

Module description: Summer School	
Module Code	w.MA.XX.SUSC.20HS
ECTS Credits	3
Language of Instruction/Examination	English
Module Description	<p>Our intensive 10-day Summer and Winter Schools are held at leading international partner universities during ZHAW's lecture-free periods. Past sessions have taken place in France, India, Czechia, and the United States. For more detailed information of the summer/winter schools, please visit: www.baisummer.com Each school explores a focused theme within data science and digital transformation—such as health analytics, smart cities, financial services, and supply chain management—through a hands-on curriculum that blends theory with practical applications in real-world business contexts. Students work on-site with companies and local partners to analyze challenges and develop solutions using current AI methods, such as machine learning, decentralized systems, and agent-based models. This active-learning approach fosters both technical expertise and cross-cultural collaboration. Program timing aligns with ZHAW's examination calendar: Winter Schools run in weeks 5–7 or 6–8, Summer Schools in weeks 26–27 or 27–28. Each session features a unique curriculum, enabling students to attend two different schools during the Master's program. These immersive programs complement on-campus modules by providing applied experience in global innovation ecosystems. A minimum of 20 participants is required per school to ensure dynamic group interaction and personal engagement with faculty and industry mentors. If you are interested in this module, please contact the Head of Program early to register. For further details or to enroll, visit www.baisummer.com or contact the module coordinator.</p>
Organizational Unit	Institut für Wirtschaftsinformatik
Module Coordinator	Christian Hitz
Program and Specialization	<ul style="list-style-type: none"> • Business Information Technology
Legal Framework	Academic Regulations MSc in Business Information Technology dated 22.08.2019, Appendix to the Academic Regulations for the degree program in Business Information Technology, first adopted on 10.07.2012
Module Category	Module Type Compulsory Elective
Prerequisite Knowledge	
Contribution to Program Learning Objectives (by the concerned Module)	<ul style="list-style-type: none"> • Professional Competence • Methodological Competence • Social Competence • Self-Competence

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Contribution to Program Learning Objectives	Professional Competence <ul style="list-style-type: none"> • Knowing and Understanding Content of Theoretical and Practical Relevance • Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance • Evaluate Content of Theoretical and Practical Relevance Methodological Competence <ul style="list-style-type: none"> • Problem-Solving & Critical Thinking • Scientific Methodology • Work Methods, Techniques, and Procedures • Information Literacy • Creativity & Innovation Social Competence <ul style="list-style-type: none"> • Written Communication • Oral Communication • Teamwork & Conflict Management • Intercultural Insight & Ability to Change Perspective Self-Competence <ul style="list-style-type: none"> • Self-Management & Self-Reflection • Ethical & Social Responsibility • Learning & Change
Module Learning Objectives	<p>Students...</p> <ul style="list-style-type: none"> • are familiar with the important technical terms related to information systems and information technologies used in business intelligence and performance. • explain the interrelationships between various technical terms. • analyze specific business issues based on the knowledge structure taught. • apply business intelligence tools and methods in short practical exercises. • develop concrete solutions to business issues. • evaluate solutions for specific issues on the basis of the criteria taught. • weigh up the advantages and disadvantages of business intelligence and performance management systems in the creation of competitive advantage. • demonstrate the knowledge they have acquired in presentations and discussions. • work in groups to achieve a shared goal. • develop a willingness to engage more deeply with selected business intelligence and performance management approaches in an operational context. • appreciate different points of view in the evaluation of solution strategies and problem areas.
Module Content	<ul style="list-style-type: none"> • Application of information systems at various management levels of a corporation • Defining the scope of transactional and analytical information systems • Architecture and components of business intelligence and corporate performance management systems • Information processes and forms of organization of operational reporting • Reporting, budgeting, and forecasting using integrated enterprise systems • Processes of data collection, data reduction, and data analysis • Basic methods of data mining, data analysis, and information provision • Practical handling of IT-based systems to assist decision-making • Innovations in the field of business intelligence • Maturity level models of business intelligence solutions • Business intelligence and data governance • Enhancements to internal reporting of external data and information flows (Web 2.0, big data, Industry 4.0) • Abolition of the separation of transactional and analytical information systems • Process mining methodologies and tools
Links to other modules	<p>This module is linked to the following modules:</p>
Digital Learning Resources	<ul style="list-style-type: none"> • Reader • Teaching Videos • Teaching Materials • Practice and Application Exercises (with Key) • Case Studies (with Key)

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Methods of Instruction	<ul style="list-style-type: none">• Lecture• Exercises• Problem-Oriented Teaching• Explorative Learning• Case Studies• Interactive Instruction• Project Work• Application Tasks		Social Settings Used: <ul style="list-style-type: none">• Group Work• Pair Work• Individual Work																															
Type of Instruction	<table><tr><td></td><td>Classroom Instruction</td><td>Guided Self-Study</td><td colspan="2">Autonomous Self-Study</td></tr><tr><td>Lecture</td><td>-</td><td>-</td><td colspan="2"></td></tr><tr><td>Excercise</td><td>-</td><td>-</td><td colspan="2"></td></tr><tr><td>Project Work</td><td>-</td><td>-</td><td colspan="2"></td></tr><tr><td>Seminar</td><td>70 h</td><td>20 h</td><td colspan="2"></td></tr><tr><td>Total</td><td>70 h</td><td>20 h</td><td colspan="2">0 h</td></tr></table>					Classroom Instruction	Guided Self-Study	Autonomous Self-Study		Lecture	-	-			Excercise	-	-			Project Work	-	-			Seminar	70 h	20 h			Total	70 h	20 h	0 h	
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Performance Assessment	<table><tr><td colspan="2">End-of-module exam</td><td>Form</td><td>Length (min.)</td><td>Weighting</td></tr><tr><td colspan="2">Written exam</td><td>Specified documentation</td><td>0</td><td>100.00</td></tr><tr><td colspan="2">Permitted Resources</td><td>No calculator</td><td colspan="2">With dictionary</td></tr></table> <table><tr><td>Others</td><td>Assessment</td><td>Format</td><td>Length (min.)</td><td>Weighting</td></tr><tr><td>Talk/oral presentation</td><td>Pass/Fail</td><td>Gruppenarbeit</td><td>30</td><td>0.00</td></tr></table>				End-of-module exam		Form	Length (min.)	Weighting	Written exam		Specified documentation	0	100.00	Permitted Resources		No calculator	With dictionary		Others	Assessment	Format	Length (min.)	Weighting	Talk/oral presentation	Pass/Fail	Gruppenarbeit	30	0.00					
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Talk/oral presentation	Pass/Fail	Gruppenarbeit	30	0.00																														
Classroom Attendance Requirement	80%																																	
Compulsory Reading																																		

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Recommended Reading	<ul style="list-style-type: none"> • M. Sutton T. Sutton O. Dassau. A Gentle Introduction to GIS. https://download.osgeo.org/qgis/doc/manual/qgis-1.0.0_a-gentle-gis-introduction_en.pdf. • David Chappell. INTRODUCING AZURE MACHINE LEARNING. http://www.davidchappell.com/writing/white_papers/Introducing-Azure-ML-v1.0--Chappell.pdf. • Simeon Kostadinov. The Future of Lending Money Is Deep Learning. https://towardsdatascience.com/the-future-of-lending-money-is-deep-learning-61a9e21cf179. • Konstantin Didur. Machine learning in finance: Why, what & how. https://towardsdatascience.com/machine-learning-in-finance-why-what-how-d524a2357b56. • Ajay Agrawal, Joshua Gans und Avi Goldfarb. Prediction machines: the simple economics of artificial intelligence. ISBN 9781633695672. • Cathy O'Neil. Weapons of math destruction: how big data increases inequality and threatens democracy. ISBN 9780553418811. • Longbing Cao. „Data Science: Nature and Pitfalls“. https://ieeexplore.ieee.org/document/7579413. • Sebastian Sauer. Moderne Datenanalyse mit R. ISBN 9783658215873. https://www.springer.com/de/book/9783658215873. • Jesse McWaters. The New Physics of Financial Services – How artificial intelligence is transforming the financial ecosystem. https://www.weforum.org/reports/the-new-physics-of-financial-services-how-artificial-intelligence-is-transforming-the-financial-ecosystem/. • Longbing Cao. Data science thinking. The next scientific, technological and economic revolution. ISBN 9783319950914. DOI: 10.1007/9783319950921. • Konstantin Didur. Machine learning in finance: Why, what & how. https://towardsdatascience.com/machine-learning-in-finance-why-what-how-d524a2357b56. • M. Sutton T. Sutton O. Dassau. A Gentle Introduction to GIS. https://download.osgeo.org/qgis/doc/manual/qgis-1.0.0_a-gentle-gis-introduction_en.pdf. • Lee Schlenker. The Ethics of Data Science. https://towardsdatascience.com/the-ethics-of-data-science-e3b1828affa2. • Longbing Cao. „Data Science: Challenges and Directions“. DOI: 10.1145/3015456. • Charu C. Aggarwal. Data mining: The textbook. ISBN 9783319141411. https://doi.org/10.1007/978-3-319-14142-8. • Raj Shroff. How Are Insurance Companies Implementing Artificial Intelligence (AI). https://towardsdatascience.com/how-are-insurance-companies-implementing-artificial-intelligence-ai-aaf845fce6a7. • Raghav Bharadwaj. AI for Banking in Europe 3 Current Applications. https://emerj.com/ai-sector-overviews/ai-for-banking-in-europe-3-current-applications/. • Raj Shroff. How Are Insurance Companies Implementing Artificial Intelligence (AI). https://towardsdatascience.com/how-are-insurance-companies-implementing-artificial-intelligence-ai-aaf845fce6a7. • Ensemble Machine Learning Cookbook: Over 35 Practical Recipes to Explore Ensemble Machine Learning Techniques Using Python. ISBN 978-1-78913-660-9. https://ebookcentral.proquest.com/lib/zhaw/reader.action?docID=5667626. • Wil van der Aalst. Process mining: Data science in action. ISBN 9783662498514. https://doi.org/10.1007/978-3-662-49851-4.
Comments	<p>If you are interested in this module, register early on Moodle for the respective group. For full details about the winter or summer school you are interested in, send an email to the module coordinator. For more information and to enroll for the next summer/winter schools, please visit: www.baisummer.com</p>