Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

FAKULTÄT
FÜR BETRIEBSWIRTSCHAFT

PhD Course

Medical Decision Making

block course: 14.10.-16.10.2025 (9am – 4:30pm)

HCHE, Esplanade 36, 4029

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

Course Value: **2 SWS**

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

Course Language: English

Software: N/A

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

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

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**:

Basic Tools in Medical Decision Making	14.10.2025 9:00-12:15
Treatment Decisions	14.10.2024 13:15-16:30

- **Day 2**

Test and Treatment Decisions	15.10.2025 9:00-12:15
Multiple Diagnostic Tests	15.10.2024 13:15-16:30

- **Day 3**:

Optimal Cutoffs of a Diagnostic Test	16.10.2025 9:00-12:15
Non-expected Utility Models	16.10.2024 13:15-16:30