

# Software Maintenance

## (SB-MAI-U1)

September 1, 2017

### Course Plan

The course will be on Tuesdays 08:15 to 11:45 in room U170. Homework links will be available in the below *Literature* and *Labs* column. Links to the lecture presentations can be found in the *Lecture* column. The main textbooks for the course will be [Raj13] and [Ker05], see the [Literature list].

Week	Topics	Labs	Lectures	Homework
36	Introduction	[IntroLab]; [Lea16]	[IntroLec]; [GitLec]	Ch.1,2 in [Raj13], [Sør15a, Sør15b, Sør15c];
37	JHotDraw and Design Patterns	CASELab	[CASELec]	Ch.1 in [GHJV94], [Ran11a, Ran11b, Pav11, Kir01, Sav01, Kai01]
38	Software change and Solo Iterative Process	[ChangeLab]	[ChangeLec], [SIPLec]	Ch.5-6 in [Raj13], [BMZ+05, BBPR05, RG04]
39	Feature and Concept Location	[CLLab]	[CLLec]	Ch.1-4 in [Ols12a], Ch.6 in [Raj13], [Ols12b]
40	Teamwork and Continuous Integration (CI)	[CILab]	[TeamLec], [CILec]	Ch.12-15 in [Raj13], [Fow06]
41	Impact and Feature Analysis	[AnalysisLab]	[AnalysisLec]	Ch.7 in [Raj13], Ch.5 in [Ols12a]
43	Verification 1: JUnit	[TestLab1]	[TestLec1]	Ch.10,17,11 in [Raj13], [JUn]
44	Actualization	[ActLab]	[ActLec1], [ActLec2]	Ch.8 in [Raj13], Ch.1-3 in [Ker05]
45	Refactoring 1: Low-level Refactorings	[RefactLab1]	[RefactLec1]	Ch.9 in [Raj13], Ch.4,5 in [Ker05], [Fow11], [Sou]
46	Verification 2: Acceptance Tests and BDD	[TestLab2]	[TestLec2]	[Mes03, Mes08], [Sch16], [Cos16]
47	Refactoring 2: High-level Refactorings	[RefactLab2]	[RefactLec2]	[Ker05]
48	Exam preparation		[Exam]	

### Portfolio Assignment

There will be two individual mandatory portfolio assignments that have to be accepted by the teacher in order to go to the exam.

I have shared an individual folder with each of you. Please copy the [Assignment Template] to your individual folder and use it to write your portfolio report. Your feedback will be in the form of this [Formative Rubric].

## Deadlines

The deadlines for the individual mandatory assignment have been set to:

**Week 43:** Hand-in of first part of report (Section 1-3, see [\[Assignment Template\]](#)).

**Week 47:** Hand-in of second part of report (Section 4-9).

## Literature

- [BBPR05] Jonathan Buckner, Joseph Buchta, Maksym Petrenko, and Václav Rajlich. JRipples: A Tool for Program Comprehension during Incremental Change. *IWPC*, pages 1–4, 2005. [\[PDF\]](#).
- [BMZ<sup>+</sup>05] Jim Buckley, Tom Mens, Matthias Zenger, Awais Rashid, and Günter Kniesel. Towards a taxonomy of software change: Research articles. *Journal of Software Maintenance and Evolution*, 17(5):309–332, September 2005. [\[PDF\]](#).
- [Cos16] Joel Costigliola. AssertJ, 2016. [\[HTML\]](#).
- [Fow06] Martin Fowler. Continuous Integration, 2006. [\[HTML\]](#).
- [Fow11] Martin Fowler. Refactorings in Alphabetical Order, 2011. [\[HTML\]](#).
- [GHJV94] Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides. *Design Patterns: Elements of Reusable Object-Oriented Software*. Addison-Wesley Professional, 1 edition, November 1994.
- [JUn] JUnit. JUnit Cookbook. [\[HTML\]](#).
- [Kai01] Wolfram Kaiser. Become a programming Picasso with JHotDraw, 2001. [\[HTML\]](#).
- [Ker05] Joshua Kerievsky. *Refactoring to patterns*. Addison-Wesley, 2005. [\[Book\]](#).
- [Kir01] Douglas Kirk. JHotDraw Pattern Language, 2001. [\[HTML\]](#).
- [Lea16] LearnCode. Github Tutorial, 2016. [\[Video\]](#).
- [Mes03] Gerard Meszaros. The Test Automation Manifesto, 2003. [\[PDF\]](#).
- [Mes08] Gerard Meszaros. xUnit Patterns, 2008. [\[HTML\]](#).
- [Ols12a] Andrzej Olszak. *Featureous: an integrated approach to location, analysis and modularization of features in java applications*. PhD thesis, 2012. [\[PDF\]](#).
- [Ols12b] Andrzej Olszak. Introduction to Featureous, 2012. [\[Video\]](#).
- [Pav11] Nikolaidis Pavlos. Software Requirements Specification for JHotDraw, 2011. [\[PDF\]](#).
- [Raj13] Vaclav Rajlich. *Software Engineering: The Current Practice*, volume 38. ACM, New York, NY, USA, November 2013. [\[Book\]](#).
- [Ran11a] Werner Randelshofer. JHotDraw 7 Documentation, 2011. [\[HTML\]](#).
- [Ran11b] Werner Randelshofer. The JHotDraw 7 Handbook, 2011. [\[PDF\]](#).
- [RG04] V. Rajlich and P. Gosavi. Incremental Change in Object-oriented Programming. *Software, IEEE*, 2004. [\[PDF\]](#).
- [Sav01] Jolita Savolskyte. Review of the JHotDraw framework, 2001. [\[PDF\]](#).
- [Sch16] Jan Schäfer. JGiven, 2016. [\[HTML\]](#).
- [Sør15a] Jan Sørensen. Introduction to Software Maintenance, 2015. [\[Video\]](#).
- [Sør15b] Jan Sørensen. Overview of Software Maintenance Syllabys, 2015. [\[Video\]](#).
- [Sør15c] Jan Sørensen. Review questions - Introduction to Software Maintenance, 2015. [\[HTML\]](#).
- [Sou] SourceMaking.com. Refactorings. [\[HTML\]](#).