

# Module Description/Syllabus

BE  IM  HM  CfPS



<b>Module</b>	Data Science Cases, Ethics and Data Privacy			Module-Number	
<b>Course Title</b>	Data Science Cases, Ethics and Data Privacy			Overall grade weighting (in %)	2,4
<b>Recommended alternative modules or courses</b>					
<b>Course of Studies</b>	Data Science Management				
<b>Examination No. (SuP)</b>	100698	<b>valid SER</b>	20212 v. 28.04.2022		
<b>Mode of Study</b>	<input checked="" type="checkbox"/> full-time <input type="checkbox"/> part-time				
<b>Study Cycle</b>	<b>EQF-Level</b>	<input checked="" type="radio"/> Bachelor <input type="radio"/> Master			
<b>Frequency</b>	<input type="radio"/> winter term <input checked="" type="radio"/> summer term <input type="radio"/> each semester				
<b>Language Competence Level and Course code SAP</b>	<input type="checkbox"/>				
<b>Responsible for the module</b>	Prof. Dr. Klaus Lang				
<b>Lecturer/s</b>	Prof. Dr. Klaus Lang				
<b>Typ of course</b>	<input checked="" type="radio"/> compulsory <input type="radio"/> optional				
<b>Mode of delivery</b>	Blended learning, project-based learning				
<b>Language of instruction</b>	<input checked="" type="radio"/> English <input type="radio"/> German		<b>Level of course</b>	6th semester	
<b>Teaching Methods</b>	Flipped classroom			<b>Duration</b>	1 semester
	Case studies				
	Group Work				
<b>Work parameters</b>	<b>contact hours in lecture form</b>	<b>exercises (hours)</b>	<b>self-studies (hours)</b>	<b>total (hours)</b>	
	80		70	150	
	<b>eLearning (hours)</b>	<b>examination preparation (hours)</b>	<b>Transfer (hours)</b>	<b>Units ("UE")</b>	
				200	
<b>Number of participants min./max.</b>	10 / 40	<b>ECTS-Points</b>	05	<b>Volume</b> (hours per semester week)	04
<b>Use for other studies</b>	Could be offered as an elective for the bachelor's degree program "Information Management Automotive"				

<p><b>Prerequisites/ Required competencies</b></p>	<p>Knowledge about: Software engineering and cooperative project management Software engineering project: practical application of theory Big data</p>
<p><b>Learning Outcome</b></p> <p><b>1) Knowledge</b> <b>2) Skills</b> <b>3) Responsibility and autonomy</b></p> <div data-bbox="193 1084 529 1155" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>Description eight EQF Levels and Learning Outcome (1-3)</p> </div>	<p>Upon successful completion of the course students will be able to:</p> <p>Data thinking, strategy and Use Cases</p> <ul style="list-style-type: none"> <li>- to identify use cases with business impact</li> <li>- to develop user centric data strategies</li> <li>- to explain the principles of and concepts of Data Thinking</li> <li>- to know major use cases for various industries (e.g Manufacturing, e-Commerce, Transport and Logistics) and business processes</li> </ul> <p>Design thinking project: Building prototypes by applying design thinking principles</p> <ul style="list-style-type: none"> <li>- ideate and explore use cases</li> <li>- prototype (proof of concept)</li> <li>- measure business impact</li> </ul> <p>Ethics framework and limits</p> <ul style="list-style-type: none"> <li>- explain the challenges, conflicts and processes for ethical decision making</li> <li>- apply ethics frameworks</li> <li>- handle challenges regarding data privacy</li> <li>- to explain legal requirements in Germany and world-wide</li> </ul> <p>Personal competences</p> <ul style="list-style-type: none"> <li>- to learn critical thinking skills and the competence to solve problems in the world</li> <li>- to present solutions on boardroom level</li> <li>- to handle negative feedback</li> </ul>
<p><b>Content</b></p>	<p>Data thinking, strategy and Use Cases</p> <ul style="list-style-type: none"> <li>- Identification of Use Cases with business impact</li> <li>- Data strategies: Placing the needs of the user in the center</li> <li>- Principles of and concepts of Data Thinking</li> <li>- Use cases by industry: e.g. manufacturing, e-commerce, transport and logistics</li> </ul> <p>Design thinking project: Building prototypes by applying design thinking principles</p> <ul style="list-style-type: none"> <li>- Ideation &amp; exploration</li> <li>- Prototyping &amp; proof of concept</li> <li>- Measuring business impact</li> </ul> <p>Ethics framework and limits</p> <ul style="list-style-type: none"> <li>- Ethics frameworks</li> <li>- Data privacy awareness</li> <li>- Legal requirements in Germany and world-wide</li> </ul>

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<b>Particular admission requirements (if applicable)</b>	
<b>Curriculum semester, in which the student has to be mandatorily registered for the first attempt of examination</b>	9th semester
<b>Assessment method(s)</b>	Portfolio assessment, see course catalog
<b>Assessment criteria</b>	
<b>Required reading resources</b>	Longbing Cao. Data Science Thinking, The Next Scientific, Technological and Economic Revolution, Springer, 2018
	Martin Treder. Becoming a data-driven Organisation, Unlock the value of data, Springer, 2019
	Wunder, Thomas. Essentials of Strategic Management: Effective Formulation and Execution of Strategy, Schäffer-Poeschel, 2016
	Michael Lewrick, Patrick Link, Larry Leifer. The Design Thinking Toolbox, A Guide to Mastering the Most Popular and Valuable Innovation Methods, Wiley, 2020
<b>Additional (module) information</b>	
<b>Document Version</b>	1.0
<b>Document date</b>	
<b>Document was created by</b>	Klaus Lang; English version by Alina Geßler
<b>Valid from</b>	01.01.2023
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	<input type="button" value="save"/> <span style="margin-left: 200px;"><input type="button" value="send"/></span>