

Module description: Technology Field Analysis			
Module Code	t.BA.EU.TEFA.19HS		
ECTS Credits	4		
Language of Instruction/Examination	German		
Organizational Unit	INE		
Module Coordinator	Silvia Ulli-Beer		
Deputy Module Coordinator	Juliana Victoria Zapata Riveros		
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.		
Module Characteristic	Type 2a 4 consecutive lecture lessons per semester week and class		
Module Description	The Technology Field Analysis module provides prospective engineers with the essential methodical skills crucial for technically oriented companies to be able to identify promising development directions for service and product improvements in a dynamic market environment.		
Module Content	<p>Various drivers and barriers as well as key perspectives and theories are introduced for the technology field analysis, which explain the investment, acceptance and dissemination of desirable technologies for sustainable development. A special focus is placed on the decarbonization of industries.</p> <p>A diverse toolbox is available for the technology field analysis. In the lecture, selected empirical methods are introduced in order to determine the requirements for new services or products and their necessary environmental conditions so that they meet the needs of users and customers, spread more quickly and make a contribution to sustainable development.</p> <p>The module teaches how to develop science-based research approaches and instruments in order to collect reliable data to increase acceptance in the broadest sense.</p>		
Prerequisite Knowledge	none		
Learning Objectives (Competences)	Students...	Competencies	Taxonomies
	can use different categories of drivers and barriers as well as disciplinary theories to explain why socially desired decarbonization technologies are spreading only slowly.	F, M	K2, K3, K4
	can work in a team to develop and describe a science-based research approach to identify or evaluate drivers and barriers of a specific decarbonization solution.	F, SO, M	K3, K4, K5
	can work in a team to develop and describe a scientific research tool to collect robust empirical data from stakeholders of a decarbonization solution.	M, F, SO	K3, K4, K5
	Can assess the extent to which technology field analyses are robust and scientifically sound and identify “fake analyses”.	SE	K6

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Performance Assessment	End-of-module exam	Assessment	Length (min.)	Weighting	Form	
	written exam	Grade	60	60	acc. to module agreement	
	Performance assessment during the semester		Assessment	Length (min.)	Weighting	Form
	report		Grade		40	acc. to module agreement
Classroom Attendance Requirement	None					
Learning material	<ul style="list-style-type: none"> • Khan, S. & Kaur, P. & Jabeen, F. & Dhir, A. (2021). Green process innovation: Where we are and where we are going. <i>Business Strategy and the Environment</i>, (30), pp. 3272-3296. DOI: 10.1002/bse.2802. • Hafner, S. & Speich, M. & Bischofberger, P. & Ulli-Beer, S. (2022). Governing industry decarbonization: Policy implications from a firm perspective. <i>Journal of Cleaner Production</i>, https://doi.org/10.1016/j.jclepro.2022.133884. • Speich, M. & Ulli-Beer, S. (2023). Applying an ecosystem lens to low-carbon energy transitions: A conceptual framework. <i>Journal of Cleaner Production</i>, (398), https://doi.org/10.1016/j.jclepro.2023.136429. 					
Comments						