

MODULE	MOD2 – Patterns and Reactive Systems											
SEMESTER	3	CREDITS (ECTS)	5	VALID AS OF	2016-08-01							
LECTURES / WEEK	2	PRACTICAL HOURS / WEEK	2	TOTAL EFFORT	140 hours							
AUTHORS	Pieter van den Hombergh											
CREDENTIALS	Based on previous versions											
INTRODUCTION AND MOTIVATION												
For a software engineer, understanding of the application programming interfaces (API) is very instrumental in increasing productivity. Modern API's, such as Java and .NET strongly use the Design Patterns as introduced by <i>Eric Gamma in the Gang of Four</i> (Gamma et al.) book. In the design process of IT-systems and software architectures, our focus will be on reactive systems. Concrete examples of Design Patterns will be illustrated using the Java JDK with a focus on the GUI implementation library JavaFX.												
LEARNING GOALS: THE STUDENT IS ABLE TO ...												
LG 1	State (Behaviour) Modeling											
LG 2	Idesign patterns											
List of Topics												
<ul style="list-style-type: none"> - Revisiting aspects learned in JAVA2/SEN1. - Apply and implement State in various alternatives. - A collection of the Gamma Design Patterns such as: State, Strategy, Observer, Adapter, Composite, Factory, Singleton, Façade, Proxy, Iterator, Template Method. 												
CONTRIBUTION TO FINAL COMPETENCE PROFILE (SEE OER)												
Learning Goal	<i>Architectural Layers (X)</i>					<i>Activities (1..3)</i>					our Professional	Research Skills
	terface User	es Business	tructure Infra-	Software	ng Hardware	Manage	Analyse	Advice	Design	Realise		
LG 1	x			X	x		1					
LG 2	x			X	x				1	1		
MODULE ASSESSMENT												
Learning Goal	<i>Type of Assessment</i>					<i>Grade for</i>		grad Fina % of e l				
	Written Exam	Oral Exam	Performance Assessment	Presentation incl Defense	Report	Individual	Group					
LG 1	X	x				X		50				
LG 2	X	x				X		50				
TEACHING MATERIAL												
<p>Freeman, Elisabeth et al.: Head First Design Patterns. O' Reilly & Associates, Inc., 2004, ISBN 0596007124, chapters 1-12 Addison-Wesley Professional, November 1994, ISBN 0201633612</p> <ul style="list-style-type: none"> - McLaughlin, Brett D./Pollice, Gary/West, Dave: Head First Object-Oriented Analysis and Design: A Brain Friendly Guide to OOA&D (Head First). O'Reilly Media, Inc., 2006, ISBN 0596008678, chapter 8. - Vigerschow, Uwe: Objektorientiertes Testen und Testautomatisierung in der Praxis. Konzepte, Techniken und Verfahren. 1st edition. Dpunkt Verlag, 2005, ISBN 3898643050, Chapter 9. 												

PRIOR KNOWLEDGE

JAVA1 (required), MOD1(required), SEN1(required), JAVA2 (required)

ADDITIONAL INFORMATION (ON GRADING, ASSESSMENTS, RETAKES, PRACTICAL PARTS, ..)

The tests produce two grades: MOD2PI13: Practical part. 40%, and MOD2TI13: Theory 60%.
According to the study regulations, both grades must be ≥ 5.5 .