Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

UNIVERSITY OF HAMBURG
BUSINESS SCHOOL

PhD Course

Medical Decision Making

block course: 14 – 16 October 2025 (9:00 am – 4:30 pm)

HCHE, Esplanade 36, room 4029

Course Instructor: **Prof. Dr. Thomas Mayrhofer** (Heidelberg University)

Course Value: **2 SWS = 5 credit points**

Assessment/Student evaluation: Written exam; grading will be pass/fail

Course Language: English

Software: N/A

Registration: **Please register via STiNE.** For all organizational matters please contact e-mail andrea.buekow@uni-hamburg.de.

Recommended Literature:
Felder, S., & Mayrhofer, T. (2022). Medical decision making – A health economic primer. Springer Berlin Heidelberg.

Course Overview & syllabus:
This course introduces PhD students to medical decision-making. It provides a comprehensive analysis of medical decision-making under uncertainty by integrating test information theory with expected utility theory to support informed test and treatment decisions in the presence of diagnostic risk. Furthermore, the course examines individual and multiple tests, as well as diagnostic models in which the decision-maker selects the test outcome. Finally, it explores non-expected utility models of choice under risk and uncertainty. While these models can explain some observed test and treatment decisions, they are less suitable for normative analyses intended to guide medical decision-making. The course will include examples from clinical practice as well as case studies based on clinical guidelines.

The course is designed for PhD students of the Research Training Group ‘Managerial and economic dimensions of health care quality’.

SYLLABUS

- **Day 1** = 14 October 2025:

Basic Tools in Medical Decision Making	9:00 - 12:15
Treatment Decisions	13:15 - 16:30

- **Day 2** = 15 October 2025:

Test and Treatment Decisions	9:00 - 12:15
Multiple Diagnostic Tests	13:15 - 16:30

- **Day 3** = 16 October 2025:

Optimal Cutoffs of a Diagnostic Test	9:00 - 12:15
Non-expected Utility Models	13:15 - 16:30