UNIVERSITÄT ZU LÜBECK

Module Guide for the Study Path

Master in Health and Healthcare Science 2025

Version from 8. October 2026

1st semester

Digital Healthcare (CS4400-KP05, DigHA) 1
Computer Science for Health and Healthcare Science (CS4460-KP05, InfGuV) 3
Research Methods in Health Sciences (GW4100-KP08, FMetGW) 5
Social Medicine (GW4200-KP07, SoWiGr) 7
Development and Evaluation of Complex Interventions 1 (GW4300-KP05, EuEInI) 9
Care Quality (GW4420-KP05, VerQual) 11
Neurophysiological Basics of Pain and Multimodal Interdisciplinary Therapy (GW4430-KP05, NeuphSch) 13

2nd and 3rd semester

Applied Digital Healthcare (CS4550-KP15, PrDG) 15
Applied Evidence-Based Healthcare Development (GW4710-KP15, PrVerEnt) 17
Applied Health Service Research (GW4730-KP15, PrVerFo) 19
Advanced Health Services Research (GW4750-KP11, WVFo) 21
Advanced Healthcare Development and Healthcare Management (GW4770-KP11, WVEuM) 24
Project Interprofessional Care and Research in Pain (GW4780-KP15, PrIntSch) 26
Advanced Course Interprofessional Care and Research in Pain (GW4790-KP11, WIntSch) 28

2nd semester

Methods and Processes in the Development of Technical Systems (CS4530-KP05, EntDT) 30
Technologies in Healthcare (CS4540-KP05, TechGV) 32
Development and Evaluation of Complex Interventions 2 (GW4500-KP05, EuEInII) 34
Theories and Models of Person-Centered Care (GW4740-KP05, ThMoPVe) 36
Developing Study Protocols (GW5100-KP05, StuPro) 38
Statistical Methods (MA4550-KP05, StaMet) 40

3rd semester

Human-Machine-Systems (CS5330-KP06, MMS) 42
Patient Safety (GW4600-KP05, PaSi) 44
Health Policy and Health Economics (GW5200-KP05, GPuGOE) 46

4th semester

Master Thesis in Health and Healthcare Science (GW5990-KP30, GWMArbeit) 48

CS4400-KP05 - Digital Healthcare (DigHA)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (compulsory), Digital Healthcare, 1st semester
- Master in Health and Healthcare Science 2019 (compulsory), Digital Healthcare, 1st semester

Classes and lectures:

- Digital Healthcare (lecture, 2 SWS)
- Digital Healthcare (exercise, 2 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Introduction and motivation
- Digitization and digital transformation (clarification of terms, challenges, starting points)
- Areas of digitization in healthcare
- IT deployment in healthcare
- E-Health, Mobile Health, Ambient Health
- Big Data in Healthcare
- Transfer of digital health into everyday care
- Design of the human-machine interface as the basis for application success
- Success factors in digitization
- Social and ethical consequences of the digital transformation

Qualification-goals/Competencies:

- Students understand the digitization process in the healthcare sector
- They can name and describe examples of digital systems in the healthcare sector
- They are familiar with current technological trends and how they relate to and impact the healthcare industry
- They know the limits and challenges of digitization
- They can assess and evaluate digital systems with regard to ethical implications

Grading through:

- portfolio exam

Is requisite for:

- Methods and Processes in the Development of Technical Systems (CS4530-KP05)

Responsible for this module:

- Prof. Dr.-Ing. Nicole Jochems

Teacher:

- Institute of Human-Centered Interactive Systems
- Prof. Dr.-Ing. Nicole Jochems

Literature:

- :
- :
- :
- :

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- none

Admission requirements for participation in module examination:
- Giving a lecture

Module Exam:
- CS4400-L1: Digital Healthcare, portfolio examination, 90 min, group presentation 50% of module grade, written examination 50% of module grade.

CS4460-KP05 - Computer Science for Health and Healthcare Science (InfGuV)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Digital Healthcare, 1st semester
- Master in Health and Healthcare Science 2025 (optional subject), Digital Healthcare, 1st semester

Classes and lectures:

- Computer Science for Health and Healthcare Science (lecture, 2 SWS)
- Computer Science for Health and Healthcare Science (exercise, 2 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Information, data, algorithms
- Computer-Hardware
- Computer-Software
- Operating systems
- Software development processes
- Programming languages (Java, Javascript)
- Elementary data structures
- Programming concepts (iteration, recursion, object orientation, modularization)
- Page description languages (HMTL, CSS)
- Databases
- IT security and encryption

Qualification-goals/Competencies:

- Students will be able to describe the design, implementation, and operation of information processing systems.
- They are able to accompany the development of IT systems in interdisciplinary working groups.
- They can classify information technology equipment and system for their suitability in health care.
- They will be able to name and classify basic IT security issues and identify possible solutions.
- They can learn new areas of computer science under guidance.

Grading through:

- written exam

Is requisite for:

- Applied Digital Healthcare (CS4550-KP15)
- Methods and Processes in the Development of Technical Systems (CS4530-KP05)

Responsible for this module:

- Prof. Dr.-Ing. Andreas Schrader

Teacher:

- Institute of Telematics
- Prof. Dr.-Ing. Andreas Schrader

Literature:

- :
- :
- :
- :

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination:
- Successful completion of exercises as specified at the beginning of the semester.

Module Exam:
- CS4460-L1: Computer Science for Health and Healthcare Science, written exam, 90 min, 100% of module grade.

GW4100-KP08 - Research Methods in Health Sciences (FMetGW)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	8

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (compulsory), Research in the health and care sciences, 1st semester
- Master in Health and Healthcare Science 2019 (compulsory), Research in the health and care sciences, 1st semester

Classes and lectures:

- Research methods in clinical epidemiology (lecture, 2 SWS)
- Research methods in clinical epidemiology (exercise, 1 SWS)
- Qualitative research (lecture, 1 SWS)
- Qualitative research (exercise, 1 SWS)
- Introduction to the statistical software R (seminar, 1 SWS)

Workload:

- 150 Hours private studies and exercises
- 90 Hours in-classroom work

Contents of teaching:

- Introduction to clinical epidemiology
- Diagnostic studies
- Frequency measures
- Study designs (randomized controlled trials, cohort studies, case-control studies, cross-sectional studies).
- Effect measures
- Coincidence, Bias and Confounding
- Causality
- Study design and evaluation
- Critical reading and evaluation of original scientific papers
- Different methodologies of qualitative research and their methodological implementation (e.g. grounded theory, ethnography, narrative research)
- Research process in qualitative research: in particular, development of research questions, case selection strategies and data collection (including various forms of interviews, group discussion, participant observation) and data analysis (including content analysis and data analysis according to the Grounded Theory Methodology)
- Theoretical-methodological justifications as well as method-specific and overarching quality criteria of qualitative research
- Programming in R
- Reading and writing data in R
- Data analysis and graphics in R

Qualification-goals/Competencies:

- Knowledge and understanding: Students will be able to explain the terms disease registry, incidence, prevalence, mortality, lethality and interpret corresponding measures.
- Use, application and generation of knowledge: They can judge which study design is considered adequate for which specific research question.
- Use, application and generation of knowledge: They will be able to assess whether the study methodology used leads to reliable or biased results.
- Use, application and generation of knowledge: They can formally analyze and critically evaluate the internal and external validity as well as the reporting quality of an original scientific paper.
- Use, application and generation of knowledge: They will be able to evaluate data, results, methods of epidemiological research and original scientific papers in the context of medicine and epidemiology.
- Knowledge and understanding: Students deepen their knowledge of different methodologies and methods of qualitative research and understand their epistemological foundations. They can explain the differences between qualitative and quantitative approaches in the social sciences and understand when and why qualitative methods are used. Students gain an overview of key qualitative methods such as interviews (narrative, focused, guided), focus groups, participatory observations and case study research. They acquire in-depth knowledge of quality criteria and methodological procedures in the qualitative research process.
- Use, application and generation of knowledge: Students will be able to classify different qualitative studies theoretically and methodologically and critically evaluate decisions and methodological procedures in the research process. Students can develop an appropriate research design for a qualitative study. They can develop research questions that are suitable for qualitative methods and plan strategies for data collection and analysis. Students learn how to conduct interviews and practice various techniques of qualitative data analysis, such as qualitative content analysis or data analysis according to the strategies of grounded theory methodology. They are able to systematically analyse qualitative data and identify categories and patterns.
- Use, application and generation of knowledge: Students develop an awareness of the challenges and limitations of qualitative

research. They reflect on their own role as researchers and the relevance of their perspectives for the research process. In addition, they can critically evaluate qualitative studies by assessing the research process and the quality and trustworthiness of the results.
- Use, application, and creation of knowledge: Students will be able to read data sets into R and save and export edited data sets for other applications.
- Use, application, and creation of knowledge: Students will be able to perform simple data analysis in R and present the results in graphs.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. med. Alexander Katalinic

Teacher:

- Institute of Health Sciences
- Institute for Social Medicine and Epidemiology

- Laura Schumann, M.Sc.
- Prof. Dr. Katharina Röse
- Prof. Dr. phil. Matthias Bethge
- Mag. rer. nat. Stella Lemke

Literature:

- Creswell J: Qualitative Inquiry and Research Design. Choosing among five approaches - 4rd. ed. Thousend Oak et al., SAGE Publication, 2018.
- Gordis L: Epidemiologie - Marburg: Verlag im Kilian, 2008
- Przyborski A, Wohlrab-Sahr M: Qualitative Sozialforschung. Ein Arbeitsbuch - 4. Aufl. München: Oldenburg Verlag, 2014
- Creswell J: Qualitative Inquiry and Research Design. Choosing among five approaches - 4rd. ed. Thousend Oak et al., SAGE Publication, 2018.
- de Vries A, Meys J: R für Dummies - Weinheim: Wiley, 2018

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination(s):
- Conducting and transcribing an interview, and completing a worksheet on qualitative data analysis

Module Exam(s):
- GW4100-L1: Research Methods in Health Sciences, written exam, 90min, 100% of the module grade

GW4200-KP07 - Social Medicine (SoWiGr)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	7

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (compulsory), Theories and methods of health care, 1st semester
- Master in Health and Healthcare Science 2019 (compulsory), Theories and methods of health care, 1st semester

Classes and lectures:

- Social Medicine (lecture, 2 SWS)
- Health Promotion and Prevention (lecture, 2 SWS)
- Scientific Work in the Health Sciences (seminar, 1 SWS)

Workload:

- 135 Hours private studies and exercises
- 75 Hours in-classroom work

Contents of teaching:

- Explanatory models for health and disease
- Lay concepts of health and disease
- Social determinants of health and illness
- Interrelations between migration, poverty, work, and health
- Gender-sensitive perspectives on health and healthcare
- Health over the life course and disease coping strategies.
- Connections between chronic diseases and social living conditions
- Health literacy and self-management of chronic diseases and dysfunctions
- Media construction of health, health education, and strengthening of health literacy
- Enabling health models and approaches to health promotion and disease prevention
- Strategies for health promotion in communities
- Support for socially disadvantaged groups
- Methods of systematic literature research (especially Medline via PudMed), introduction to different literature databases

Qualification-goals/Competencies:

- Knowledge and Understanding: Students will be able to describe different social science explanatory models as well as lay concepts of health and disease.
- Knowledge and Understanding: Students will be able to reflect on and critically analyze the sociocultural, economic, and ecological causes and contexts of health and disease and their unequal distribution in society.
- Use, application and generation of knowledge: Students will be able to explain and analyze specific health risk constellations in individual cases and populations and the conditions under which socially unequal health opportunities arise over the life course.
- Use, application and generation of knowledge: Students are able to critically analyze concrete approaches to health promotion and prevention. They are capable of identifying measures for health-promoting living environments and developing targeted support strategies for socially disadvantaged groups.
- Communication and cooperation: Students are able to bring their own perspectives and competencies into interprofessional exchange and group processes in a goal-oriented, constructive and solution-oriented manner.
- Scientific self-conception / professionalism: Students reflect on their own understanding of health and illness against the background of social science theories and models. They understand health promotion and prevention as a profession-related and interprofessional field of action.
- Knowledge and understanding: Students will be able to carry out the steps of a systematic literature review and identify relevant sources for a research question.

Grading through:

- written homework

Responsible for this module:

- Prof. Dr. Katharina Röse

Teacher:

- Institute for Social Medicine and Epidemiology
- Institute of Family Medicine
- Institute of Health Sciences

- Prof. Dr. Katharina Röse

- Prof. Dr. phil. Dipl.-Soz. Katja Götz
- Cornelia Heinze, M.Sc.
- Marie Jacob, M.Sc.
- M.A. Annika Sternberg
- Julia Peper, M.Sc.

Literature:

- Hurrelmann K, Richter M: Gesundheits- und Medizinsoziologie. Eine Einführung in sozialwissenschaftliche Gesundheitsforschung. - Weinheim, München: Beltz Juventa, 2013
- Hurrelmann K, Richert M, Klotz T, Stock S: Referenzwerk Prävention und Gesundheitsförderung. - Bern Hogrefe, 2018
- Franke A: Modelle von Gesundheit und Krankheit. - Bern: Huber, 2012
- Richter M, Hurrelmann, K: Soziologie von Gesundheit und Krankheit. - Wiesbaden: Springer VS, 2016

Language:

- German and English skills required

Notes:

Examination performances are considered to have been achieved if they have been assessed with at least sufficient marks. The grading is based on the evaluation of a written paper.

Admission requirements for taking the module:
- None

Admission requirements for taking module examination:
- Organisation of a seminar

Module Exam:
- GW4200-L1: Social Medicine, term paper, 100% of module grade.

GW4300-KP05 - Development and Evaluation of Complex Interventions 1 (EuEInI)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), Research in the health and care sciences, 1st semester
- Master in Health and Healthcare Science 2025 (compulsory), Research in the health and care sciences, 1st semester

Classes and lectures:

- Development of Complex Interventions (seminar, 1 SWS)
- Piloting Complex Interventions (seminar, 1 SWS)

Workload:

- 120 Hours private studies and exercises
- 30 Hours in-classroom work

Contents of teaching:

- In this course, starting from the MRC framework for the development and evaluation of complex interventions, the first phases for the development and piloting of (especially in the field of non-pharmacological interventions) widely used complex interventions are addressed. Students will receive basic information in the lecture, which will be reinforced with examples in the exercise. The exercises are designed to analyze the individual elements of the development or piloting of complex interventions in more detail and to develop and theoretically substantiate them on the basis of relevant publications as well as their own questions.The content focuses on the theoretical foundations, principles and models of the development, feasibility testing and evaluation of complex interventions. Methodological challenges, e.g. in modeling relevant outcome parameters as well as reporting, will also be addressed.

Qualification-goals/Competencies:

- Knowledge and UnderstandingKnowledge Enhancement: Students will know and understand the requirements for developing and piloting complex interventions in the health professions and medicine. Knowledge enhancement: Students know models for the development of complex interventions and their requirements as well as approaches for feasibility testing and piloting and their delimitation.Knowledge enhancement: The students know specific research methods that are used in this context and can reflect on them on the basis of the knowledge already acquired about simple interventions. This applies in particular to the interaction of different research methods (mixed methods).
- Use, application and generation of knowledgeUse and transfer: Students are able to classify already known interventions with regard to their degree of complexity and the resulting requirements for development and piloting and to assess the quality of the available scientific evidence or the appropriateness of the methods used.Utilization and Transfer: Students will be able to identify complex interventions and outline the phases of development and piloting.Scientific Innovation: Students will be able to create research plans for the development and piloting of complex interventions using appropriate methods.
- Communication and cooperationStudents are able to argue the importance of the special focus of complex interventions and confidently justify the resulting requirements for development and piloting.They can adequately describe and justify the planned methodological procedure for these steps in writing and orally.
- Scientific self-understanding and professionalism:Students will be able to grasp the importance of complex interventions for health care practice in the health professions and medicine, and will understand the importance of in-depth theory-based development, taking into account relevant process and contextual factors.

Grading through:

- Oral presentation

Is requisite for:

- Development and Evaluation of Complex Interventions 2 (GW4500-KP05)

Responsible for this module:

- Prof. Dr. phil. Anne Rahn

Teacher:

- Institute for Social Medicine and Epidemiology - Section for Research and Teaching in Nursing
- Prof. Dr. phil. Anne Rahn

Literature:

- Skivington K, Matthews L, Simpson S A, Craig P, Baird J, Blazeby J M et al. (2021): A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance BMJ - 374 :n2061 doi:10.1136/bmj.n2061
- Moore G, Audrey S, Barker M, Bond L, Bonell C, Hardeman W et al.: Process evaluation of complex interventions: UK Medical Research

Council guidance. - London: Medical Research Council, 2016
- Richards D & Rahm Hallberg I. (Hg.): Complex interventions in health: an overview of research methods. - London & New York: Routledge, 2015

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for the module examination(s):
- None

Module Exam(s):
- GW4300-L1, Development and Evaluation of Complex Interventions 1, oral presentation, 30 minutes, 100% of the module grade

GW4420-KP05 - Care Quality (VerQual)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Healthcare Development and Management, 1st semester
- Master in Health and Healthcare Science 2019 (optional subject), Health Services Research, 1st semester
- Master in Health and Healthcare Science 2025 (optional subject), Health Services Research, 1st semester
- Master in Health and Healthcare Science 2025 (optional subject), Healthcare Development and Management, 1st semester

Classes and lectures:

- Quality Management and Quality Indicators (lecture, 2 SWS)
- Organizational Behavior in Healthcare Institutions (seminar, 1 SWS)
- Journal Club Care Quality (exercise, 1 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Quality in health care: Definition and Conceptual Foundations
- Quality dimensions
- Quality and patient safety research
- Clinical, health care science, legal, business management and health policy background of quality assurance.
- Methods and instruments for measuring and monitoring quality
- Types of quality indicators (especially rate-based indicators and sentinel event indicators)
- Development and quality criteria of quality indicators
- Risk adjustment procedure
- Data basis of quality measurements (e.g. routine data, registers)
- Consideration of healthcare facilities in terms of organization-specific characteristics.
- Consideration of the different levels at which organizational behavior can occur and their impact on quality of care.
- Classification of studies in the model of organizational behavior
- Critical examination of current publications on topics of quality assurance in English and German (group work)
- Risk management
- Guidelines and current QM-specific legislation (e.g. Hospital Reform Act)
- Outpatient and cross-sector quality assurance
- Tasks and objectives of relevant institutions / facilities / organizations in quality management
- Quality management models

Qualification-goals/Competencies:

- Knowledge and Understanding: Students can define and explain the terms quality, quality assurance, quality development and quality indicators.
- Knowledge and Understanding: Students understand the complexity of health care as a challenge to operationalizing quality.
- Knowledge and understanding: Students are able to describe and discuss structural, process and outcome quality as well as further concepts of the quality dimensions.
- Knowledge and Understanding: Students will be able to explain the function of clinical guidelines as a means of quality assurance.
- Knowledge and Understanding: Students will be able to describe quality assurance research as part of health services research.
- Knowledge and Understanding: Students will be able to present important legal and institutional requirements of quality assurance.
- Knowledge and understanding: Students can describe quality assurance as a management task.
- Knowledge and understanding: Students know possibilities and limits of established methods and instruments of measuring and monitoring quality discuss.
- Knowledge and Understanding: Students will be able to explain types of quality indicators.
- Knowledge and understanding: Students can present typical data bases for quality assurance with their possibilities and limitations.
- Knowledge and understanding: Students will be able to evaluate and critically discuss health care facilities in terms of organization-specific characteristics.
- Knowledge and understanding: Students will be able to explain the different levels of organizational behavior.
- Knowledge and understanding: The students know the risk adjustment procedures and canname them.
- Use, application, and generation of knowledge: Students can justify the need for science-based quality assurance.
- Use, application, and generation of knowledge: students will be able to critically evaluate quality as a means of managing the health care system.
- Use, application and generation of knowledge: Students can systematically assess the quality of quality indicators.

- Use, application and generation of knowledge: Students will be able to describe and reflect on the impact of different levels of organizational behavior on quality of care.
- Use, application and generation of knowledge: Students will be able to critically evaluate studies regarding the application of the concept to organizational behavior.
- Communication and Cooperation: Students critically examine current issues in the health sciences.
- Communication and collaboration: students evaluate designs used and results, as well as validity and usefulness of results.
- Communication and cooperation: Students are aware of the comparable requirements for quality management and quality measurement across occupational groups and sectors and can transfer the universally valid principles and methods to specific application contexts.
- Knowledge and understanding: Students will be able to explain the principles of interprofessional collaboration and apply them to specific examples.
- Knowledge and Understanding: Students know that many areas of health care can only succeed effectively through interprofessional collaboration.
- Communication and Collaboration: students collaborate with diverse health professions based on mutual respect and shared values.
- Communication and Cooperation: Students will be able to communicate with other health care professionals using appropriate professional language.
- Scientific self-image and professionalism: Students are able to integrate the views and expertise of the professional groups involved in care into interprofessional collaboration and see themselves as part of a whole.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. Katrin Balzer

Teacher:

- Institute of Family Medicine
- Institute for Social Medicine and Epidemiology

- Prof. Dr. Katrin Balzer
- Prof. Dr. phil. Dipl.-Soz. Katja Götz

Literature:

- Geraedts M, Drösler S, Döbler K, Eberlein-Gonska M, Heller G, Kuske S, u. a.: DNVF-Memorandum III Methoden für die Versorgungsforschung , Teil 3: Methoden der Qualitäts- und Patientensicherheitsforschung. - Das Gesundheitswesen. Oktober 2017;79(10):e95 124.
- Pfaff H, Neugebauer E, Glaeske G, Schrappe M, Zeike S, Schwartz FW, u. a., Herausgeber.: Lehrbuch Versorgungsforschung: Systematik - Methodik - Anwendung. 2., vollständig überarbeitete Auflage. - Stuttgart: Schattauer; 2017
- Körner M, Ansmann L, Schwarz B, Kowalski C. (Eds.).: Organizational Behaviour in Healthcare. Theoretical Approaches, methods and empirical results. - LIT Verlag: Zürich, 2018
- Robbins SP, Judge TA.: Organizational Behavior. - 17th edition. Pearson Education, 2017
- Hensen P, (2022): Qualitätsmanagement im Gesundheitswesen: Grundlagen für Studium und Praxis - 3. Aufl. Berlin: Springer Gabler
- Helou A, Schwartz FW, Ollenschläger G, (2002): Qualitätsmanagement und Qualitätssicherung in Deutschland. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. - 45:205-214. Springer-Verlag
- Ackermann, D, (2008): Grundlagen des Qualitätsmanagements. - Bremen: Apollon Hochschule

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination:
- None

Module exam:
- GW4420-L1: Care Quality, written exam, 90 min., 100 % of module grade

GW4430-KP05 - Neurophysiological Basics of Pain and Multimodal Interdisciplinary Therapy (NeuphSch)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Interprofessional Care and Research in Pain, 1st semester

Classes and lectures:

- Neurophysiology of pain (lecture, 2 SWS)
- Multimodal interdisciplinary pain therapy (seminar, 2 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Anatomy: nerve fibre types, nociceptors, mechanoreceptors, synapse, spinal cord, thalamus, cortical and subcortical structures including brainstem, cerebral cortex, lateral and medial pain system ascending and descending pain pathways
- Physiology: action potential, resting membrane potentials, ion channels, second messenger systems, transduction, phosphorylation, gene transcription, neuroplasticity, neurotransmitters
- Brain networks: default mode network, salience network, sensorimotor network
- Placebo/nocebo mechanisms
- Peripheral and central sensitisation processes
- Importance of interprofessional collaboration for effective pain management
- Roles and responsibilities of different healthcare professions in pain management
- Setting goals that are specific, measurable, achievable, relevant and time-bound (SMART goals)
- Pain Neuroscience Education as a form of treatment
- Strategies to support self-management
- Digital health resources (e.g. eHealth, telemedicine) to support self-management
- Differences between active (e.g. movement therapy, behavioural therapy) and passive (e.g. manual therapy, electrotherapy) treatment approaches

Qualification-goals/Competencies:

- Knowledge and understanding: Students can name the definitions of the International Association for the Study of Pain (IASP) for various pain mechanisms.
- Knowledge and understanding: Students can explain which anatomical structures, physiological and biological processes are involved in the perception and modulation of nociceptive stimuli.
- Knowledge and understanding: Students understand the contribution of biological, psychological and social factors in pain chronification and evaluate and describe their influence on the individual case-related pain experience.
- Use, application and generation of knowledge: The students are able to analyse and explain the complex and multidimensional mechanisms of a pain experience to those affected.
- Use, application and generation of knowledge: The students can evaluate the individual factors influencing the experience of pain, such as distraction, habituation (desensitisation), physical activity, placebo/nocebo and integrate these into patient management.
- Use, application and generation of knowledge: The students can recognise and interpret different patterns of nociceptive, neuropathic and nociplastic pain and adapt their clinical actions to the dominant pain mechanism in each case.
- Use, application and generation of knowledge: The students can assess and apply suitable strategies and measures to promote physical activity, self-efficacy and sustainability, taking psychosocial factors into account.
- Use, application and generation of knowledge: The students know relevant therapy outcomes and can evaluate them.
- Communication and Cooperation: The students can communicate with patients in a supportive manner.
- Communication and Cooperation: The students can provide individualised education on health knowledge and pain mechanisms as part of the therapy.
- Communication and Cooperation: The students can document the therapeutic process.
- Scientific self-conception and professionalism: The students can reflect on the therapeutic process, including individual and professional boundaries.
- Scientific self-image / professionalism: The students can develop a professional attitude of tolerant acceptance and, if necessary, professional demarcation towards people with other value systems for the context of therapy
- Scientific self-image / professionalism: The students can evaluate the need for interprofessional collaboration
- ·Communication and Cooperation: The students can reflect on their own inner attitude, differences in values and your own emotional stress.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. Kerstin Lüdtke

Teacher:

- Institute of Health Sciences
- Department of Anesthesiology and Critical Care Medicine
- Institute for Social Medicine and Epidemiology - Section for Research and Teaching in Nursing

- PD Dr. rer. hum. biol. Tibor Szikszay
- PhD Waclaw Adamzyk
- M.Sc. Adrian Roesner
- Priv.-Doz. Dr. rer. nat. Ulrike Kaiser

Literature:

- Moseley, L. G., & Butler, D. S.: Explain Pain Supercharged - South Australia: Noigroup Publications (2017)
- Butler, D. S. & Moseley, L. G.: Schmerzen verstehen - Springer Verlag (2016)
- World Health Organisation: International Classification of Diseases - 11th Revision (ICD-11). Geneva (2022)
- Louw, A.: Pain Neuroscience Education: Teaching People About Pain - 2nd Edition Orthopedic Physical Therapy Products (2018)
- International Association For The Study Of Pain: Declaration of Montreal - Declaration that Access to Pain Management Is a Fundamental Human Right - (2015)

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination:
- None

Module examination:
- GW4430-L1: Neurophysiological Basics of Pain and Multimodal Interdisciplinary Therapy, exam, 90 minutes, 100 % of the module grade

CS4550-KP15 - Applied Digital Healthcare (PrDG)

Duration:	Turnus of offer:	Credit points:	Max. group size:
2 Semester	each summer semester	15	10

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Digital Healthcare, 2nd and 3rd semester
- Master in Health and Healthcare Science 2025 (optional subject), Digital Healthcare, 2nd and 3rd semester

Classes and lectures:

- Research and Project Management (lecture, 1 SWS)
- Jour Fixe Digital Healthcare (seminar, 1 SWS)
- Applied Digital Healthcare (project work, 10 SWS)

Workload:

- 350 Hours group work
- 40 Hours written report
- 30 Hours in-classroom work
- 30 Hours oral presentation (including preparation)

Contents of teaching:

- Concept of digital systems in healthcare
- Analysis, design and evaluation of digital systems in the healthcare sector
- Project management and interdisciplinary teamwork

Qualification-goals/Competencies:

- Students will be able to contribute effectively to a team and critically assess their interpersonal skills
- They have the methodological competence to analyze complex tasks, to divide them into sub-tasks and to implement them in a work-sharing conception
- They know the specific requirements of digital systems in healthcare and can apply this knowledge to the conception and design of digital systems.
- Communication and cooperation: Students collaborate with diverse professions based on mutual respect and shared values.
- Communication and cooperation: Students will be able to communicate with other professions using appropriate professional language.
- Scientific self-concept and professionalism: Students will be able to integrate the perspectives and expertise of the professional groups involved in the provision of care into interprofessional collaboration and see themselves as part of a whole.
- Scientific self-concept and professionalism: Students develop scientific reserach with other professions.
- Knowledge and Understanding: Students will be able to explain the principles of interprofessional collaboration and apply them to specific examples.
- Knowledge and Understanding: Students know that many areas of health care can only succeed effectively through interprofessional collaboration.

Grading through:

- Group work

Requires:

- Digital Healthcare (CS4400-KP05)
- Computer Science for Health and Healthcare Science (CS4460-KP05)

Responsible for this module:

- Prof. Dr.-Ing. Nicole Jochems
- Prof. Dr.-Ing. Andreas Schrader

Teacher:

- Institute of Health Sciences
- Institute for Social Medicine and Epidemiology
- Institute of Telematics
- Institute of Human-Centered Interactive Systems

- Prof. Dr.-Ing. Andreas Schrader
- Prof. Dr.-Ing. Nicole Jochems
- Prof. Dr. phil. Sascha Köpke
- Prof. Dr. med. Alexander Katalinic
- Prof. Dr. Kerstin Lüdtke

- Prof. Annette Baumgärtner, PhD

Literature:

- :

Language:

- German and English skills required

Notes:

Project takes place in cooperation with the projects of the computer science master's programs.

It is an ungraded certificate of achievement of category B.

(Proportion of Institute for Multimedia and Interactive Systems to S is 50%).
(Proportion of Telematics in S is 50%)
(Proportion of Institute for Multimedia and Interactive Systems in P is 50%)
(share of telematics in P is 50%)
(Proportion of health sciences in V is 50%)
(Proportion of social medicine in V is 50%)

Admission requirement for taking the module:
- CS4400 Digital Healthcare
- CS4460 Computer Science for Health and Healthcare Science.

Admission requirement for taking module exam:
- None

Module exam:
CS4550-L1: Applied Digital Healthcare, milestone acceptances and project report (ungraded), 100% of module grade.

GW4710-KP15 - Applied Evidence-Based Healthcare Development (PrVerEnt)

Duration:	Turnus of offer:	Credit points:	Max. group size:
2 Semester	each summer semester	15	8

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Healthcare Development and Management, 2nd and 3rd semester
- Master in Health and Healthcare Science 2025 (optional subject), Healthcare Development and Management, 2nd and 3rd semester

Classes and lectures:

- Research and Project Management (lecture, 1 SWS)
- Jour Fixe Evidence-Based Healthcare Development (seminar, 1 SWS)
- Applied Evidence-Based Healthcare Development (project work, 3 SWS)

Workload:

- 375 Hours private studies and exercises
- 75 Hours in-classroom work

Contents of teaching:

- Basics of research and project management: phases of a project, definition of project goals, creation of work breakdown structures with work packages, definition of milestones, time planning and management, self-organization, management and project coordination in work groups, dealing with difficulties as well as error and crisis management in projects.
- Planning and implementation of your own project on the evidence-based further development of health care at the organizational (meso) or system (macro) level (also possible as a sub-project within the framework of an already existing extensive project)
- Methods to actively engage representatives of vulnerable or disadvantaged target groups in practice.
- Presentation and discussion of the respective work status of the project in the group
- Leading and guiding project teams
- Reflection on experiences, own roles and own learning growth within the project.

Qualification-goals/Competencies:

- Knowledge and understanding: Students will be able to describe and compare models and methods of research and project management and analyze and evaluate them in terms of their suitability for specific research or development projects in the healthcare sector.
- Knowledge and Understanding: Students will be able to describe and compare models for implementing evidence-based change in health care practice and analyze and evaluate them for their appropriateness to a specific change project.
- Use, application and generation of knowledge: To the greatest extent possible, students can independently identify needs for evidence-based advancement of health care practice based on given conditions in health care (micro-, meso-, or macro-level) and formulate a corresponding workable project goal.
- Use, application and generation of knowledge: Students can plan a project for the further development of health care to the greatest possible extent independently for this project objective and justify their planning decisions in a theoretically and empirically plausible manner with regard to the groups of people, milestones and methods to be included.
- Use, application and generation of knowledge: Students are able to coordinate and control the implementation of the planned project under expert supervision. In doing so, they are able to critically reflect on interim results or deviations from the initial conditions or from the project plan that occur, to systematically research any further information that may be required and to adjust the project plan in a justified manner if necessary and in consultation with all those involved.
- Communication and cooperation: Students are able to independently describe the goals and methodological approach of a practice development project in writing and orally in a manner appropriate to the target group and to represent them to others.
- Communication and cooperation: The students are able to form and lead project teams/working groups independently as far as possible, in which all necessary target groups or groups of people to be included are sufficiently represented. In particular, they are sensitized to and able to stimulate and support the active participation of representatives of vulnerable groups (e.g. patients) or groups that are insufficiently considered in practice.
- Communication and cooperation: Students are able to give appropriate, respectful feedback to team members about work steps and results and to receive feedback on their own decisions or actions appropriately and to use it for their own learning processes.
- Scientific self-concept and professionalism: Students are able to analyze the course and results of the project as far as possible independently against the background of the framework conditions of health care and their own scope for decision-making and to identify necessary further development needs, both at the organizational or system level and with regard to their own professional roles and tasks.
- Students collaborate with diverse health professions based on mutual respect and shared values.
- Students know that many areas of health care can only succeed effectively through interprofessional collaboration.
- Students will be able to communicate with other health care professionals using appropriate professional language.
- Students will be able to integrate the perspectives and expertise of the professional groups involved in the provision of care into

interprofessional collaboration and see themselves as part of a whole.
- Students develop scientific research with other health professionals.
- Students will be able to explain the principles of interprofessional collaboration and apply them to specific examples.

Grading through:

- project work

Responsible for this module:

- Prof. Dr. phil. Anne Rahn

Teacher:

- Institute of Health Sciences
- Institute for Social Medicine and Epidemiology

- Prof. Dr. Katrin Balzer
- Prof. Dr. phil. Anne Rahn
- Prof. Dr. med. Alexander Katalinic
- Prof. Dr. Kerstin Lüdtke
- Prof. Annette Baumgärtner, PhD

Literature:

- Harris JL, Roussel L, Dearman C, Thomas PL.: Project Planning and Management. A Guide for Nurses and Interprofessional Teams. - 2nd ed. Jones & Bartlett Learning: Burlington MA, 2016
- Hoben M, Bär M, Wahl H-W.: Implementierungswissenschaft für Pflege und Gerontologie. Grundlagen, Forschung und Anwendung ein Handbuch. - Kohlhammer: Stuttgart, 2016.

Language:

- German and English skills required

Notes:

Admission requirement for taking the module:
- none

Admission requirements for participation in module examinations:
-none

Module exams:
- GW4710-KP15 Applied Evidence-Based Healthcare Development, project work, 100% of module grade.

GW4730-KP15 - Applied Health Service Research (PrVerFo)

Duration:	Turnus of offer:	Credit points:
2 Semester	each summer semester	15

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Health Services Research, 2nd and 3rd semester
- Master in Health and Healthcare Science 2025 (optional subject), Health Services Research, 2nd and 3rd semester

Classes and lectures:

- Research and Project Management (lecture, 1 SWS)
- Jour Fixe Healthcare Research (seminar, 1 SWS)
- Applied Health Service Research (project work, 3 SWS)

Workload:

- 375 Hours private studies and exercises
- 75 Hours in-classroom work

Contents of teaching:

- Basics of research and project management (phases of a project, definition of project goals, creation of work breakdown structures with work packages, definition of milestones, time planning and time management, self-organisation, management and project coordination in working groups, dealing with difficulties as well as error and crisis management in projects)
- Methods and fields of application of health services research
- Planning and implementation of your own healthcare research project (possibly as a sub-project within an ongoing research project)
- Creating an exposé and a study protocol
- Recruitment of participants
- Carrying out qualitative and/or quantitative surveys
- Data acquisition and data management
- Analysing qualitative and/or quantitative data
- Reporting under consideration of reporting guidelines (e.g. CONSORT, STROBE or SRQR)
- Presentation and discussion of the current status of the project in the group
- Reflection on experiences, own roles and own learning gains within the project

Qualification-goals/Competencies:

- Knowledge and understanding: Students will be able to describe and compare models and methods of research and project management and analyze and evaluate them with regard to their suitability for projects in the context of health services research.
- Knowledge and understanding: Students will be able to describe and compare the significance of the methods and fields of application of health services research and analyze and evaluate them in terms of their suitability for improving health care.
- Use, application and generation of knowledge: Students independently acquire research methodological and methodical expertise required for the project under supervision and apply it in a project in a reflective and reasoned manner.
- Use, application and generation of knowledge: Students are able to coordinate and control the implementation of the planned project under expert supervision. In doing so, they are able to critically reflect on interim results or deviations from the initial conditions or from the project plan that occur, to systematically research any further information that may be required and to adjust the project plan in a justified manner if necessary and in consultation with all those involved.
- Cooperation and communication: Students are able to coordinate, lead and document working group meetings. They recognize potential conflicts in cooperation and deal with errors and difficulties in a reflective and solution-oriented manner.
- Communication and cooperation: Students are able to independently describe the objectives and methodological approach of a health services research project in writing and orally in a manner appropriate to the target group and to represent them to other stakeholders.
- Communication and cooperation: Students are able to give team members appropriate, respectful feedback on work steps and results and to appropriately receive feedback on their own decisions or actions and use it for their own learning processes.
- Scientific self-concept and professionalism: Students are able to analyze the course and results of the project against the background of the framework conditions of health care and their own scope for decision-making and to identify necessary further research needs.
- The students develop scientific reserach with other health professionals.
- Students collaborate with diverse health professions based on mutual respect and shared values.
- Students know that many areas of health care can only succeed effectively through interprofessional collaboration.
- Studnets will be able to communicate with other health care professionals using appropriate professional language.
- Students will be able to integrate the perspectives and expertise of the professional group involved in the provision of care into interprofessional collaboration and see themselves as part of a whole.
- Studnets will be able to explain the principles of interprofessional collaboration and apply them to specific examples.

Grading through:

- project work

Responsible for this module:

- Prof. Dr. phil. Matthias Bethge

Teacher:

- Institute of Health Sciences
- Institute for Social Medicine and Epidemiology

- Prof. Dr. phil. Matthias Bethge
- Mag. rer. nat. Stella Lemke
- Prof. Dr. Kerstin Lüdtke
- Prof. Annette Baumgärtner, PhD

Literature:

- Harris J, Roussel L, Dearman C, Thomas P (2016): Project Planning and Management. A Guide for Nurses and Interprofessional Teams - 2nd ed. Burlington: Jones & Bartlett Learning
- Pfaff H, Neugebauer E, Schrappe M, Glaeske G (Hrsg.) (2017): Lehrbuch Versorgungsforschung: Systematik - Methodik - Anwendung. - 2. Auflage. Stuttgart: Schattauer
- Meyer H, Reher H-J (2016): Projektmanagement: Von der Definition über die Projektplanung zum erfolgreichen Abschl - Berlin: Springer

Language:

- German and English skills required

Notes:

Admission requirement for taking the module:
- none

Admission requirement for participation in module examination(s):
- none

Module exam(s):
GW4730-L1: Applied Health Service Research, project work, 100% of the module grade.

GW4750-KP11 - Advanced Health Services Research (WVFo)

Duration:	Turnus of offer:	Credit points:
2 Semester	every summer semester	11

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Health Services Research, 2nd and 3rd semester
- Master in Health and Healthcare Science 2019 (optional subject), Health Services Research, 2nd and 3rd semester

Classes and lectures:

- Applied Qualitative Research (seminar, 1 SWS)
- Advanced Methods of Knowledge Synthesis and Modeling (seminar, 2 SWS)
- Advanced data analysis with R (seminar, 2 SWS)
- Advanced Study Designs (seminar, 1 SWS)

Workload:

- 240 Hours private studies and exercises
- 90 Hours in-classroom work

Contents of teaching:

- Randomized and non-randomized studies for evaluation in healthcare
- Advanced statistical methods for the evaluation of healthcare (health services research or quality management)
- Developing healthcare science questions
- Identification and application of appropriate methods for answering various healthcare science questions
- Study selection and data extraction for systematic reviews
- Quality assessment of primary studies
- Meta-analysis (effect sizes, fixed-effect and random-effects models, heterogeneity, forest plots)
- Presentation and reporting of systematic reviews
- Deepening data analysis, theory development, and presentation of results in qualitative research
- Triangulation in qualitative research
- Ethical aspects in research involving vulnerable groups
- Model assumptions for linear and logistic regression
- Cross-validation
- Data exploration with ggplot2
- Graphical representation of model results
- Visualization of uncertainties
- Creation of interactive dashboards and visualizations

Qualification-goals/Competencies:

- Knowledge and understanding: Students can describe a wide range of study types and analyze their suitability for descriptive, explanatory, or evaluative health services research questions. In particular, they can describe and explain the strengths and weaknesses of various randomized and non-randomized studies, as well as routine data-based studies and mixed-methods studies.
- Knowledge and understanding: Students understand the importance of systematic reviews and meta-analyses for generating evidence in health and healthcare sciences.
- Knowledge and understanding: Students are familiar with the individual steps involved in conducting a systematic review and meta-analysis (e.g., search strategies, quality assessment, statistical models).
- Knowledge and understanding: Students are familiar with suitable AI-based tools that support the implementation of systematic reviews and meta-analyses.
- Knowledge and understanding: Students are familiar with suitable software that supports the assessment of bias risk and enables meta-analyses.
- Knowledge and understanding: Students deepen their knowledge of different strategies for qualitative data analysis.
- Knowledge and understanding: Students recognize the specific challenges involved in implementing qualitative and quantitative study designs to answer healthcare science questions. They reflect on the methodological perspectives of different research approaches.
- Knowledge and understanding: Students are familiar with the theoretical foundations of linear and logistic regression models as well as key methods for model validation.
- Knowledge and understanding: Students understand the prerequisites, assumptions, and limitations of linear and logistic regression models and can classify their use in different
- Knowledge and understanding: Students have an in-depth understanding of the importance of visualizations in exploratory data analysis and the presentation of results.
- Use, application, and generation of knowledge: Students are able to independently develop systematic search strategies and implement them in relevant databases.
- Use, application, and generation of knowledge: Students can select primary studies according to specified criteria, evaluate them

critically, and extract data reliably.
- Use, application, and generation of knowledge: Students apply statistical methods to conduct and interpret meta-analyses, take heterogeneity and bias into account, and draw reflective conclusions.
- Use, application, and generation of knowledge: Students can prepare the results of systematic reviews and meta-analyses in accordance with international standards (e.g., PRISMA) and classify them in scientific discourse.
- Use, application, and generation of knowledge: Students can apply different methods of qualitative data analysis appropriately to the subject matter, acquire skills in the development of empirically based theories, and are able to present the results of qualitative analyses in a comprehensible manner.
- Use, application, and generation of knowledge: Students are able to prepare and analyze data sets in R and document results in a reproducible manner.
- Use, application, and generation of knowledge: Students can implement linear and logistic regression models in R, calculate goodness-of-fit measures, check model assumptions and interpret the results.
- Use, application, and generation of knowledge: Students apply model validation procedures critically and reflectively.
- Use, application, and generation of knowledge: Students can to plot Kaplan-Meier curves and perform Cox regressions in R, and to interpret the results.
- Use, application, and generation of knowledge: Students are able to answer complex research questions with the help of suitable statistical models and critically reflect on the results.
- Use, application, and generation of knowledge: Students can use Shiny to create dashboards and interactive visualizations and use them for presentation and knowledge transfer in research and practice.
- Communication and cooperation: Students are able to communicate their approach and results when creating a systematic review in a clear, transparent, and audience-appropriate manner (e.g., in interdisciplinary teams or publications).
- Kommunikation und Kooperation: Die Studierenden können bei komplexen Evidenzsynthesen kooperativ im Team arbeiten (z. B. beim Screening oder der doppelten Datenextraktion) und die Ergebnisse kritisch abgleichen.
- Kommunikation und Kooperation: Die Studierenden können ihre Analysestrategien und Ergebnisse klar, transparent und zielgruppenorientiert präsentieren sowohl schriftlich als auch mündlich.
- Kommunikation und Kooperation: Die Studierenden tauschen sich sach- und fachbezogen untereinander aus und reflektieren die Notwendigkeit der Vernetzung mit bedeutenden Stakeholdern (z. B. Wissenschaftlern, Gatekeepern, Patientenvertretern) für die Beantwortung versorgungswissenschaftlicher Forschungsfragen.
- Kommunikation und Kooperation: Die Studierenden sind in der Lage, in Teams bei der Bearbeitung komplexer Datensätze konstruktiv zusammenzuarbeiten, Ergebnisse abzugleichen und kritisch zu diskutieren.
- Wissenschaftliches Selbstverständnis / Professionalität: Die Studierenden reflektieren systematische Übersichtsarbeiten und Meta-Analysen als zentrale Methoden evidenzbasierter Forschung und Praxis und sind in der Lage, deren Bedeutung für wissenschaftliches Arbeiten und evidenzbasiertes Handeln kritisch einzuordnen.
- Wissenschaftliches Selbstverständnis / Professionalität: Die Studierenden entwickeln ein kritisches Bewusstsein für Qualität, Transparenz und Reproduzierbarkeit als zentrale Standards wissenschaftlicher Praxis.
- Wissenschaftliches Selbstverständnis / Professionalität: Die Studierenden können die gesellschaftliche und wissenschaftliche Relevanz systematischer Übersichtsarbeiten für Entscheidungsprozesse in Forschung, Politik und Praxis einschätzen.
- Wissenschaftliches Selbstverständnis / Professionalität: Die Studierenden entwickeln ein kritisches Bewusstsein für den verantwortungsvollen Einsatz von Datenanalysen und können die Grenzen von Interpretationen klar benennen.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. phil. Matthias Bethge

Teacher:

- Institute of Health Sciences
- Institute of Family Medicine
- Institute for Social Medicine and Epidemiology

- Prof. Dr. phil. Matthias Bethge
- Prof. Dr. Katharina Röse
- Dr. rer. hum. biol. Nora Eisemann
- Mag. rer. nat. Stella Lemke

Literature:

- :
- :
- :
- :

- :

Language:

- German and English skills required

Notes:

Admission requirement for the module:
- none

Admission requirement for the examination:
- none

Module exam:
- GW4750-L1: Advanced Health Services Research, written exam, 90 min., 100 % of module grade

GW4770-KP11 - Advanced Healthcare Development and Healthcare Management (WVEuM)

Duration:	Turnus of offer:	Credit points:
2 Semester	every summer semester	11

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Healthcare Development and Management, 2nd and 3rd semester
- Master in Health and Healthcare Science 2019 (optional subject), Healthcare Development and Management, 2nd and 3rd semester

Classes and lectures:

- Work and Organizational Psychology (lecture, 2 SWS)
- Work and Organisational Psychology (seminar with practical exercises, 1 SWS)
- Advanced methods of knowledge synthesis and modeling. (seminar, 2 SWS)
- Applied qualitative research (seminar, 1 SWS)

Workload:

- 225 Hours private studies and exercises
- 105 Hours in-classroom work

Contents of teaching:

- Search strategies for systematic reviews
- Study selection and data extraction for systematic reviews
- Quality assessment of primary studies
- Meta-analysis (effect sizes, fixed-effect and random-effects models, heterogeneity, forest plots)
- Presentation and reporting of systematic reviews
- History and theoretical foundations of work and organizational psychology
- Methods of personnel development (e.g., behavior modeling training, approaches to work-related or workplace learning, leadership, mentoring, and coaching approaches, approaches to health promotion)
- Methods of organizational development (e.g., employee surveys, designing change processes, dealing with resistance to change, promoting innovation processes)
- Planning and conducting employee appraisals, group work, and other communication and coordination tasks as part of the management or control of research or change processes in healthcare
- Workplace and mental health/illness as well as physical illnesses
- Deepening data analysis, theory development, and presentation of results in qualitative research
- Triangulation in qualitative research
- Ethical aspects in research involving vulnerable groups

Qualification-goals/Competencies:

- Knowledge and understanding: Students understand the importance of systematic reviews and meta-analyses for generating evidence in health and healthcare sciences.
- Knowledge and understanding: Students are familiar with the individual steps involved in conducting a systematic review and meta-analysis (e.g., search strategies, quality assessment, statistical models).
- Knowledge and understanding: Students are familiar with suitable AI-based tools that support the implementation of systematic reviews and meta-analyses.
- Knowledge and understanding: Students are familiar with suitable software that supports the assessment of bias risk and enables meta-analyses.
- Knowledge and understanding: Students deepen their knowledge of different strategies for qualitative data analysis.
- Knowledge and understanding: Students recognize the specific challenges involved in implementing qualitative and quantitative study designs to answer healthcare science questions. They reflect on the methodological perspectives of different research approaches.
- Knowledge and understanding: Students can describe and explain key theories, empirical findings, and methods in industrial and organizational psychology.
- Knowledge and understanding: Students can identify and explain typical challenges of working in organizations from a psychological and sociological perspective, particularly in relation to work motivation and work behavior, communication, cooperation and conflicts, leadership, workplace-based/workplace-related learning, and health promotion and prevention in the workplace.
- Knowledge and understanding: Students can apply the knowledge of work and organizational psychology described above to the specific conditions of healthcare organizations.
- Use, application, and generation of knowledge: Students are able to independently develop systematic search strategies and implement them in relevant databases.
- Use, application, and generation of knowledge: Students can select primary studies according to specified criteria, evaluate them critically, and extract data reliably.
- Use, application, and generation of knowledge: Students apply statistical methods to conduct and interpret meta-analyses, take

heterogeneity and bias into account, and draw reflective conclusions.
- Use, application, and generation of knowledge: Students can prepare the results of systematic reviews and meta-analyses in accordance with international standards (e.g., PRISMA) and classify them in scientific discourse.
- Use, application, and generation of knowledge: Students can apply different methods of qualitative data analysis appropriately to the subject matter, acquire skills in the development of empirically based theories, and are able to present the results of qualitative analyses in a comprehensible manner.
- Use, application, and generation of knowledge: Under supervision, students are able to select, test, and evaluate options for action to avoid or solve challenges in occupational and organizational psychology when implementing innovations or managing change processes in healthcare organizations.
- Communication and cooperation: Students are able to communicate their approach and results when creating a systematic review in a clear, transparent, and audience-appropriate manner (e.g., in interdisciplinary teams or publications).
- Communication and cooperation: Students can work cooperatively in teams on complex evidence syntheses (e.g., screening or double data extraction) and critically compare the results.
- Communication and cooperation: Students can present their analysis strategies and results clearly, transparently, and in a way that is tailored to the target audience both in writing and orally.
- Communication and cooperation: Under supervision or in simulated conditions, students are able to plan, conduct, and critically reflect on discussions from the perspective of a person with leadership responsibility in order to avoid or solve work and organizational psychology challenges when implementing innovations or leading change processes in healthcare organizations.
- Scientific self-image / professionalism: Students reflect on systematic reviews and meta-analyses as central methods of evidence-based research and practice and are able to critically assess their significance for scientific work and evidence-based action.
- Scientific self-image / professionalism: Students develop a critical awareness of quality, transparency, and reproducibility as central standards of scientific practice.
- Scientific self-image / professionalism: Students can assess the social and scientific relevance of systematic reviews for decision-making processes in research, politics, and practice.
- Scientific self-image/professionalism: Students have an initial awareness of the requirements for their own leadership and guidance behavior when managing or directing work groups or change processes in health services research or health services management.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. phil. Matthias Bethge

Teacher:

- Institute for Social Medicine and Epidemiology
- Prof. Dr. phil. Matthias Bethge
- Prof. Dr. Katharina Röse
- Mag. rer. nat. Stella Lemke

Literature:

- :
- :
- :
- :

Language:

- German and English skills required

Notes:

Admission requirements for the module:
- None

Admission requirements for the examination:
- None

Module Exam:
GW4470-L1, Advanced Healthcare Development and Healthcare Management, written exam, 90 minutes, 100% of module grade.

GW4780-KP15 - Project Interprofessional Care and Research in Pain (PrIntSch)

Duration:	Turnus of offer:	Credit points:
2 Semester	each summer semester	15

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Interprofessional Care and Research in Pain, 2nd and 3rd semester

Classes and lectures:

- Research and Project Management (lecture, 1 SWS)
- Jour Fixe Interprofessional care and research in pain (seminar, 1 SWS)
- Interprofessional care and research in pain (project work) (project work, 3 SWS)

Workload:

- 375 Hours private studies and exercises
- 75 Hours in-classroom work

Contents of teaching:

- Basics of research and project management: phases of a project, definition of project goals, creation of work breakdown structures with work packages, definition of milestones, time planning and management, self-organization, management and project coordination in work groups, dealing with difficulties as well as error and crisis management in projects.
- Planning and implementation of an independent project including development of the research question, planning, data collection, data evaluation and preparation of a project report (also possible as a sub-project within the framework of an already existing project). This (sub-)project can be deepened or continued in the master thesis.
- Presentation and discussion of the respective work status of the project in the group
- Reflection on experiences, own role and own learning within the project.
- Consideration of ethical requirements in the respective project, if necessary preparation of an ethics application
- Scientific communication: e.g. scientific writing, short scientific talks and posters, science slam

Qualification-goals/Competencies:

- Knowledge and understanding: Students will be able to describe and compare models and methods of research and project management and analyze and evaluate them with regard to their suitability for pain research projects.
- Knowledge and understanding: Students know the legal and ethical requirements for data collection and management in scientific projects.
- Use, application and generation of knowledge: Students can apply research and project management strategies to their own project, and create, implement and evaluate realistic project structure plans
- Use, application and generation of knowledge: Students will be able to develop independent questions (if necessary within a pain research project) under supervision, critically evaluate the state of research, select suitable research approaches in a targeted manner and justify their choice. They are able to plan and implement an independent research project under supervision.
- Use, application and generation of knowledge: Students independently acquire the research methodological and methodological expertise required for the project and apply it in a project in a reflective and justified manner.
- Use, application and generation of knowledge: Students are able to build up a scientific argumentation, to reflect critically on research results and to classify them in the scientific and professional discourse of the therapy professions.
- Use, application and generation of knowledge: Students are familiar with the concept of internal and external monitoring for quality assurance in the implementation of research projects and can apply it under supervision to an independent research project.
- Cooperation and communication: Students are able to coordinate, lead and document work group meetings. They recognize potential for conflict in cooperation and deal with errors and difficulties in a reflective and solution-oriented manner.
- Communication and cooperation: They exchange information with each other in the sense of collegial consultation. Scientific self-conception / professionalism: The students develop a scientific self-conception and are able to change their role from therapist to scientist.
- Students collaborate with diverse health professions based on mutual respect and shared values.
- Students know that many areas of health care can only succeed effectively through interprofessional collaboration.
- Students will be able to communicate with other health care professionals using appropriate professional language.
- Students will be able to integrate the perspectives and expertise of the professional groups involved in the provision of care into interprofessional collaboration and see themselves as part of a whole.
- Students develop scientific investigations with other health professionals.
- Students will be able to explain the principles of interprofessional collaboration and apply them to specific examples.

Grading through:

- project work

Responsible for this module:

- Prof. Dr. Kerstin Lüdtke

Teacher:

- Institute for Social Medicine and Epidemiology
- Institute of Health Sciences

- Prof. Annette Baumgärtner, PhD
- Prof. Dr. Katharina Röse
- Prof. Dr. Kerstin Lüdtke
- Mag. rer. nat. Stella Lemke
- PhD Waclaw Adamzyk
- PD Dr. rer. hum. biol. Tibor Szikszay

Literature:

- James L. Harris, Linda A. Roussel, Tricia Thomas, Catherine Dearman: Project planning & management: A guide for nurses and interprofessional teams. - (2nd ed.). Burlington: Jones & Bartlett Learning, 2016
- Helga Meyer & Heinz-Josef Reher: Projektmanagement: Von der Definition über die Projektplanung zum erfolgreichen Abschluss. - Berlin: Springer, 2016
- Waldemar Bauer, Jörn Bleck-Neuhaus, Rainer Dombois, Ingo Wehrtmann: Forschungsprojekte entwickeln - von der Idee bis zur Publikation: Ein Leitfaden für die Praxis - Stuttgart: UTB, 2013

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination:
- Participation in at least 80 % of the dates of the Jour fixe
- active participation in the research practical

Module examination:
- GW4780-L1: Project Interprofessional care and research in pain, project work, 100 % of the module grade.

GW4790-KP11 - Advanced Course Interprofessional Care and Research in Pain (WIntSch)

Duration:	Turnus of offer:	Credit points:
2 Semester	each summer semester	11

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Interprofessional Care and Research in Pain, 2nd and 3rd semester

Classes and lectures:

- Advanced methods of knowledge synthesis and modeling (seminar, 2 SWS)
- Qualitative research and mixed methods (seminar, 1 SWS)
- Experimental pain models (seminar, 1 SWS)
- Imaging and electrophysiological procedures (seminar, 1 SWS)
- Advanced study designs (seminar, 1 SWS)

Workload:

- 240 Hours private studies and exercises
- 90 Hours in-classroom work

Contents of teaching:

- Systematic reviews and meta-analyses of complex interventions as well as non-interventional studies (observational studies, diagnostic accuracy studies)
- Modeling of components, moderators and endpoints (patient-relevant endpoints, combined and dependent endpoints, adverse effects and harms) as well as relevant implementation factors
- In-depth study of data analysis, theory development and presentation of results in qualitative research
- Triangulation in qualitative research
- Specific challenges and approaches to qualitative study designs (e.g., institutional gatekeeping, theoretical sampling)
- Main strategies of mixed-methods studies (sequential and parallel)
- Imaging and electrophysiological methods (e.g. FMRT, NIRS, EMG, EEG, tDCS, TMS etc.)
- Specific challenges and approaches to therapy science quantitative study designs (e.g., blinding of therapists, appropriate control intervention, measurement instruments, appropriate inclusion and exclusion criteria)
- Specific study designs (e.g., single case designs, participatory action research)
- Ethical aspects in research with vulnerable groups of people
- Thermal, chemical and mechanical stimulation in pain research
- Quantitative sensory testing including dynamic tests such as conditioned pain modulation and offset analgesia
- Placebo and nocebo response in pain research

Qualification-goals/Competencies:

- Knowledge and Understanding: Students deepen their knowledge of important aspects and different strategies of knowledge synthesis and research modeling.
- Use, application and generation of knowledge: Students will be able to appropriately apply various methods of knowledge synthesis as well as modeling research projects or studies.
- Knowledge and Understanding: Students will deepen their knowledge of different strategies for qualitative data analysis.
- Use, application and generation of knowledge: The students are able to apply different methods of qualitative data analysis appropriately, acquire competencies in the development of empirically based theories and are able to present results of qualitative analyses in a comprehensible way.
- Knowledge and Understanding: Students know the central main strategies for mixed methods studies and are able to comprehend and critically assess them using study examples.
- Knowledge and understanding: Students know the possibilities and limitations of various imaging and electrophysiological procedures.
- Knowledge and understanding: Students know different ways to experimentally generating pain for research purposes.
- Knowledge and understanding: Students understand which methods are suitable for which research questions and settings and can explain them.
- Knowledge and understanding: Students understand the biological mechanisms of thermal, chemical and mechanical nociceptive stimuli.
- Use, application and generation of knowledge: Students can interpret the pain response to different stimuli and intensities analyse different patterns of pain modulation.
- Use, application and generation of knowledge: Students will be able to evaluate appropriate strategies to scientifically investigate facilitating and inhibiting mechanisms.
- Use, application and generation of knowledge: Students will be able to assess the clinical applicability of test procedures such as 'Conditioned Pain Modulation'.
- Communication and cooperation: Students exchange information with each other in a factual and professional manner and reflect on the necessity of networking with important stakeholders (e.g. scientists, gatekeepers, patient representatives) in order to answer

research questions.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. Kerstin Lüdtke

Teacher:

- Institute of Systems Motor Science
- Institute for Social Medicine and Epidemiology
- Institute of Family Medicine
- Institute of Health Sciences

- Prof. Dr. Kerstin Lüdtke
- Prof. Annette Baumgärtner, PhD
- Prof. Dr. Katharina Röse
- Prof. Dr. med. Alexander Katalinic
- Dr. Hauke Basedau
- Prof. Dr. phil. Dipl.-Soz. Katja Götz
- Mag. rer. nat. Stella Lemke

Literature:

- Flick U. (Hg.): The SAGE Handbook of Qualitative Data Analysis. - London: SAGE, 2014
- Polgar S, Thomas SA: Introduction to Research in Health Sciences - Elsevier Health Sciences, 2000
- Przyborski A, Wohlrab-Sahr M: Qualitative Sozialforschung. Ein Arbeitsbuch. - 4. Aufl. München: Oldenburg Verlag, 2014.
- Richards D & Rahm Hallberg I. (Hg.): Complex interventions in health: an overview of research methods. - London & New York: Routledge, 2015
- Schäfer A, Schöttker-Königer T: Statistik und quantitative Methoden für Gesundheitsfachberufe. - Springer, 2015

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination(s):
- None

Module Exam(s):
- GW4790-L1: Advanced Course Interprofessional Care and Research in Pain, written exam, 90 min, 100% of the module grade

CS4530-KP05 - Methods and Processes in the Development of Technical Systems (EntDT)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), advanced digital health care, 2nd semester
- Master in Health and Healthcare Science 2025 (optional subject), advanced digital health care, 2nd semester

Classes and lectures:

- Methods and Processes in the Development of Technical Systems (lecture, 2 SWS)
- Methods and Processes in the Development of Technical Systems (exercise, 2 SWS)

Workload:

- 90 Hours private studies
- 60 Hours in-classroom work

Contents of teaching:

- Basics in the field of human-technology interface development
- Introduction to the human-centered development process according to DIN EN ISO 9241-210
- Methods and approaches within the framework of the analysis phase
- Methods and approaches within the conception and design phase
- Process approaches in the development of technical systems (Usability Engineering and Software Engineering)
- Methods and approaches within the evaluation phase

Qualification-goals/Competencies:

- Students know the human-centered development process
- They can apply this in interdisciplinary teams
- They understand the basic procedures and processes in the field of software development
- They can analyze the context of use and derive implementation-relevant requirements
- They can develop your own concepts for digital systems based on a requirements analysis
- They have the ability to criterion-oriented analysis and evaluation of digital, interactive systems

Grading through:

- Oral examination

Is requisite for:

- Human-Machine-Systems (CS5330-KP06)

Requires:

- Digital Healthcare (CS4400-KP05)

Responsible for this module:

- Prof. Dr.-Ing. Nicole Jochems

Teacher:

- Institute of Human-Centered Interactive Systems
- Prof. Dr.-Ing. Nicole Jochems

Literature:

- :

Language:

- German and English skills required

Notes:

Admission requirement for taking the module:
- none

Admission requirement for participation in module examination:
- successful completion of exercises

Module examination:
- CS4530-L1: Methods and Processes in the Development of Technical Systems, oral examination, 90 min, 100 % of the module grade.

CS4540-KP05 - Technologies in Healthcare (TechGV)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (optional subject), Digital Healthcare, 2nd semester
- Master in Health and Healthcare Science 2019 (optional subject), Digital Healthcare, 2nd semester

Classes and lectures:

- Technologies in Healthcare (lecture, 3 SWS)
- Technologies in Healthcare (seminar, 1 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Age-appropriate assistance systems (Ambient Assisted Living - AAL)
- Sensor technology - systems for recording vital values and activities
- Actuators - Intelligent implants, prostheses and orthoses
- Mixed realities (AR/ VR/ MR)
- IT-Trends: Mobile / Pervasive / Ubiquitous / Ambient Computing, Internet der Dinge, Cyber-Physical Systems
- Telemedicine / -care / -monitoring / -rehabilitation
- (Autonomous) Mobile Systems (Exoskeleton, Utility Vehicles, Robotics)
- Smart textiles / smart clothing
- Body-related technologies (wearables)
- Big Data & Artificial Intelligence
- Basics of media and communication technology

Qualification-goals/Competencies:

- Students will be able to explain the basic functions and principles of current technologies.
- They can assess components for use in healthcare.
- They can assess constraints and limitations in the use of technologies.
- They can name the specific advantages and disadvantages of technological.
- They can use appropriate technical components and procedures to design healthcare systems.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr.-Ing. Andreas Schrader

Teacher:

- Institute of Telematics
- Prof. Dr.-Ing. Andreas Schrader

Literature:

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Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- none

Admission requirements for participation in module examination(s):
- Successful participation in the seminar

Module Exam(s):
- CS4540-L1: Technologies in Healthcare, written exam, 90 min, 100% of the module grade.

GW4500-KP05 - Development and Evaluation of Complex Interventions 2 (EuEInII)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), Research in the health and care sciences, 2nd semester
- Master in Health and Healthcare Science 2025 (compulsory), Research in the health and care sciences, 2nd semester

Classes and lectures:

- Evaluation of Complex Interventions (seminar, 1 SWS)
- Implementation of Complex Interventions (seminar, 1 SWS)

Workload:

- 120 Hours private studies and exercises
- 30 Hours in-classroom work

Contents of teaching:

- In this course, based on the MRC framework for the development and evaluation of complex interventions, content is deepened and knowledge is expanded and applied.
- Selected examples will be studied in depth in order to take a closer look at the individual elements of the evaluation or implementation of complex interventions in the context of studies, to analyze them and to ground them theoretically.
- The content focuses on questions about the effectiveness of complex interventions and the preparation of a systematic review of a question. Challenges in quality assessment and reporting are also addressed.

Qualification-goals/Competencies:

- Knowledge and Understanding: Students will know and understand the requirements for evaluating complex interventions in the health professions and medicine.
- Knowledge enhancement: Students know models for different ways of evaluating complex interventions.
- Knowledge enhancement: Students know specific research methods that are used in this context and can reflect on them based on the knowledge they have already learned about simple interventions.
- Use, application and generation of knowledge, utilization and transfer: Students can classify already known interventions with regard to their degree of complexity and the resulting requirements for evaluation and implementation and assess the quality of the available scientific evidence or the appropriateness of the methods used.
- Scientific Innovation: Students will be able to develop research plans for evidence synthesis of studies of the effectiveness of complex interventions using appropriate methods.
- Utilization and Transfer: Students will be able to identify studies of effectiveness on complex interventions and summarize, analyze, and report them as part of a systematic review.
- Communication and cooperation: Students are able to argue the importance of the special focus of complex interventions and to confidently justify the resulting requirements for evaluation in the context of systematic reviews. They can adequately describe and justify the planned methodological procedure for these steps in writing and orally.
- Scientific self-conception and professionalism: Students are aware of the importance of complex interventions for the practice of health care professions and the special methodological requirements for their evaluation. They are able to apply appropriate methodological inventory in their own work in research, practice development or quality assurance (e.g. with regard to the identification of relevant contextual factors and evaluation strategies).

Grading through:

- written homework

Requires:

- Development and Evaluation of Complex Interventions 1 (GW4300-KP05)

Responsible for this module:

- Prof. Dr. phil. Anne Rahn

Teacher:

- Institute for Social Medicine and Epidemiology - Section for Research and Teaching in Nursing

Literature:

- Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M: Developing and evaluating complex interventions: new guidance. - London: Medical Research Council, 2006
- Moore G, Audrey S, Barker M, Bond L, Bonell C, Hardeman W et al.: Process evaluation of complex interventions: UK Medical Research

Council guidance. - London: Medical Research Council, 2016
- Richards D & Rahm Hallberg I. (Hg.): Complex interventions in health: an overview of research methods. - London & New York: Routledge, 2015

Language:

- German and English skills required

Notes:

Admission requirements for the module:
- none

Admission requirements for the examination:
- none

Module exam:
- GW4500-L1, Development and Evaluation of Complex Interventions 2, term paper, 100% of module grade.

GW4740-KP05 - Theories and Models of Person-Centered Care (ThMoPVe)

Duration:	Turnus of offer:	Credit points:
1 Semester	every summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Healthcare Development and Management, 2nd semester
- Master in Health and Healthcare Science 2019 (optional subject), Research in Therapeutic Sciences, 2nd semester
- Master in Health and Healthcare Science 2019 (optional subject), Health Services Research, 2nd semester
- Master in Health and Healthcare Science 2025 (optional subject), Health Services Research, 2nd semester
- Master in Health and Healthcare Science 2025 (optional subject), Healthcare Development and Management, 2nd semester
- Master in Health and Healthcare Science 2025 (optional subject), Interprofessional Care and Research in Pain, 2nd semester

Classes and lectures:

- Theories and Models of Person-Centered Care (various populations) (seminar, 1 SWS)
- Theories and Models of Person-Centered Care (various populations) (lecture, 1 SWS)
- Evidence-based Patient Information and Shared Decision-Making (seminar, 1 SWS)

Workload:

- 105 Hours private studies and exercises
- 45 Hours in-classroom exercises

Contents of teaching:

- Theories and development of Frameworks for Person-Centred Healthcare: concepts of the person , underpinning ethical principles, Relationship-centred Care, the Person-centred Practice Framework by McCormack et al.
- Core elements and models of Person-centered care in comparison: context, practice and benefits
- Core elements and models of Person-centered care in comparison:Transferability to the German healthcare System and to other countries
- Core elements and models of Person-centered care in comparison:economical, ethical and social implications
- Models and methods of evidence-based patient information and shared decision making.
- Transfer the theories and methods of evidence-based patient information and shared decision making to various health care audiences.
- Analysis and reflection of the potentials, challenges and care development needs related to evidence-based patient information and shared decision making.

Qualification-goals/Competencies:

- Knowledge and Understanding: Students will be able to define and interpret characteristics, limitations, terminologies, and doctrines of theories and models of person-centered care.
- Knowledge and Understanding: Students will be able to develop independent ideas for person-centered care in an application or research-oriented manner.
- Knowledge and understanding: Students weigh the professional epistemologically based correctness of person-centered approaches to care, incorporating scientific and methodological considerations.
- Knowledge and understanding: Students will be able to solve real-world and scientific problems using these trade-offs.
- Knowledge and understanding: Students will be able to describe the models and methods of evidence-based patient information and shared decision making and explain and critically reflect on them with regard to their theoretical and empirical foundations.
- Use, application, and generation of knowledge: Students independently acquire new knowledge about person-centered health care.
- Use, application, and generation of knowledge: Students are able to analyze empirical findings on the quality of care of vulnerable target groups in a theory-based manner with regard to the need for further development of care and to derive and justify central changes at the meso or system level.
- Use, application, and generation of knowledge: Students will be able to develop and justify ideas for the theoretical and methodological advancement of person-centered care and evidence-based patient information.
- Communication and Collaboration: Students are willing and able to actively engage target health care groups in the analysis and design of health care services.
- Communication and Collaboration: students will be able to apply the methods of evidence-based patient information and shared decision making at all levels of health care (micro, meso, and macro).
- Scientific self-concept/professionalism:Students are aware of organizational and system-immanent determinants of quality of care and know possibilities and methods of co-design.

Grading through:

- B-Certificate (not graded)

Responsible for this module:

- Prof. Dr. Katrin Balzer

Teacher:

- Institute for Social Medicine and Epidemiology - Section for Research and Teaching in Nursing
- Prof. Dr. phil. Anne Rahn

Literature:

- :

Language:

- German and English skills required

Notes:

Admission requirement for taking the module:
- none

Admission requirement for participation in module examination:
- Completion of assignments according to specifications at the beginning of the semester

Module exam:
- GW4740-L1, Theories and Models of Person-Centered Care, oral case analysis, 100% of module grade.

GW5100-KP05 - Developing Study Protocols (StuPro)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), Research in the health and care sciences, 2nd semester
- Master in Health and Healthcare Science 2025 (compulsory), Research in the health and care sciences, 2nd semester

Classes and lectures:

- Developing Study Protocols (seminar, 2 SWS)

Workload:

- 120 Hours private studies and exercises
- 30 Hours in-classroom work

Contents of teaching:

- Aims of study protocols
- Requirements for the content and structure of study protocols in health and health care sciences
- Study register and publication of study protocols
- Requirements for the reporting of study protocols (Reporting Guidelines)
- Ethical requirements for research in health and health care sciences/criteria for ethical review
- Strategies and methods for early and consistent involvement of stakeholders in study protocol development
- Develop, present, discuss, and revise study protocols related to own research questions
- Peer Review Methods
- Principles of good scientific practice
- Principles and procedures of scientific publishing and the application for third-party funding

Qualification-goals/Competencies:

- Knowledge and Understanding: Students will be able to name and justify the core content of a study protocol.
- Knowledge and Understanding: Students will be able to differentiate the content requirements of a study protocol depending on the type of study being pursued and other study characteristics.
- Knowledge and Understanding: Students will be able to critically evaluate the quality of a study protocol as well as the quality of a planned study using established criteria.
- Knowledge and Understanding: Students will be able to explain ethical requirements of research and relate them to the different steps of the research process.
- Knowledge and Understanding: Students will be able to describe and explain strategies for early involvement of stakeholders in study planning and implementation.
- Use, application, and generation of knowledge: Students will be able to formulate problem-driven answerable research questions and design appropriate study designs with all components (study type, setting, population, data collection instruments and methods, ethical considerations, involvement of stakeholders, etc.) to answer this research question. They can justify and critically reflect on their methodological decisions in the process.
- Use, application, and generation of knowledge: Students will be able to structure and describe their own study protocol according to available reporting criteria (Reporting Guidelines).
- Communication and cooperation: Students can appropriately appreciate critical comments on their own study protocol and weigh and classify them with regard to their relevance.
- Communication and Cooperation: Students will be able to present their own study protocol coherently and cohesively orally in a reasonable amount of time and defend it factually/technically.
- Communication and cooperation: Students can formulate and explain their own critical comments on the study protocols of others in a respectful and factually justified manner.
- Scholarly self-concept/professionalism: students will be able to explain the need for pre-publication of study protocols and will feel self-committed to appropriate publication practices.
- Scientific self-conception/professionalism: The students realistically assess their own research competencies and independently expand and deepen their basic methodological knowledge. In doing so, they recognize methodological scope for design and decision-making and, under guidance, independently decide on the implementation of decision-making/action alternatives after critically weighing up the advantages and disadvantages.

Grading through:

- Oral presentation and written report

Requires:

- Research Methods in Health Sciences (GW4100-KP08)

Responsible for this module:

- Prof. Dr. Katrin Balzer

Teacher:

- Department of Neurology
- Institute for Social Medicine and Epidemiology

- Prof. Dr. Katrin Balzer
- Prof. Annette Baumgärtner, PhD
- Prof. Dr. Kerstin Lüdtke

Literature:

- :

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- GW4100-KP08 Research Methods in Health Sciences

Admission requirements for participation in module examination:
- None

Module Exam(s):
- GW5100-L1: Developing Study Protocols, lecture and written paper, 100% of module grade.

MA4550-KP05 - Statistical Methods (StaMet)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), Research in the health and care sciences, 2nd semester
- Master in Health and Healthcare Science 2025 (compulsory), Research in the health and care sciences, 2nd semester

Classes and lectures:

- Statistical Methods (lecture, 2 SWS)
- Statistical Methods (exercise, 2 SWS)

Workload:

- 90 Hours private studies and exercises
- 60 Hours in-classroom work

Contents of teaching:

- Basics of descriptive and inferential statistics
- Bivariate analyses (for difference and correlation hypotheses)
- Regression analyses (linear and logistic regression)
- Survival time analyses (Kaplan-Meier and Cox regression)
- Dealing with missing values
- Data analysis by means of an established statistics program

Qualification-goals/Competencies:

- Knowledge and Understanding: Students know the difference between descriptive and inferential statistics.
- Knowledge and Understanding: Be able to name the major areas of univariate data descriptors (scale level, location measures, scatter measures, modality, skewness) and assign the various measures to scale levels according to their applicability.
- Knowledge and Understanding: Know the two main areas of inferential statistics (estimation and testing) and be able to name associated methods (point estimation and confidence interval or significance testing).
- Knowledge and Understanding: Know commonalities and similarities among measures of association, risk, and correlation.
- Knowledge and Understanding: Know the basic idea of regression as well as commonalities and similarities of linear and logistic regression.
- Knowledge and Understanding: Know the basic idea of survival time analysis.
- Knowledge and Understanding: Know about the problem of missing values.
- Use, application, and generation of knowledge: Students will be able to perform univariate and bivariate descriptive analysis of a given data set.
- Use, application, and generation of knowledge: to be able to pose research questions and hypotheses, operationalize them in such a way that they can be evaluated statistically, and choose an appropriate statistical method (as far as part of the course content).
- Use, application and generation of knowledge: to be able to check whether the assumptions of a chosen method of analysis are sufficiently fulfilled and can propose alternative methods of analysis.
- Use, application, and generation of knowledge: to be able to correctly report and interpret statistical results as well as critically examine analyses performed by others for potential problems in methodology, presentation of results, or interpretation.
- Communication and Cooperation: Students will be able to select and meaningfully communicate a scientific question and the results of a statistical analysis appropriate to answer the question.
- Communication and cooperation: to be able to point out possible weaknesses and possible misinterpretations of statistical results that might escape a non-scientifically literate addressee.
- Scientific self-concept/professionalism: students will be able to explain why it is appropriate to consider statistical aspects in all stages of quantitative health science research.
- Scientific self-concept/professionalism: to be committed to a careful statistical approach.
- Scientific self-concept/professionalism: students realistically assess their own statistical methodological competencies and independently expand and deepen their basic methodological knowledge.

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. med. Alexander Katalinic

Teacher:

- Institute for Social Medicine and Epidemiology

- Prof. Dr. med. Alexander Katalinic
- Laura Schumann, M.Sc.

Literature:

- Schäfer A, Schöttker-Königer T (2015): Statistik und quantitative Methoden für Gesundheitsfachberufe - Heidelberg/Berlin: Springer
- Weiß C (2013): Basiswissen Medizinische Statistik - 6. Auflage. Heidelberg/Berlin: Springer

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- None

Admission requirements for participation in module examination(s):
- None

Module Exam(s):
- MA4550-L1: Statistical Methods, written exam, 90min, 100% of the module grade

CS5330-KP06 - Human-Machine-Systems (MMS)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	6

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (optional subject), Digital Healthcare, 3rd semester
- Master in Health and Healthcare Science 2025 (optional subject), Digital Healthcare, 3rd semester

Classes and lectures:

- Interaction Technologies (lecture, 2 SWS)
- Human-Machine Interaction in Healthcare (lecture, 2 SWS)
- Potentials and Limits of Digital Technologies (seminar, 1 SWS)

Workload:

- 105 Hours private studies and exercises
- 75 Hours in-classroom work

Contents of teaching:

- Human information processing and action processes
- Models for Human-Machine Systems and Interactive Media
- User modeling and special user groups
- Age-appropriate design of human-machine systems
- Evaluation of human-machine systems in healthcare
- Methods and approaches for measuring acceptance and user experience
- Human-robot interaction and human-robot cooperation
- Social Robotics and Emotional Interaction
- Innovative concepts and systems
- Fundamentals of interaction technologies
- Graphical interaction systems (GUI)
- Touch interfaces
- Gesture and speech recognition, sensors for whole-body interaction
- Interaction technologies based on eye control and facial expressions, emotion recognition
- Organic User Interfaces (OUI)
- Brain-Computer-Interfaces
- Ambience interaction systems

Qualification-goals/Competencies:

- Students are able to apply systematic and theoretically sound methods for designing user interfaces of interactive systems.
- In addition to the psychological and informatics basics, they are also familiar with findings and methods from graphic and communication design.
- They can categorize existing systems and develop concepts to improve them.
- They know the technical basics of current interaction technology and can assess possibilities and limits.
- They have a good overview of the current state of development of technical interaction systems.

Grading through:

- portfolio exam

Requires:

- Technologies in Healthcare (CS4540-KP05)
- Methods and Processes in the Development of Technical Systems (CS4530-KP05)

Responsible for this module:

- Prof. Dr.-Ing. Andreas Schrader
- Prof. Dr.-Ing. Nicole Jochems

Teacher:

- Institute of Human-Centered Interactive Systems
- Institute of Telematics

- Prof. Dr.-Ing. Andreas Schrader
- Prof. Dr.-Ing. Nicole Jochems

Literature:

- Preim B, Dachselt R (2010): Interaktive Systeme Band 1 - Berlin/Heidelberg: Springer
- Preim B, Dachselt R (2015): Interaktive Systeme Band 2 - Berlin/Heidelberg: Springer

Language:

- German and English skills required

Notes:

Details of the varying literature sources can be found in the teaching materials.

Admission requirements for taking the module:
- CS4540 Technologies in Healthcare Delivery
- CS4530 Methods and Processes in the Development of Technical Systems

Admission requirements for taking module examination(s):
- None

Module Exam(s):
- CS5330-L1: Human-Machine Systems, portfolio examination consisting of: 30 points in the form of a seminar paper with presentation and 70 points in the form of a 90-minute written examination , 100% of module grade

GW4600-KP05 - Patient Safety (PaSi)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2025 (compulsory), Theories and methods of health care, 3rd semester
- Master in Health and Healthcare Science 2019 (compulsory), Theories and methods of health care, 3rd semester

Classes and lectures:

- Monitoring and Indicators of Patient Safety (lecture, 1 SWS)
- Science Communication (seminar, 2 SWS)

Workload:

- 120 Hours private studies and exercises
- 30 Hours in-classroom work

Contents of teaching:

- Basic Concepts of Patient Safety
- Indicators of patient safety
- Causes of critical events and patient harm
- Systems thinking in organizations
- Patient/client involvement in safety-related issues
- Safety culture in healthcare
- Communication and communication as factors of patient safety
- Learning from critical events- systematic recording and evaluation

Qualification-goals/Competencies:

- Knowledge and understanding: graduates understand the links between organisational and safety culture and critical incidents
- Knowledge and understanding: graduates are familiar with the latest findings and measures aimed at improving patient safety
- Application, use and generation of knowledge: graduates are able to apply theoretical approaches to practical issues relating to patient safety
- Application, use and generation of knowledge: graduates are able to identify and analyse aspects relevant to patient safety in practice
- Communication and cooperation: graduates communicate their scientific findings on patient safety issues within a multidisciplinary context
- Communication and cooperation: graduates recognise potential safety-related conflicts when working with others and reflect on these in the context of conditions applicable across different situations
- Academic self-awareness/professionalism: graduates reflect on their own abilities and make use of their freedom to shape their work and make decisions within a scientifically grounded framework
- Academic self-understanding/professionalism: graduates justify their own professional practice using theoretical and methodological knowledge and reflect on it in the light of current evidence

Grading through:

- written exam

Responsible for this module:

- Prof. Dr. rer. medic. Katja Stahl

Teacher:

- Institute of Health Sciences
- Prof. Dr. rer. medic. Katja Stahl

Literature:

- Institute of Medicine: To err is human. Building a Safer Health System. National Academy Press Aktionsbündnis Patientensicherheit (APS) Weißbuch Patientensicherheit. - Medizinisch Wissenschaftliche Verlagsgesellschaft (2000)
- GVG (Hrsg) (2022): Nationales Gesundheitsziel Patientensicherheit.
- Mühlbradt T et al.: Safety-II : Neue Wege zur Patientensicherheit. - Springer Gabler (2024)

Language:

- German and English skills required

Notes:

Admission requirement for taking the module:
- none

Admission requirement for participation in module examination:
- none

Module exam:
- GW4600-L1: Patient Safety, exam, 100% of the unit grade.

The language of instruction is German. Examinations may be taken in German or English, depending on the students preference.

(Share of Institute of Health Sciences in V is 100%)
(Share of Institute of Health Sciences in S is 100%)

GW5200-KP05 - Health Policy and Health Economics (GPuGOE)

Duration:	Turnus of offer:	Credit points:
1 Semester	each winter semester	5

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), Theories and methods of health care, 3rd semester
- Master in Health and Healthcare Science 2025 (compulsory), Theories and methods of health care, 3rd semester

Classes and lectures:

- Health Systems and Health Economics (lecture, 1 SWS)
- Evidence-based Healthcare (seminar, 1 SWS)
- Health Systems and Health Economics (exercise, 1 SWS)

Workload:

- 105 Hours private studies and exercises
- 45 Hours in-classroom work

Contents of teaching:

- Health Economics- basic economic terms- aims, methods and basic questions of health economics- cost-benefit calculations- Quality-adjusted life years (QALYs)- Control mechanisms in health care (e.g. co-payments, bonus booklet, disease management programs),- Quality assurance in health care, including measurement of service quality (definition of quality, goals, legal framework, quality control, problems)- Financing and reimbursement schemes in health care in general and in hospitals (incl. statutory and private health insurance)- Institutions of the health care system
- Healthcare systems- Structures and forms of care in the health care system- Organization of health care systems- The health care system as part of the social security system in Germany- Health care systems in international comparison
- Health policy- Aims of health policy- Actors, interest groups and lobbying- The health policy action cycleCurrent case studies in health policy (e.g. digitalization, rural doctor quota, organ donor card, health premium, model projects, tele-medicine...)
- Evidence-based health care- Terms and methods in the context of

Qualification-goals/Competencies:

- The goal of the course is to develop an understanding of the fundamentals of health economics, the various structures of health care systems, and health policy processes. The knowledge learned will then be combined and applied to current case studies to solidify what has been learned and gain deeper insight into the decision-making processes and interrelationships in health care.
- Knowledge and Understanding Knowledge Enhancement: Students will be able to define the term
- Knowledge and understanding Knowledge enhancement: students will be able to define the term
- Knowledge and understanding Knowledge enhancement: students will be able to explain the evidence bases and specific methods for the different HTA dimensions, especially for health economic evaluation, and apply them appropriately to evaluation examples.
- Use, application and generation of knowledge/utilization and transfer: students will be able to read HTA reports, including health economic evaluation, with understanding and reflect critically on the validity of conclusions related to safety, benefits, health economic consequences and ethical, legal and social implications.
- Communication and cooperation: students will be able to present the results of a critical HTA assessment orally and in writing in a factual and professional manner and, on this basis, represent their own position in a simulated decision on the refinancing of the assessed procedure.
- Scientific self-image and professionalism: They reflect on the dependence of the results of an HTA, especially the health economic and ethical evaluation, on underlying perspectives and value judgments. They are sensitized to the necessity of systematically involving the addressees (users) of a health care procedure in the HTA process and the decisions based on it.

Grading through:

- presentation
- written exam

Responsible for this module:

- Prof. Dr. phil. Dipl.-Soz. Katja Götz

Teacher:

- Institute of Family Medicine
- Institute for Social Medicine and Epidemiology

- Prof. Dr. phil. Dipl.-Soz. Katja Götz
- Prof. Dr. Katrin Balzer
- Dr. Christoph Strumann

Literature:

- Fleßa S & Greiner W (2020): Grundlagen der Gesundheitsökonomie. Eine Einführung in das wirtschaftliche Denken im Gesundheitswesen - 4., überarb. u. akt. Aufl. Heidelberg: Springer Gabler
- Perleth M, Zentner A, Busse R et al. (2014): Health Technology Assessment. Konzepte, Methoden, Praxis für Wissenschaft und Entscheidungsfindung. - 2. Aufl. Berlin: MWV Medizinisch Wissenschaft

Language:

- German and English skills required

Notes:

Admission requirements for taking the module:
- none

Admission requirements for participation in module examination:
- none

Module examination:
- GW5200-L1: Health Policy and Health Economics, lecture and term paper, lecture 30% of module grade, term paper 70% of module grade.

GW5990-KP30 - Master Thesis in Health and Healthcare Science (GWMArbeit)

Duration:	Turnus of offer:	Credit points:
1 Semester	each summer semester	30

Course of study, specific field and term:

- Master in Health and Healthcare Science 2019 (compulsory), health sciences, 4th semester
- Master in Health and Healthcare Science 2025 (compulsory), health sciences, 4th semester

Classes and lectures:

- Colloquium (presentation (incl. preparation), 1 SWS)
- Writing the Master Thesis (supervised self studies, 1 SWS)

Workload:

- 870 Hours private studies
- 30 Hours oral presentation (including preparation)

Contents of teaching:

- By arrangement

Qualification-goals/Competencies:

- Knowledge and understanding: Students can independently assess the suitability of specific research and development methods for their own issues and draw appropriate conclusions.
- Knowledge and understanding: Students will be able to appropriately describe, analyze, and synthesize collected information about the object of inquiry in terms of new knowledge.
- Knowledge and understanding: Students are able to independently deepen and expand methodological and technical knowledge in an application-related manner and transfer it to new, unknown or incompletely developed subject matter.
- Use, application, and generation of knowledge: To the greatest extent possible, students can independently formulate workable questions for a research paper based on a known/observed problem and develop an appropriate plan of study.
- Use, application, and generation of knowledge: Students will be able to implement the developed curriculum independently to the greatest extent possible in all stages of the research process.
- Use, application, and generation of knowledge: To the greatest extent possible, students will be able to independently identify and appropriately assess difficulties encountered in the research process and draw appropriate consequences for continuing the research.
- Communication and cooperation: Students are able to describe and justify the necessity, methods and results of their research work in a plausible and target group-oriented manner. In doing so, they take into account established standards for scientific reporting.
- Communication and Cooperation: Students are able to collaborate and cooperate with all persons necessary for the successful conduct of research and communicate with them in an appropriate manner characterized by respect.
- Scientific self-image/professionalism: Students are able to recognize and consider the ethical, legal and, if applicable, socio-cultural dimensions or implications of their work and reflect on them in discourse with the professional or general public.
- Scientific self-concept/professionalism: Students have an advanced awareness of their various roles and responsibilities in their chosen field of scientific work and are willing and able to implement these responsibilities in decision-making and action in the scientific work process and in the dissemination of their own results.

Grading through:

- written exam, oral presentation, and defence of the experiment´s results

Responsible for this module:

- Studiengangsleitung

Teacher:

- All institutes of the University of Lübeck
- Alle prüfungsberechtigten Dozentinnen/Dozenten des Studienganges

Language:

- thesis can be written in German or English