



Course Description

Artificial intelligence (AI) represents the pinnacle of technological innovation, mimicking human cognitive functions to analyze vast datasets, extract insights, and make autonomous decisions. Its applications span diverse domains, from healthcare and finance to transportation and entertainment, revolutionizing industries and reshaping the way we interact with technology. However, humans possess complementary skills that can only be harnessed in collaborative settings.

This course aims at developing research skills to address behavioral problems in settings where humans collaborate with AI. It is recommended to take the courses *Supply Chain Analytics I* (Basismodul) by Prof. Florian Sachs and *Behavioral Operations Advanced* (Schwerpunktmodul) by Prof. Nicolas Fugger prior to this course, or at least in parallel.

In *Behavioral Operations Advanced*, students learn how behavioral factors, such as individual biases and social preferences, affect decision-making processes in operational settings. In this course, students learn how to identify these behavioral factors and relate them to the context of human-AI collaboration to potentially improve decision-making. In particular, students identify a concrete human-AI collaboration scenario, and suggest a solution in a research proposal. Students learn to come up with a clear and concise research question, building on existing literature, and to design a suitable experimental study to test the research question.

Additionally, students learn to read and discuss recent literature in the field. In particular, students learn how to critically approach published scientific articles; not only by identifying the main contribution for theory and managerial practice, but also by identifying methodological and technical issues (e.g., in assumptions and study design).

Course Administration

Faculty Dominik Walzner
Building 415, room: 2.425
Telephone: +49 221 470-76338
Email: dominik.walzner@uni-koeln.de
Faculty office hours: by appointment (via email)

Coordination Stephanie Rauscher
Building 415, room: 2.509

University of Cologne

Department of Supply Chain Management
Master Seminar Supply Chain Management



Telephone: +49 221 470-7935

Email: stephanie.rauscher@uni-koeln.de

Grading

Students receive 6 credit points (LP) for this course. The overall learning performance is evaluated based on a research project, which students conduct in groups of 2-3. As part of the research project, the groups present a mid-term presentation (30% of the final grade) and submit the research proposal as a final report (70% of the final grade).

Each group can submit a final presentation to receive additional 3 bonus points. Further, to foster active individual learning, additional 4 bonus points are available for in-class participation in discussions.

Language

The seminar is taught in English.

Prerequisites

The course is especially designed for students interested in conducting research in the field of human-AI collaboration. Therefore, it is strongly recommended that students take the course *Supply Chain Analytics I* (Basismodul) and *Behavioral Operations Advanced* (Schwerpunktmodul) prior to this course, or at least in parallel.

Reading materials

Required readings will be announced during the Kick-off. All reading materials will be available for download on ILIAS prior to the Kick-off.