Advanced Component-Based Software Engineering

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Course Organization

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Course Information

Literature and interesting links

❑ **Advanced Component-based Software engineering**

- http://www.idt.mdh.se/kurser/cdt501

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The course

- ❑ **The PHD and Master course**
- ❑ **Ph.D. students – certificate that you have passed the courses**
- ❑ **Course elements**
  - ● Lectures – Introductions, Insights, Overviews
  - ● Individual and group work
  - ● Self study, reports, presentations

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The course goal

❑ **To give the students an overview of component-based software engineering**

❑ **To train students in finding and summarizing particular topics within CBSE**

❑ **To give students insight in different areas related to CBSE**

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❑ **Now it is your turn to present yourself!**

- Name, etc.

- Main interest

- Experience with component-based development

- Expectation from the courses

- Mails and names

Course Overview

❑ **Basic concepts of Component-based software engineering**

- What is a software component?

- Component specification

- Quality attributes of software components

- Component-based development process

- Component models

- Component-based model for embedded systems

❑ **Self-study and project-based**

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CBSE assignments

1. Report from the selected topic (a part from the book Building reliable component-based systems, or a similar literature)

2. A technical paper that uses a particular topic in modeling of different properties of components

   or practical work

   Example:

   ● It will be provided later...

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Literature

- **CBSE (cd5490)**

    - **Ivica Crnkovic, Magnus Larsson: <u>Building reliable component-based systems</u>**

    - **Ivica Crnkovic: <u>CBSE - New Challenges in Software Development</u> (on the Course web page)**

    - **Alan W. Brown, Kurt C. Wallnau: <u>The Current State of CBSE</u> (on the Course web page)**

    - **Ivica Crnkovic et al: <u>Specification, Implementation and Deployment of Components</u> (on the Course web page)**

    - **Heineman and Councill: CBSE - putting pieces together**

    - **Kurt Wallnau et al: Building systems from Commercial Components**

    - **Clemens Szyperski, <u>Component Software - Beyond Object-Oriented Programming – Second Edition</u>**

    - **<u>Papers found on the internet in the digital libraries...</u>**

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Assignments

❑ **Assignment 1**

- A technical report – overview of an topic from a CBSE

- Presentation

❑ **Assignment 2**

- A technical report/paper from particular part of CBSE

- Or project work

- Presentation

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Assignment 1

❑ **Per topic (a part or set of chapters)**

- Write a report that summarizes a selected topic from the CBSE book (+ an additional aspect).

  ☞ Explore the reference material

  ☞ 3000 words ± 10% (8-10 pages)

  ☞ template

- Presentation material – ca 10-15 slides – USE TEMPLATE

  ☞ Presentation 15 minutes, 5 minutes questions

- Review 2 or 3 reports from other students

  ☞ Review template

❑ **1 student, or 2 students work together**

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Assignment 2 – Alternative 1

❑ **Alternative I**

- Write a technical paper that uses a particular topic from Component-based software Engineering

- A summary of existing research and practical results
  - ☞ 10-30 references

- 15-20 pages (no copies allowed)

- Presentation

- 1 student, or 2 students work together

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Assigment 2 - Alternative 2

❑ **Implementation related to component model**

❑ **A design and implementation of a particular problem**

- Report describing the result

- Implementation

- Presentation and demonstration

❑ **1 student, or 2 students work together**

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Assigment 2 - Alternative 2

❑ **Assigmnets**

- ● To be defined....

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