solution, and the challenges with these different reasons.
- In depth be able to reason about solutions to the common challenges with the cloud solutions.

4.2 Competence and skills

On completion of the course, the student will be able to:

• Independently be able to set up a development environment consisting of local machine configurations and cloud based servers.
• Independently be able to implement and configure a big data analysis, including configuring the cloud platform and (if applicable) database.

4.3 Judgement and approach

On completion of the course, the student will be able to:
• Be able to evaluate different reasons for choosing a cloud solution and select a suitable solution accordingy accordingly.
• Be able to evaluate a problem description for a big data analysis and evaluate the potential to create a scalable cloud solution.

5. Learning activities

The teaching is done in the form of written material, literature, lectures, and research literature. The examination is done through written reports and computer based lab exercises.

6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
2010	Writtten Assignment 1	3 credits	GU
2020	Written Assignment 2	3 credits	GU
2030	Written Report	1.5 credits	GU

The course will be graded G Pass, UX Fail, supplementation required, U Fail.

The course-PM for each course revision should include the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

7. Course evaluation

The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. Restrictions regarding degree

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. Course literature and other materials of instruction

J. Rosenberg, A. Mateos, "The Cloud at your Service", Manning, 2010. ISBN-10: 1935182528 | ISBN-13: 978-1935182528
G. Reese "Cloud Application Architectures", O'Reilly, 2009. ISBN-10: 0596156367 | ISBN-13: 978-0596156367
M. Kleppmann, Designing Data-Intensive Applications, O'Reilly, 2017, ISBN-13: 978-1449373320 | ISBN-10: 1449373321

10. Additional information

This course replaces the course PA2542

Översättning/Translation