Module: IS 609 AI and Technology Strategy

Contents:
Recent advances in artificial intelligence (AI) are reshaping the economy and altering how firms create and capture value. Managers must understand where AI generates measurable business impact, where its limitations persist, and how it can be deployed effectively within organizational and market contexts. This course develops the conceptual foundations and economic frameworks required to analyze, evaluate, and strategically apply AI in business settings.

This course is designed for business students who are interested in the intersection between business strategy and technology. This course does not involve programming. The emphasis is on strategic and economic reasoning.

The course first develops intuition for the conceptual foundations of artificial intelligence as a technology, especially artificial neural networks and machine learning. It then examines capabilities, limitations, and underlying economics, and explains how these characteristics shape which business applications are feasible and which market transformation is to be expected. Building on this foundation, students learn how firms create and capture value by integrating AI into products and services. The course then provides frameworks to analyze the adoption and diffusion of AI across firms and industries. Finally, it examines the economic implications of AI, including its effects on labor and automation, and externalities relevant for corporate decision-making, such as bias, sustainability, and privacy.

The course combines conceptual foundations provided in lectures with hands-on application in exercise sessions. In the exercise sessions, students work on exercise sheets to deepen the conceptual foundation and application of lecture contents.

Learning outcomes:
After successfully completing the course, students..

- ..can explain the conceptual foundation of artificial neural networks and machine learning,
- ..can evaluate the emerging business capabilities, limitations, and economic characteristics,
- ..can evaluate business and monetization models to create and capture value from AI,
- ..can analyze patterns of technological diffusion, performance improvement, and disruption, and apply these frameworks to AI,
- ..can discuss the broader economic and managerial implications of AI for organizations and markets.

Prerequisites:
Formal: Successful completion of at least one of the following courses: CC501, CC502, CC503, BE510, CS500, CS530, CS550, CS560, CS652, IE500, IE560. Concurrent enrollment is not sufficient.
Recommended: None.

Obligatory registration: yes, and the number of participants is limited.	**Further Information on registration:** Please register via the student portal.

Courses	**Hours per week**	**Self-study**
Lecture	2 SWS	8 SWS

Exercise	2 SWS	5 SWS
ECTS in total		6 ECTS

Form of assessment	Written, closed book exam (60 mins)
Preliminary course work	None
Lecturer/Person in charge	Prof. Dr. Jens Förderer
Duration of module	1 semester
Offering	Spring semester
Language	English
Program-specific educational goals	CG1, CG3
Grade	graded
Range of application	M.Sc. MMM, M.Sc. Bus. Inf.