03-IBVA-DSV	Data Science and Visualization

Lehrform *(teaching format)* / **SWS** *(hours per week)*: 2VL + 2UE

Kreditpunkte *(credit points)*: 6

Turnus *(frequency)*: usually, each summer term

Inhaltliche Voraussetzungen *(content-related prior knowledge/skills)*: PI1, Mathe 1+2

Sprache *(language)*: English

Lehrende *(teaching staff)*: AG Informationsmanagement

Studiengang *(degree program)*	Module	Semester
Informatik (Bachelor VF)	IBVA	ab 4. Sem.
Digitale Medien (Bachelor)	DMB-MA–2	ab 4. Sem.
Wirtschaftsinformatik (BPO'13)	WI-CF-W, WI-IM-W	ab 4. Sem.
Wirtschaftsinformatik (BPO'23)	WI-DB-V, WI-IM-V	ab 4. Sem.
Informatik (Master)	*General Studies*	ab 1. Sem.

Lernergebnisse / *Learning Outcome*:

- You learn how to create information visualizations using Python and the libraries plotly, matplotlib, and altair.
- You will work on a real data science project where you apply statistical analysis and visualization to answer your research questions.
- You will learn how to present your research findings both in presentations and in a research report.

Inhalte / *Contents*:

The class will provide an introduction to data science and information visualization. For this, the programming language Python will be used (and taught). For creating data visualizations, you will be able to choose among a series of tools (e.g., Plotly, Observable, etc.)

We will explore different concepts from the fields of human-computer interaction, data visualization, and computer-supported collaborative work. You will learn about: - Basic statistics - Visualization techniques - Interaction design Exploratory data analysis and evaluation, as an integral part of data science, will also be taught. The course will involve applying the learned techniques to real-world datasets to develop a custom project.

This class is taught in person and in English. Use material like the coursebook to learn more about the topics as we progress in the course.

Hinweise *(remarks)*: The table lists only the primary / most specific modules to which this course is assigned.