

1 Discipline

Information Systems

2 Language

English

3 Title

Taxonomy Design in IS Research

4 Lecturers

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5 Dates and Location

Day 1: 28.04.2027, 9 AM – 12 AM, online

Day 2: 29.04.2027, 9 AM – 12 AM, online

Day 3: 30.04.2027, 9 AM – 12 AM, online

Day 4: 05.05.2027, 9 AM – 12 AM, online

Day 5: 19.05.2027, 4 PM – 7 PM, online

Day 6: 20.05.2027, 4 PM – 7 PM, online

Day 7: 16.06.2027, 4 PM – 7 PM, online

Day 8: 17.06.2027, 4 PM – 7 PM, online

This is a full online course.

6 Course Description

6.1 Abstract and Learning Objectives

Taxonomies provide a systematic means of classifying and structuring objects within a domain and are an important methodological instrument in Information Systems (IS) research. Despite their relevance, taxonomy development in IS is characterized by some methodological heterogeneity in the development process, with researchers employing both inductive and deductive approaches. This course on Taxonomy Design in IS Research introduces the methodological foundations and principles of taxonomy development and equips doctoral researchers to apply them across different research domains in IS and in their own research.

The course combines conceptual and methodological foundations with practical research experiences.

Participants will learn about the key principles and procedures involved in taxonomy development and apply them to their own research contexts. As part of the course, students will develop and evaluate taxonomies. The course covers the main stages of the taxonomy-development process, including domain-related motivation, identification and specification of dimensions and characteristics, iterative taxonomy construction, evaluation, and visualization. Particular emphasis is placed on the systematic justification of design decisions, methodological rigor, and transparent documentation of the development process.

Through the collaborative development, discussion, and critical evaluation of taxonomies, participants gain experience with taxonomy development across different research contexts. These cases, together with individual taxonomy projects in their own research contexts, serve as a basis for identifying and discussing methodological insights related to taxonomy development, evaluation, and visualization. The course thus prepares doctoral researchers to develop, evaluate, and communicate rigorous taxonomies and to integrate taxonomy development into their own research.

6.2 Content

The course will cover the following topics in taxonomy research:

- (1) Foundations of Taxonomy Development in Information Systems
- (2) Types and Structures of Taxonomies
- (3) Taxonomy Development Process
- (4) Development of Facet-Based Taxonomies
- (5) Development of Hierarchical Taxonomies
- (6) Taxonomy Evaluation
- (7) Taxonomy Visualization & Application
- (8) Reviewing and Publishing Taxonomies in IS Research

6.3 Schedule

Before day 1: Self-organized course preparation (fundamental papers).

Between day 3 and 4: preparation of reading assignment cases (selected paper)

Between day 4 and 5/6: self-organized idea development (research project setup)

Between day 5/6 and 7/8: self-organized taxonomy development and visualization (research project development)

After day 8: Self-organized working paper writing (potentially with one of the lecturers / international experts). Submission deadline for paper: 30.07.2027

Day 1: Welcome session, Introduction to conceptual foundations (faceted vs. hierarchical taxonomies) (Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann)

Day 2: Introduction to methodological foundations: taxonomy development (Prof. Dr. Jan Muntermann)

Day 3: Introduction to methodological foundations: taxonomy evaluation, visualization, and application, Reading assignments (Prof. Dr. Dennis Kundisch)

Day 4: Reading assignment cases (exemplary paper presentation and discussion) (Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann)

Day 5: Project ideas presentation, discussion and feedback (Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann, internationally renowned taxonomy researchers)

Day 6: Project ideas presentation, discussion and feedback ((Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann, internationally renowned taxonomy researchers)

Day 7: Taxonomy and visualization presentation, discussion and feedback (Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann, internationally renowned taxonomy researchers)

Day 8: Taxonomy and visualization presentation, discussion and feedback (Prof. Dr. Dennis Kundisch, Prof. Dr. Jan Muntermann, internationally renowned taxonomy researchers)

6.4 Course Format

The course combines introductory sessions on the conceptual and methodological foundations of taxonomy development with interactive discussions of exemplary cases and student-led presentations of reading assignments. Students will apply and deepen their methodological knowledge through an individual taxonomy project in their own research domain, involving the iterative development, visualization, evaluation, and documentation of a faceted or hierarchical taxonomy. Throughout the project, students will receive feedback from instructors and peers and critically reflect on methodological choices and their implications.

Thereby, the course comprises of the following components:

- (1) **Introductory Lectures:** Introduction to the course and introduction to the conceptual and methodological foundations by the lecturers.
- (2) **Exemplary Cases:** Presentation of reading assignments by students, discussion of methodological insights and implications.
- (3) **Projects:** Development of individual (faceted or hierarchical) taxonomies by the students based on their own research domain. The project includes iterative development, visualization, evaluation, and documentation of the taxonomy, supported by feedback from instructors and peers.

7 Preparation and Literature

7.1 Prerequisites and Course Requirements

The course is intended for PhD students in Information Systems who have a preliminary research topic and initial research questions. Participants should have a basic understanding of Information Systems research and be prepared to apply the course concepts and methods to their own research domain.

Each student is expected to read the papers in the fundamental paper package and to critically engage with the methodological foundations and approaches presented in these papers. In addition, students will be provided and assigned selected papers (cases) for closer examination and discussion in class.

Each student is expected to develop a taxonomy-development project and research paper draft within their own research domain. As part of this project, students will develop and evaluate a faceted or a hierarchical taxonomy. The development process will be supported through walkthroughs, presentations, and feedback sessions. Students are expected to document and present their taxonomy-development process and to prepare an individual research paper draft related to their individual Ph.D. project.

All students are expected to actively participate in (virtual) classroom discussions, peer feedback, and collaborative evaluation activities. Good participation includes asking insightful questions, critically discussing methodological decisions, providing constructive feedback, and reflecting on the

experiences and challenges during taxonomy development.

7.2 Reading Material

The reading material is divided into:

- (1) A package of fundamental papers to be read by all participants.

Nickerson, R. C., Varshney, U., & Muntermann, J. (2013). A method for taxonomy development and its application in information systems. *European Journal of Information Systems*, 22(3), 336–359. <https://doi.org/10.1057/ejis.2012.26>

Kundisch, D., Muntermann, J., Oberländer, A. M., Rau, D., Röglinger, M., Schoormann, T., & Szopinski, D. (2022). An Update for Taxonomy Designers. *Business & Information Systems Engineering*, 64(4), 421–439. <https://doi.org/10.1007/s12599-021-00723-x>

- (2) A package of selected papers (depending on the number of participants) where each participant has to choose one paper and presents it in ten minutes in class. The paper package will cover exemplary studies on the development, visualization and evaluation of taxonomies in information systems research. This material will be shared during the first day.

7.3 To prepare

Each student is expected to read the papers in the fundamental paper package (1), to choose one paper from paper packages (2) to be presented in class. Each student is asked to develop an idea for an individual taxonomy paper project.

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

- Class participation and discussion (10%)
- Presentation of reading assignment case (10%)
- Presentation of individual taxonomy development (40 %)
- Working paper regarding individual taxonomy development project, 10 pages (40 %)

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

Working Hours	Hours
Course preparation	10 h
Class and class participation	24 h
Preparation reading assignment case	10 h
Individual taxonomy development	36 h
Working paper preparation (to be written after the input sessions Day 1 to Day 8)	80 h
Total	180 h
ECTS: 6	