

Certificate Examination Regulations (CER)* & Course Description

Course RESPONSIBLE DATA SCIENCE (DAS)					
I. COURSE DESCRIPTION					
Provider	Steinbeis School of Sustainable Innovation and Transformation GmbH (SIT), www.steinbeis-sit.de				
Fields of competences	Management X	Personal Development	Education Management	Healthcare	Technology & Digitalization X
Location	Berlin & online				
Graduation	Diploma of Advanced Studies (DAS) X	Certificate of Advanced Studies (CAS)	Diploma of Basic Studies (DBS)	Certificate of Basic Studies (CBS)	Short term course (MC)
Description & Qualification Goals	<p>The DAS program focuses on developing core data science competencies, equipping learners with the necessary tools and insights for application in alignment with human values and ethics. It positions data science, alongside related skills, tools, and competencies, as a key contributor to a sustainable future.</p> <p><u>Target group:</u> designed for professionals across diverse sectors seeking to build core competencies in data science and ESG principles and regulations with a focus on responsible and value-driven practices. Key participants include those looking to implement analytics-based strategies, sustainable practices, and emerging technologies to enhance organizational performance, regulatory compliance, and climate neutrality.</p> <p><u>Learning objectives:</u></p> <ul style="list-style-type: none"> ▪ know the core principles of data driven decision making, sustainability considerations, and the impact of data science on society ▪ explain requirements & objectives of sustainable finance, understanding how they aim to enhance transparency in sustainability reporting and investments ▪ apply inferential statistics, SQL, Python, SPSS in real-world data science projects, demonstrating proficiency in data manipulation, visualization, and analysis ▪ use ESG (environmental, social, governance) data in practical scenarios, such as investment analysis or sustainability assessments, applying methods to interpret and leverage this data effectively ▪ analyse data science applications to identify potentials for organizational transformation & societal impact, focusing on sustainable finance, EU AI Act implications, and corporate digital responsibility ▪ evaluate the ethical implications of data science projects, using the EU AI Act and principles of corporate digital responsibility as benchmarks ▪ design & implement data science solutions, responsible, sustainable, aligned with ethical standards <p>Additionally, based on the chosen optional pathway, learners will build competencies in (1) machine learning, deep learning, advanced Python programming OR (2) Green & Digital Transformation tools and strategies OR (3) AI-enhanced, and cloud-based data science solutions</p>				

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Admission requirements	completion of the first three obligatory CAS courses <i>OR</i> equivalent previously acquired qualifications				
Format	Classroom X	Virtual Classroom X	E-Learning	Peer learning	other
Language	English or German				
Examination	Written Exam	Presentation X	Case Study X	Transfer Paper X	Project Study
Workload	Total (hours) 1200	course time 380	self study time 380	Transfer time 440	

II. CONTENT		RESPONSIBLE DATA SCIENCE (DAS)			
Obligatory Modules					
MODULE	KEY TOPICS	Course (hours)	Self study	Transfer	
Module 1. Data Driven Organizational Transformation (CAS1)	<ul style="list-style-type: none"> ▪ Power of Data for Organizational Transformation: Introduction to Green + Digital Transition; Building Data-Driven Organization; Translate business problems into data hypotheses; Explore describe datasets with visualization; Excel Fundamentals + statistics of a data set ▪ Intelligent Data Analysis & Storytelling: Data Storytelling + Performance Metrics; Master data visualization techniques with Tableau user ▪ Data Analysis visualization using Microsoft Power Bi 	100	100	100	
Module 2. Data Science Foundations: ESG Data Centered (CAS2)	<ul style="list-style-type: none"> ▪ Coding Essentials with ESG Data: Essential SQL Skills; Basic Python - practiced on ESG related Data ▪ Statistical Foundations: Inferential Statistics ▪ SPSS Statistics-analyse ▪ AI-driven Data Science as a Catalyst for Sustainable Transition: Application of AI-techniques in enhancing data analysis and decision-making processes 	100	100	100	
Modul 3. Digital Responsibility: Sustainable Practices & Regulations (CAS 3)	<ul style="list-style-type: none"> ▪ Integrative Responsible Management: Compliance & Responsibility, Ethics in Data Science, Corporate Digital Responsibility and AI Alignment ▪ ESG & Sustainability: Key elements and conceptual frameworks, The rapidly changing context of finance, Sustainable Finance Regulation (CSRD, SFDR, EU), ESG Data, EU AI Act, Disruptive technologies as opportunity for Sustainable Finance 	100	100	100	

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II. CONTENT		RESPONSIBLE DATA SCIENCE <i>(continued)</i>		
Optional specialization modules				
MODULE	KEY TOPICS	Course (hours)	Self study	Transfer
Modul 4 – Option (1). Accelerated Data Science (CAS 4)	<ul style="list-style-type: none"> ▪ Machine Learning in Data Science: Introduction to supervised learning; Introduction to unsupervised Learning; Identify the current and potential applications of DL, ML, and AI; Artificial Neural Network and Deep Learning ▪ Data Science Advancement: AI-driven Methods and Strategies; Data Scientist with Python Libraries; Advanced SQL Skills; Introduction LLM models; Prompt engineering; Open AI; Gemini in Google cloud 	80	80	140
Modul 4 – Option (2). Green & Digital Transformation (CAS5)	<ul style="list-style-type: none"> ▪ Navigating Green & Digital Transformation: Key Technologies driving Innovation and Transformation- AI, IoT, Cloud Computing; Digital Project Management and Venture Building; Planning + Managing successful Green and Digital Transition; Augmenting employee data literacy; System Theory; Sustainable Wellbeing; Governance and Ownership ▪ Digital Sustainability Strategies: Sustainability + Finance Evolution, Investing Forecast, Business and Sustainability Link, Case Study Application: Industry-specific sustainability strategy 	80	80	140
Modul 4 – Option (3). AI-Enhanced Low-Code Data Science (CAS6)	<ul style="list-style-type: none"> ▪ Discovering AI: Foundations of AI - Understanding the roles of algorithms, models, and data in AI applications; Generative AI and Prompt Engineering; Cloud-based AI Services - Open AI in Azure, Gemini in Google Cloud, Microsoft Copilot Studio, Azure AI Studio; Low-Code and No-Code Solutions ▪ Machine Learning in Data Science: Introduction to supervised learning: Regression, Classification, Decision trees; Introduction to unsupervised Learning: Clustering, Model evaluation; Identify the current and potential applications of DL, ML, and AI; Artificial Neural Network and Deep Learning 	80	80	140

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