Analysis, Design, and Software Architecture (BDSA)
Paolo Tell

Course Introduction

About us

- Paolo Tell
  - Postdoctoral researcher (ITU)
  - Global Software Engineering, Computer-Supported Cooperative Work, Software Architecture

- Rasmus Lystrøm
  - MSc. in computer science (ITU)
  - Consultant @Microsoft, C#, .net, F#

- Steven Jeuris
  - PhD student (ITU)
  - Human-Computer Interaction, Software Architecture for ABC

- Teaching Assistants
  - Jacob Benjamin Cholewa
  - Mikael Lindemann Jepsen
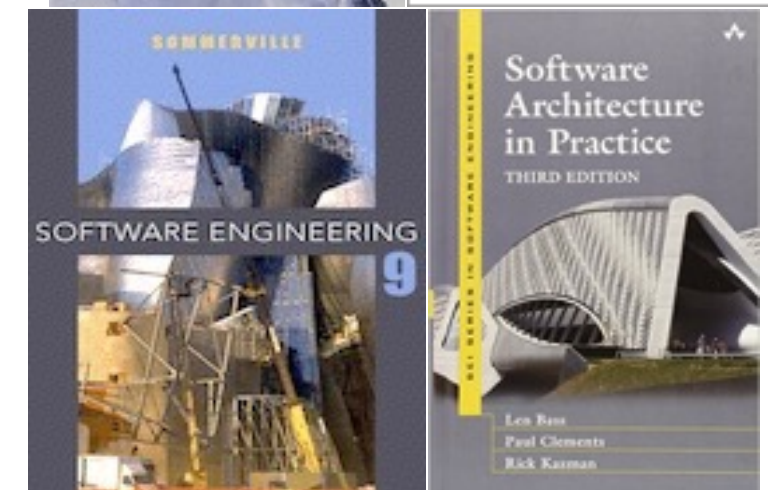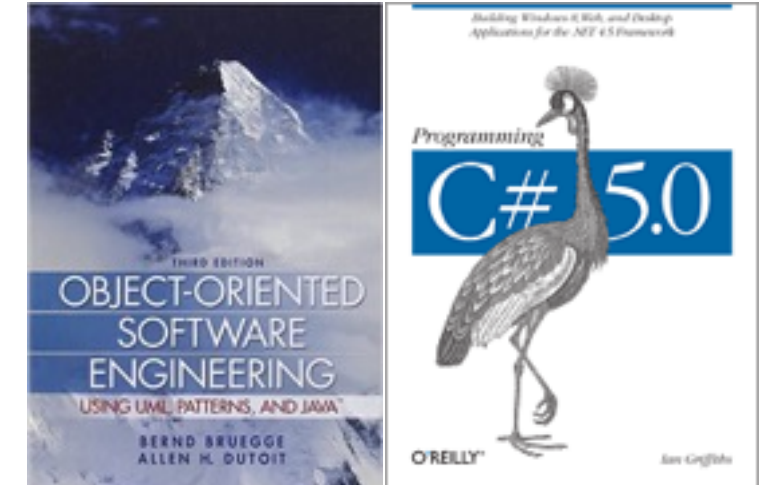 - Mikkel Bybjerg Christophersen

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The Goals of BDSA

The main objectives of this course are:

- to get you good at performing **object-oriented analysis and design** (OOAD) on medium-sized software systems,

- to make sure you know the **C# programming language, the .net architecture**, and the Visual Studio development environment,

- to ensure that you understand what **software architectures** (SA) are all about and how to use/talk about them,

- to see that you learn some of the fundamental principles and practices of basic **software engineering** (SE).

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Books and Literature

- Course Book
  - [OOSE] Object-Oriented Software Engineering, 3rd Edition by Bernd Bruegge and Allen H. Dutoit.

- C# & .net Literature
  - [PrC#] Programming C# 5.0 by Ian Griffiths, Machew Adams, Jesse Liberty.

- Additional Literature
  - [SE9] Software Engineering 9th ed by Ian Sommerville.
  - [SA2] Software Architecture in Practice (2nd ed.) by Len Bass, Paul Clements, and Rick Kazman.
  - [C#P] C# Precisely by P. Sestoft and Henrik I. Hansen.

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This is NOT (only) a programming course!

- Lectures
  - Rather "theoretical" in places (i.e. a lot of reading)
  - Keep up reading

- Assignments
  - 10 small assignments – two parts: OOSE + C#
  - assigned weekly, due weekly on Sunday midnight, feedbacks the week after
  - 8 out of 10 has to be approved to go to the exam

- Project
  - a large software development project in C#
  - 16/12 hand-in – STRICT DEADLINE
  - 18/12 project demonstrations room TBA

- Exam
  - January 18-22 2016
  - Oral, w. no preparation, 20 min.
  - Questions will be handed out on beforehand (2 weeks before exam)

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The Lecture Topics

I. part - mainly on Tuesdays
- Software Engineering
- Object-Oriented Analysis and Design using UML
- Software Design Patterns
- SE skills training
- Software Configuration
- Methodologies, Agile, Scrum, XP
- …

II. part - mainly on Thursdays
- .NET platform and architecture
- C# programming, incl. Visual Studio 2015
- C# frameworks (LINQ, WPF, WCF, …)

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The Week Organization

Publication of assignments

Tuesday 9:00 - 12:00   2A52   Exercises (mainly working on the project)

Tuesday 13:00 - 16:00   AUD2 (0A35)   OOSE, SA, and SE Concepts

Thursday 10:00 - 12:00   AUD1 (0A11)   C# and .net

Thursday 12:(45) - 16:00 2A52   Exercises

Sunday 24:00 - Weekly assignments submission deadline

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… what else?!

- Tools:
  - Visual Studio 2015
  - Latex
  - Design tool for UML

- Most material and information will be made available on the web site
  - https://learnit.itu.dk/course/view.php?id=3003956

- REMEMBER
  - Use the web/blog/discussion – not email!
  - Check the web site for changes/posts

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