

**Course Title: Data Management for Digital Health****Coordinating Unit:** Faculty of Digital Engineering – Digital Health and Personalized Medicine**Semester:** 1 (2018/2019) **Credits:** 6**Lecturers:** Böttinger, Schapranow, Kraus, Da Cruz

Welcome to the class: we are very excited that you are interested in learning more about the foundations data management for digital health. In this lecture, we will provide you concrete examples from the field of digital health to understand where and how data is acquired, what are the challenges with these specific types of data, and how to handle them.

In the course, we will have invited guest speakers sharing their real-world experience with you in a brief presentation. You will also have the chance to raise your questions and discuss with them in the course of the lecture. Furthermore, you will have the chance to gather hands-on experiences, e.g. you will have the chance to join on-site visits of our cooperation partners in Berlin.

The structure of the lecture is as follows. Firstly, we will have a brief biology recap to equip you with the foundation of human cells and their functions, genetic changes and their impact, as well as annotation data and how it is used today. Just two decades ago, all these tasks would have been impossible due to missing knowledge about the DNA and a lack of computational power. As a result, you will learn basic concepts about how to incorporate latest computer science aspects to explore the code of life interactively. Furthermore, we will deep dive into very concrete use cases to understand the analysis of digital health data and its requirements. We will address specific machine learning techniques, which are used for digital health.

**Applicable Module: Specialization Areas SCAD, APAS, DICR**