Module description: Data Products and Services

Module Code	t.BA.DS.DPS-EN.20HS
ECTS Credits	4
Language of Instruction/Examination	English
Organizational Unit	IDP
Module Coordinator	Jochen Wulf
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 DPS module covers analytical principles for the management of data products and services. Methods for the management of service potentials (e.g. implementation of price differentiation, queue management), service processes (e.g. business process modelling, derivation of business process models from data) and service performance (e.g. modelling of customer lifetime value) are discussed. In addition, students will be able to implement the presented methods and algorithms in Python using concrete application scenarios and sample data.
Module Content	**Fundamentals of data products and services** • Definition and typology of data products • Definition of services • Data mining cycle **Data-driven management of service potential** • Queue models, influence of process variability • Revenue management through price differentiation • Booking control **Data-driven management of service processes** • Introduction to Process Mining • Business process modelling with Petri nets • Process Discovery Approaches • Methods for measuring process conformity • Organizational mining **Data-driven management of service performance** • Approaches to modelling the customer lifetime value (CLV) • Data Envelopment Analysis (DEA)
Prerequisite Knowledge	Basic knowledge of Python Basic knowledge of probability theory Basic knowledge of linear algebra Basic knowledge of calculus

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Learning Objectives (Competences)	Students...		Competencies	Taxonomies
	You will be able to design and implement analytical methods for managing service performance.		F	K3
	You understand the various challenges of managing data products and services.		F	K2
	You will be able to design and implement analytical methods of process management.		F	K3
	You will be able to design and implement analytic methodology for managing service potential.		F	K3

Performance Assessment	End-of-module exam	Assessment	Length (min.)	Weighting	Form
	written exam	Grade	90	90	acc. to module agreement

	Performance assessment during the semester	Assessment	Length (min.)	Weighting	Form
	Weekly Exercises	Grade		10	acc. to module agreement

Classroom Attendance Requirement	None
Learning material	• Van Der Aalst, Wil. Process mining: discovery, conformance and enhancement of business processes. Vol. 2. Heidelberg: Springer, 2011. • Thonemann, Ulrich. Operations management: konzepte, methoden und anwendungen. Pearson Deutschland GmbH, 2010.
Comments	