

Component-based Software Engineering (SB4-KBS)

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Course Plan

The class will be Wednesdays 8:15 to 11:45 in room U110. Homework links will be available in the below table columns. It's **important** that you do your homework before class as the lab exercises require it!!!

W	Topic	Lecture	Labs	Literature
5	Introduction to CBSE	[Intro] [IntroPDF]	[IntroLab] [Asteroids]	Ch.1-7 in [BBB⁺00] Ch.8.2 in [MBN68]
6	Component-Oriented Design and Architecture using UML. Component-based and Data-oriented Game Development	[Design] [Games] [CBGames] [CBGamesPDF]	 [GamesLab]	Ch.1,4 in [MSS13] [Fow04] [Lora] [Lorb]
7	Component thinking in Java	[Contracts] [JavaComp] [JavaCompPDF] [ServiceLoader] [JavaCompRec]	[JavaLab] [DesignLab]	Ch.2 in [MSS13] [Szy97] [Orab]
8	NetBeans Platform	[NetBeans1] [NBM1Ppt] [NetBeans1Rec] [Neta] [Netb]	[NetBeansLab1] [MvnCLI]	Ch.2,3 in [Boc11]
9	NetBeans Dynamic Update	[NetBeans2] [NBM2Ppt] [NetBeans2Rec] [UML]	[NetBeansLab2] [NBMvn]	Ch.25 in [Boc11]
10	OSGi	[OSGiPpt] [OSGi] [OSGiRec]	[OSGiLab]	Ch.3.5,5,9 in [MSS13]
11	OSGi Dynamic update	[OSGiTools] [OSGiAsteroids] [OSGiPax]		
12	Netcompany Guest Lecture	[Guest] [GuestRec]	[MidEval]	
13	Spring.	[Spring] [SpringIntro] [SpringRuntime] [SpringRec]	[SpringLab]	Ch.3.4,8 in [MSS13] [Tul]
14	Testing Components	[Test] [TestExample]	[TestLab]	Ch.10 in [MSS13]
16	Jigsaw in JDK 9	[Jigsaw]		[Oraa] [Rei]
17	Exam Questions	[Exam]	[EndEval]	

FAQ

You can find frequently asked questions [\[Here\]](#).

Individual Mandatory Assignment

The individual mandatory labs will be part of your portfolio for the exam and have to be handed in according to the following deadlines.

April 10, 23:00 PM: Hand-in of [JavaLab], [NetBeansLab1], [NetBeansLab2] and [DesignLab]. For more information about the hand-in procedure see [\[Handin1\]](#).

May 9, 23:00 PM: Hand-in of [OSGiLab], [SpringLab] and [TestLab]. For more information about the hand-in procedure see [\[Handin2\]](#).

Literature:

- [BBB⁺00] Felix Bachmann, Len Bass, Charles Buhman, Santiago Comella-Dorda, Fred Long, John Robert, Robert C Seacord, and Kurt C Wallnau. Volume II: Technical Concepts of Component-Based Software Engineering, 2nd Edition. II(May):65, 2000. [\[Link\]](#).
- [Boc11] Heiko Bock. *The Definitive Guide to NetBeansTM Platform 7*. Apress, 2011. [\[Link\]](#).
- [Fow04] Martin Fowler. Inversion of Control Containers and the Dependency Injection pattern, 2004. [\[Link\]](#).
- [Lora] Richard Lord. What is an entity system framework for game development? [\[Link\]](#).
- [Lorb] Richard Lord. Why use an entity system framework for game development? [\[Link\]](#).
- [MBN68] M. D. McIlroy, J. M. Buxton, and P. Naur. Mass-produced software components. Conference proceedings (article), NATO Science Committee, Garmisch, Germany, January 1968. [\[Link\]](#).
- [MSS13] P. Manickam, S. Sangeetha, and S.V. Subrahmanya. *Component-Oriented Development and Assembly: Paradigm, Principles, and Practice using Java*. Infosys Press. Taylor & Francis, 2013. [\[Link\]](#).
- [Neta] Netbeans. Part 1: Runtime Container. [\[Link\]](#).
- [Netb] Netbeans. Part 2: Lookup API. [\[Link\]](#).
- [Oraa] Oracle. Project Jigsaw: Module System Quick-Start Guide. [\[Link\]](#).
- [Orab] Oracle. Trail: The Extension Mechanism. [\[Link\]](#).
- [Rei] Mark Reinhold. The State of the Module System. [\[Link\]](#).
- [Szy97] Clemens Szyperski. *Component Software: Beyond Object-Oriented Programming*. Addison-Wesley Professional, December 1997. [\[Link\]](#).
- [Tul] Jaroslav Tulach. Lookup and Spring. [\[Link\]](#).