MODULE	**ESD – Enterprise Software Development**				
SEMESTER	7	***CREDITS (ECTS)***	5	***VALID AS OF***	2022-09-01
LECTURES / WEEK	2	***PRACTICAL HOURS / WEEK***	2	***TOTAL EFFORT***	140 hours
AUTHORS	Martijn Bonajo, Lennart Tange				
CREDENTIALS	Richard van den Ham, Martijn Bonajo				

INTRODUCTION AND MOTIVATION

Software development is not the only part of the story. Applications / deliverables / solutions should be tested, deployed etc. The application should be adaptable to new requirements, and nowadays very quickly too. These aspects determine the application technology / architecture / frameworks / processes.

In this module the students investigate **in pairs** an architectural aspect / technology / framework / business technology with architectural implications, for good or bad, and present their findings and learnings in a workshop, visited by the remainder of the class.

The topics are approved by the lecturers and wisely chosen, considering the current market, enterprise, business and technology demand regarding professional IT people. The main objective is that the students work on a topic/technology/framework/business that they will most probably face in their upcoming career.

In the startup sessions students and tutors decide on the topics.

As part of Professional Skills, we expect an active contribution, proper communication, a quantitatively adequate amount of effort and an adequate availability to enable proper group work.

In case a student shows a clear lack of professional skills, the student will be invited for a meeting with TWO involved lecturers. During that meeting, after fair hearing, the student can get an official warning. This means that behaviour must improve within two lessons and specific conditions will be set and documented by the lecturers. If the student does not fulfil the mentioned conditions within these two lessons(according to both lecturers), “Professional Skills” is rated as “INSUFFICIENT” during the course and the student therefore will be removed from the project.

LEARNING GOALS: THE STUDENT IS ABLE TO …

LG 1	… investigate aspects of modern software and system architectures, technologies, frameworks, or business technologies.
LG 2	… prepare and execute a workshop to introduce the technology to peers (flip the classroom with preparation of exercises).
LG 3	... show Professional Skills.

List of Topics (historic)

- JEE, Spring, UI Testing with Arquillian, State machine frameworks
- Microservices and docker
- Continuous integration with Jenkins, Github actions
- AKKA framework
- BPMN frameworks
- Enterprise integration and bus systems
- New paradigmas in Java, streams and functional programming style.

CONTRIBUTION TO FINAL COMPETENCE PROFILE (SEE OER)

Learning Goals	*Architectural Layers (X)*					*Activities (1..3)*						
	User Interaction	*Business Processes*	*Infra-structure*	*Software*	*Hardware Interfacing*	*Manage*	*Analyse*	*Advice*	*Design*	*Realise*	*Professional Behaviour*	*Research Skills*
LG 1		X	X	X			3	3				3

LG 2											3	
LG 3											3	

MODULE ASSESSMENT

Learning Goals	*Type of Assessment*					*Grade for*		*Final grade*
	Written Exam	*Oral Exam*	*Performance Assessment*	*Presentation incl Defense*	*Report*	*Individual*	*Group*	
LG 1				x	x		(in pairs)	100
LG 2				x	x		(in pairs)	
LG 3						x		

TEACHING MATERIAL
Whatever suits the topic at hand.
PRIOR KNOWLEDGE
Semesters 1-4 for SE or BI.
ADDITIONAL INFORMATION (ON GRADING, ASSESSMENTS, RETAKES, PRACTICAL PARTS, ..)
The students work in pairs. When the total number of students is odd, there will be at most one group of 3 or one group of 1 student(s). The students can provide three topics. The tutors will do their best to match these preferences into groups. If the topics are not suitable according to the teachers a topic will be chosen for the group. The grading will be done based on the Presentation/Workshop, research, and material the students provide to the other students and lecturers. ***PRESENCE IS MANDATORY DURING THE WORKSHOPS (AS PART OF LG 3).*** “Professional Skills” is assessed by lecturers and rated as “Sufficient” or “Insufficient”. In case it’s rated as “Insufficient”, the module cannot be passed successfully anymore and must be retaken in its entirety.