

1 Discipline: Design Science (cross-domain)

Acknowledgements: The course was developed by Prof. Dr. Jan vom Brocke and Prof. Dr. Robert Winter and continuously refined over the course of various iterations between 2017 and 2025. Starting winter semester 2025, the course is offered together with Prof. Dr. Daniel Beverungen and Prof. Dr. Matthias Söllner. We would like to express our sincere gratitude to Robert Winter for his great commitment to the course design and for making it possible to continue the course in its current form.

2 Language

English

3 Title

Design Science

4 Lecturers

Prof. Dr. Jan vom Brocke, University of Münster

<https://janvombrocke.com>

<https://scholar.google.com/citations?user=WkGDQ0oAAAAJ&hl=en>

https://www.researchgate.net/profile/Jan_vom_Brocke

Prof. Dr. Daniel Beverungen, Paderborn University

<https://go.upb.de/dabe>

<https://scholar.google.com/citations?user=sglWFe8AAAAJ&hl=de&oi=ao>

<https://www.researchgate.net/scientific-contributions/Daniel-Beverungen-22411194>

Prof. Dr. Matthias Söllner, University of Kassel

<https://www.uni-kassel.de/go/soellner>

<https://scholar.google.com/citations?user=9gD2bNwAAAAJ&hl=en>

<https://www.researchgate.net/profile/Matthias-Soellner-2>

5 Dates and Location

DIGITAL COURSE:

- ONLINE, central: **six half days** for lectures, panels / presentations, feedback / coaching sessions April 20 – May 5, 2026
- ONLINE, decentral: **ca. five half days** for group work April 20 – May 5, 2026
- OFFLINE, decentral: **ca. seven days for reading and preparation** between mid April and May 5

6 Course Description

6.1 Abstract and Learning Objectives

Design Science Research (DSR) is a research paradigm that intends to generate knowledge on the design of innovative solutions to real-world problems. As such, DSR is specifically useful in contributing to the solution of societally and practically relevant challenges. At the same time, matured methodological foundations are available today, specifically supporting publishing DSR research both at conferences and top-tier journals.

This course gives an introduction to DSR. It focuses on planning and conducting design science research on Ph.D. level. It is intended to provide state-of-the art methodological competences for all Ph.D. students in business whose research is not solely descriptive/explanatory, but also comprises components where artefacts are purposefully designed and evaluated.

While DSR is very common in Information Systems research, purposeful artefact design and evaluation are found in many other business research fields like, e.g., General Management, Operations Management/Management Science, Accounting/Controlling, Business Education, or Marketing. Although Design Science is often conducted implicitly, the methodological discourse in the Information Systems has led to a high level of reflection and to the availability of a large number of reference publications and cases, so that examples and cases will often originate from this domain. It should however be noted that DSR as a paradigm is applicable and is used in nearly all fields of business research. As a consequence, this class is not only part of the Information Systems ProDok curriculum, but intentionally being positioned as cross-domain class.

The goal of the course is to provide Ph.D. students with insights and capabilities that enable them to plan and conduct independent DSR. To achieve this goal, students will engage in a number of activities in preparation and during this four-day course, including preparatory readings, lectures, presentations, project work, and in-class discussions. The course format offers an interactive learning experience and the unique opportunity to obtain individualized feedback from leading IS researchers as well as develop preliminary research designs for their own Ph.D. projects.

6.2 Content

Offline pre-class preparation:

Preparatory study of essential DSR methodology papers by students. The reading material comprises

- (1) a package of fundamental papers to be read by all participants:
<https://www.dropbox.com/sh/x5uvyi4a9e04w2s/AAAAXGN5EYant9gg06EHyhwma?dl=0>
- (2) five packages with a total of 16 to 20 papers (depending on the number of participants) where each participant has to choose one paper and presents it in ten minutes in class:
<https://www.dropbox.com/sh/s18flh3fh54rj39/AABThFpLI7PR5T-aqZmUtFwJa?dl=0>

The paper packages cover general methodology papers, papers focusing on specific artefact types, papers focusing on specific DSR project phases, papers focusing on design theorizing, and exemplary DSR studies.

Online course components:

The online course comprises of the following components:

- (1) **Introduction:** Introduction to the course and introduction to DSR by the lecturers.
- (2) **Panels:** Presentation of reading assignments by students, discussion of methodological insights and implications.
- (3) **Coaching:** Faculty-coached definition of group design projects, design of research plans, presentation and discussion of research plans. Depending on the maturity level of Ph.D. students dissertation projects, design projects could be based on a design component of their dissertation or a specific sub-project/paper of their dissertation. The topic can be freely chosen by the group. Groups are created built based on a 'design project marketplace' on the end of the first course day.
- (4) **International DSR Panel:** A panel including further internationally renowned DSR scientists will provide further insights into the latest topics in the discipline as well as provide in-depth insights on developing design-oriented publications.

Between the in-class online components, group design projects are developed and extended / revised offline in the form of self-organized group work.

6.3 Schedule / Course format

Before day 1: Self-organized course preparation assignments (reading, presentation, project idea).

20.04.2026 Half Day 1: (Prof. Jan vom Brocke, Prof. Daniel Beverungen, Prof. Matthias Söllner)

09:00 – 09:45 Welcome session / participant introductions

10:00 – 10:45 Introduction to DSR by lecturers (1)

11:00 – 11:45 Introduction to DSR by lecturers (2)

12:00 – 12:45 Cases Market Place

21.04.2026 Half Day 2: (Prof. Dr. Jan vom Brocke / Prof. Daniel Beverungen)

14:00 – 15:00 Reading assignment panel (package 1): 4 papers plus discussion

15:00 – 16:00 Reading assignment panel (package 2): 4 papers plus discussion

16:00 – 17:00 Reading assignment panel (package 3): 4 papers plus discussion

17:00 – 18:00 Reading assignment panel (package 4): 4 papers plus discussion

Between day 2 and day 3: Idea development for group project (case)

22.04.2026 Half Day 3: 1st walk through (15 + 30 minutes each group) (Prof. Matthias Söllner)

09:00 – 09:45 Cases discussion and feedback (group 1)

10:00 – 10:45 Cases discussion and feedback (group 2)

11:00 – 11:45 Cases discussion and feedback (group 3)

12:00 – 12:45 Cases discussion and feedback (group 4)

Between day 3 and day 4: self-organized group work

27.04.2026 Half Day 4: 2nd walk through (15 + 30 minutes each group, 2 simultaneous sessions)

(Prof. Jan vom Brocke / Prof. Dr. Daniel Beverungen)

16:00 – 16:45 Cases discussion and feedback (groups 1 and 2)

17:00 – 17:45 Cases discussion and feedback (groups 3 and 4)

Between day 4 and day 5: self-organized group work

29.04.2026 Half Day 5: DSR Panel Discussion with international thought leaders

(Prof. Dr. Jan vom Brocke, Prof. Daniel Beverungen, Prof. Dr. Matthias Söllner, guests)

16:00 – 17:00 Impulse presentations by international thought leaders

17:00 – 18:00 Open Discussions of perspectives in DSR

Between day 5 and day 6: self-organized group work, finalization of case

05.05.2026 Half Day 6: Final presentations (20 + 10 minutes each group)

(Prof. Jan vom Brocke, Prof. Daniel Beverungen, Prof. Matthias Söllner)

09:00 – 10:00 Cases discussion and feedback (groups 1 and 2)

10:00 – 11:00 Cases discussion and feedback (groups 3 and 4)

11:00 – 12:00 Debriefing, Closing, Follow ups

7 Preparation and Literature

7.1 Prerequisites

The course is intended for Ph.D. students in all business / management disciplines whose dissertation project includes to purposefully design and evaluate an artefact – such as a conceptual model, a taxonomy/classification, a procedure/process, metrics, an information model, guidelines/principles, a reference architecture, a concrete product/software prototype, etc.

Students should have a preliminary idea about their design research problem and their research questions, about who the stakeholders of their artefact(s) are and what requirements they have, and about their sources of data.

7.2 Essential or Recommended Reading Material

The reading material is divided into

- (1) a package of fundamental papers to be read by all participants:
<https://www.dropbox.com/sh/x5uvyi4a9e04w2s/AAAAXGN5EYant9gg06EHyhwma?dl=0>
- (2) five packages with together 16 to 20 papers (depending on the number of participants) where each participant has to choose one paper and presents it in ten minutes in class:
<https://www.dropbox.com/sh/s18flh3fh54rj39/AABThFpLI7PR5T-aqZmUtFwJa?dl=0>

The paper packages cover general methodology papers, papers focusing on specific artefact types, papers focusing on specific DSR project phases, papers focusing on design theorizing, and exemplary DSR studies.

7.3 To prepare

Each student is expected to read all papers in the fundamental paper package (1), to choose one paper from the four to five paper packages (2) and to present it in ten minutes in class. Each student is asked to develop an idea for a group design project for the project marketplace discussion.

Each student is expected to actively elaborate a design research mini-project according to certain presented criteria in a self-organized group. For this design project, several walkthroughs (15-20 minute presentations, 10-20 minute feedbacks) and a final presentation need to be prepared.

All students need to participate in all classroom discussions. Good participation includes asking insightful questions, raising original ideas, and making constructive comments.

8 Administration

8.1 Max. number of participants

Due to the interactive character and Ph.D. project work, the maximum class size is 16 students.

8.2 Assignments

See section 6.3

8.3 Exam

If grading is requested by a participant, grading will be based on

- performance of reading assignment presentation (25%)
- performance of design project (75%)
- active participation in class

Upon successful participation, an individual certification with or without grades (depending on the formal requirements of the student's study administration) will be produced by VHB.

8.4 Credits

The class will create an estimated overall workload of 150-180 hours, corresponding to 6 ECTS.

9 Working hours estimate

| Working Hours | Hours |
|--|--------------|
| Preparatory assignments (general reading, specific reading assignment & preparation of presentation) | 100 |
| Participation in class | 30 |
| Preparation for final presentation topics | 15 |
| Group & individual work for final presentation | 35 |
| Total | 180 h |
| ECTS: 6 | |