

Digital Transformation in Healthcare

Course manual April 2025

General information

Course name	Digital Transformation in Healthcare
Course code	BMME186
Course load	6 ECTS
Coordinators	Dr. Amir Omidvari Dr. Nico Bruining Dr. Robert van der Boon Prof. dr. Murat Tarakci
Course structure	Lectures, seminars, field trip
Course schedule	April 2025

Disclaimer: *this is the latest version of the course manual; however, due to practical or unpredictable reasons, minor changes may be expected.*

Welcome to the course Digital Transformation in healthcare! Here you can find more information about this course.

General Overview

New digital technologies are changing the patient journey and healthcare processes. These changes force healthcare organizations to develop new strategies and organizational cultures to breed innovations. Furthermore, they require an ecosystem where different stakeholders can collaborate. Therefore, the digitalization of healthcare entails not only the development of new digital technologies but also the digital transformation of the healthcare ecosystem.

Digital transformation in healthcare requires convergence and cross-pollination across people from different backgrounds and organizations working together. Achieving the transformation goals calls for a common language for all stakeholders involved in healthcare.

This course includes several modules that can empower future researchers, physicians, data scientists, and engineers for multidisciplinary collaborations in the context of digital transformation in healthcare. Participants will also have the opportunity to broaden their network by getting to know experts from different fields.

Learning Objectives

- Describe the healthcare system and its stakeholders
- Distinguish different dimensions of healthcare quality defined by the WHO
- Summarize the process of digital transformation in healthcare
- Identify healthcare issues that can be improved by digital transformation
- Evaluate different strategies for digital transformation in a healthcare setting
- Plan a digital transformation project in the healthcare

Assessment

Group assignment

Students will be divided into groups of 4-5 students. Your group plays the role of a company expert in conducting projects related to digital transformation in healthcare. First, choose a case of digital transformation in healthcare. The case could address an issue in a healthcare-related organization such as a pharmacy, private clinic, or hospital or a problem at the healthcare system level in any part of the world.

Each group analyzes this case and presents the proposal to execute digital transformation in front of a panel of stakeholders, which will be another group of students and at least one of the course coordinators.

The presentation may include the following parts:

- A description of the problem
- Potential solutions
- The reasons to choose digital transformation as the solution
- The digital transformation objectives
- Digital transformation strategies
- Actions required to execute digital transformation
- Estimated potential costs
- Expected outcomes

Individual assignment

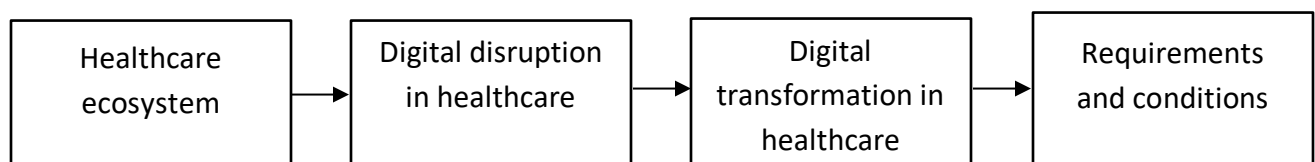
Furthermore, each student chooses a case of digital transformation individually and will submit an essay (max. 1250 words excluding references. In this assignment, you play the role of a consultant expert in digital transformation in healthcare. The case study analysis should include:

- A summary of the case analysis (max. 250 words)
- A general description of the healthcare organization/system and the situation
- Description of the problem(s), which could be potentially resolved by digital transformation
- The theory used for analysis (if applicable)
- The digital transformation objectives
- Opportunities and threats
- Digital transformation strategies
- Requirements
- Recommendations
- References

More details about the assignments will be published on the Canvas page.

Course structure

The course consists of 12 sessions of lectures/seminars, and a field trip to Erasmus MC. The course is composed of four modules, which are presented below.



Day	Time	Theme	The topic of each session	Lecturer
Thursday 3/4/2025	9:00-9:30	Course structure	Introduction to the course and the assignments	A. Omidvari
	9:30-10:45	Healthcare Ecosystem	Introduction to the healthcare ecosystem	
	11:00-12:45		Introduction: definition and implications of digital transformation in healthcare	
Tuesday 08/04/2025	9:00-11:45		Patient journey in a hospital	R. van der Boon
			A visit to Erasmus MC	
Wednesday 09/04/2025	9:00-10:45	Digital disruption in healthcare	Practical Implementations of Digital Solutions in Healthcare	N. Bruining
	11:00-12:45		Digital Patient Centered solutions in healthcare	
Thursday 10/4/2025	9:00-11:45		Data analysis in healthcare; big data and AI	A. Angelakis
Monday 14/04/2025	9:00-10:45	Requirements and conditions	Strategies for digital transformation in healthcare I	M. Tarakci
	11:00-12:45		Strategies for digital transformation in healthcare II	
Tuesday 15/04/2025	9:00-10:45		Executing digital transformation in healthcare I	M. Tarakci
	11:00-12:45		Executing digital transformation in Healthcare II	
Thursday 17/04/2025	9:00-10:00	Digital transformation in healthcare	Healthcare digital transformation from the Perspective of Stakeholders	A. Omidvari
	10:15-11:45		The impacts of digital transformation in healthcare	
	12:00-12:45	Wrap-up	Journey of digital transformation in healthcare: Q&A	A. Omidvari
Thursday 24/04/2025	09:00-11:45	Examination- group presentation		A. Omidvari

Grading

The grading is based on the final presentation of the group assignments (40%) and the essay to be submitted individually (60%).

Attendance rules

Attendance is mandatory for all students and a prerequisite for assessment. Students may be excused for a maximum of one session without repercussions. However, failing to attend a guest lecturer

session, or the second session from the rest requires notifying the course coordinator before the beginning of that session.

If students miss more than two sessions or the final group assignment session, for any reasons except the following personal circumstances (1. emergency health issue, and 2. serious first-degree family circumstances), they can not complete the course. In such a situation (i.e. 1. emergency health issue, and 2. serious first-degree family circumstances) students must contact RSM MSc student advisers to discuss their study progress and obtain an attendance exemption.

Support

During the course, in addition to the opportunity to ask questions from lecturers, there would be a wrap-up session, including Q&A, to support you in conducting your assignments. Furthermore, if you have any queries, you can contact Dr. Amir Omidvari via a.omidvari@rsm.nl, with the course code BMME186 at the beginning of the subject line.

Wish you all the best and good luck!