

Department	09 Engineering and Management
Course title	Software Engineering
Course number	
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	<p>Competence Level 1 "Review": Students remember technical terms and acronyms of the trade.</p> <p>Competence Level 2 "Understand": Students understand roles, process definitions, and the problems they address •Students understand the purpose of SDLC tools and deliverables</p> <p>Competence Level 3 "Apply": •Students are able to apply software engineering methods and tools to create deliverables (such as requirements documentation, specification, models, estimates, code)</p> <p>Competence Level 4 "Analyse": •Students are able to derive requirements from a product vision. •Students are able to derive a functional breakdown and basic architecture from requirements</p> <p>Competence Level 5 "Assess": •Students are able to estimate the amount of work need-ed. •Students are able to assess an actual software develop-ment process and point out issues</p>
Prerequisites	Basis knowledge of and fundamentals in mathematics, data structures and algorithms
Recommended reading	<p>SOMMERVILLE, Ian. Engineering Software Products: An Intro-duction to Modern Software Engineering. Pearson, 2020. ISBN 978-1-292-37635-6</p> <p>DAVIS, Barbee 97 Things Every Project Manager should know. O'Reilly, 2009. ISBN †978-0596804169</p> <p>KIM Gene et al. DevOps Handbook 2nd ed. IT Revolution Press 2021, ISBN 978-1950508402</p> <p>MILES, Russ Learning UML 2.0: A Pragmatic Introduction to UML. O'Reilly, 2006. ISBN †978-0596009823</p> <p>MONSON-HAEFFEL, Richard 97 Things Every Software Archi-tect should know. O'Reilly, 2009. ISBN †978-0596522698</p> <p>PATTON, Jess et al. User Story Mapping. O'Reilly, 2014. ISBN 978-1491904909</p>
Teaching methods	Seminars, exercises
Assessment methods	<p>Modul work, project work</p> <p>Students are expected to work in groups to complete several practical assignments on the various phases of the SDLC, culminating in a brief written report and presentation. Details will be provided in due course.</p>
Language of instruction	English
Name of lecturer	Prof. Dr. Klaus Brunner
Email	klaus.brunner@hm.edu
Link	https://wi.hm.edu/kontakte_de/phonebook_detailseite_96771.de.html
Course content	<ul style="list-style-type: none"> •Introduction to the software development lifecycle (SDLC). •Fundamentals of requirements engineering. •Introduction to modelling techniques (UML). •Basic knowledge of software architecture (components and interfaces). •Introduction to quality control of software (verification and validation, testing) •Introduction to software development process models (traditional and agile) •Introduction and practical use of software engineering tools for requirements management, modelling, version control, build, test, and deployment.

Remarks