HOCHSCHULE ANSBACH

Modulhandbuch

Promotionsbegleitzertifikat (PBZ)

School of Business and Technology

Wintersemester 2025/26

Stand:01.08.2025

Inhalt

Inhaltsverzeichnis

1 Introduction to the course of studies

Promotionsbegleitzertifikat			
Short form:	PBZ	**SPO-Nr.:**	SWS/HSAN-20232
Course management:	Eva Didion		
Student advisory service:			
ECTS:	30		
Standard period of study:	4 semesters		
Admission requirements:	• University degree (Diplom, Master's or an equivalent domestic or foreign degree) • Confirmation of supervision by a professor at Ansbach University of Applied Sciences (confirmed by supervision agreement)		
Usability:	Promotionsbegleitzertifikat		

Intended learning outcomes:

The aim of the certificate course is to acquire and further develop skills, methods and knowledge for working in academic fields and writing a dissertation. The certificate course is intended to enable doctoral candidates to work on their dissertation independently and in accordance with the rules of good scientific practice and to actively participate in the scientific discourse in their field of research.
The general qualification objectives are listed below in compact form. Please refer to the respective module descriptions for details:

Acquisition of expert knowledge:
- Deepening and expanding expert knowledge in the relevant research area.
- Application of theoretical concepts and methods to your own dissertation.

Methodological competence:
- Development of research methods and techniques for the dissertation.
- Critical reflection and selection of methodological approaches according to the research questions.

Independent dissertation:
- Facilitate independent work on the dissertation.
- Implementation of the principles of good scientific practice in the research work.

Participation in scientific discourse:
- Active participation in scientific exchange in the research field.
- Presentation of own research results at conferences and in specialist journals.

Promotion of soft skills:
- Development of key skills such as communication, teamwork and time management.
- Enhance the ability to critically examine scientific texts and results.

Content:

The standard period of study for this certificate course is 4 semesters.

The course is divided into the following module groups:

- The compulsory modules (10 ECTS) The compulsory modules of this certificate course are designed to provide doctoral students with a solid foundation of knowledge, skills and ethical principles for their research work. The modules cover various aspects of scientific practice and research ethics to ensure that doctoral students can lay the foundations for responsible and high-quality research work.

- Compulsory elective modules (20 ECTS) The compulsory elective modules allow doctoral students to set their own focus and expand specific competencies. These modules offer a wide range of topics, including teaching, language skills, data analysis and specialized research methods.

Graduation / Academic degree:

Certificate

2 Mandatory Modules

2.1 Good Scientific Practice and Compliance

<table>
<tr><th colspan="4">Good Scientific Practice and Compliance</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td colspan="2">Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (SPO WS 23/24)</td><td colspan="2">winter</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Christine Dauth</td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>3 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>22 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Selbstlernmodul und Fallstudienseminar</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students acquire knowledge of the principles and standards of responsible scientific research. This includes knowledge of the ethical principles of science (honesty, transparency, reproducibility, identifiability, etc.), knowledge of the different types of scientific misconduct and understanding of their consequences when detected. They are also made aware of misconduct related to abuse of power, discrimination, and sexual harassment. This knowledge of their responsibilities, rights, and obligations as early-stage researchers should enable them to successfully complete a high-quality dissertation.

Professional Skills:
Students become aware of the challenges and dilemmas of scientific work (conflicts of interests, pressure to publish, etc.). At the same time, they improve their problem-solving skills. Specifically, this means recognizing and solving ethical problems through constructive conflict resolution, whistleblowing in cases of suspected misconduct, and seeking support from the appropriate university bodies.

Social Skills:
Students are able to take responsibility for their own scientific integrity and that of the scientific community. Specifically, this means following the rules of good scientific practice and being prepared to cooperate in the investigation of misconduct.</td></tr>
<tr><td colspan="4">Content:</td></tr>
</table>

Students will learn about the specific Statutes on Good Scientific Practice at Ansbach University of Applied Sciences and the DFG Guidelines for Safeguarding Good Research Practice. This includes a full understanding of the guidelines on the general principles, the guidelines on the research process, and the guidelines on procedures in case of non-compliance with good research practice. In both the self-study module and in the classroom, we will explore the following points and discuss case studies to deepen understanding:

- Standards, values, and principles of good scientific practice
- Scientific misconduct and its consequences
- Plagiarism
- Publication Process (Open access strategies, predatory journals)
- Criteria for authorship
- Introduction to research data management
- Abuse of power and sexual harassment

Examination:

Presentation, 10 minutes (outside the examination period) The prerequisite for the awarding of credit points is the passing of the respective module examination in accordance with the SPO or Study plan

Literature:

Deutsche Forschungsgemeinschaft e. V. (2022). *Guidelines for Safeguarding Good Research Practice. Code of Conduct*, revised version 1.1. https://zenodo.org/doi/10.5281/zenodo.3923601

2.2 Managing research data and open science

<table>
<tr><th colspan="4">Modulname: Managing Research Data and Open Science</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitz ertifikat (PBZ)</td><td>Pflichtfach</td><td>winter</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Sigurd Schacht</td></tr>
<tr><td>Language:</td><td colspan="3">Englisch</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>8 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>17 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">seminaristischer Unterricht/Übung</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students are familiar with best practice in Open Science and Research Data Management. Know the latest tools and methods.
Action Competence:
Students are able to plan, organize, and publish their research activity using the Method of Open Science and Research Data Management.
Social Skills:
Communication skills: Students participate in group discussions and presentations on open science and research data management</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">The module consists of seminar-style teaching and is divided into two parts, Open Science and Research Data Management:
Open Science:
I. Introduction to Open Science
● Elements of Open Science (Open Data, Open Material, Open Source, Open Peer Review, and Open Educational Resources).
II. Replication Crisis, Publication-Bias, and P-Hacking
III. The Open Research Process</td></tr>
</table>

IV. Tools & Frameworks for Open Research

- Tools that support the process
- Methods that support the process (Registered Reports, Power Analysis, Sample Design, Open Data, Open Access (self-study via Smart VHB))

Research Data Management

I. Introduction to Research Data Management

- Overview of data management in research
- Importance of data management in ensuring research quality, reproducibility and transparency

II. Planning and Organizing Research Data

- Developing data management plans
- Metadata and documentation standards

III. Data Collection and Recording

- Ethical considerations in data collection → Hinweis auf Datenschutz (DSGVO)
- Use of digital tools and software for data management
- Quality control and data validation techniques

IV. Data Sharing, Collaboration, and Archiving

- Collaborative data management in multi-party research projects
- Working with sensitive and confidential data
- Long-term preservation of research data
- Metadata and documentation for data preservation

VI. Conclusion

- Best practices for ongoing data management throughout the research lifecycle

Examination:

Presentation

Literature:

Open Science:

Brachem, J., Frank, M., Kvetnaya, T., Schramm, L. F., & Volz, L. (2022). Replikationskrise, p-hacking und Open Science. *Psychologische Rundschau*.

Foster, E. D., & Deardorff, A. (2017). Open science framework (OSF). *Journal of the Medical Library Association: JMLA*, *105*(2), 203.

Research Data Management:

Borghi, J., & Van Gulick, A. (2022). Promoting Open Science Through Research Data Management. *Harvard Data Science Review*, *4*(3). https://doi.org/10.1162/99608f92.9497f68e

Berkeley Library: Reproducible Research Practices: Research Data Management. https://guides.lib.berkeley.edu/c.php?g=652220&p=7447488

Gandrud, C. (2018). *Reproducible research with R and R studio*. Chapman and Hall/CRC.

Gundersen, O. E., & Kjensmo, S. (2018, April). State of the art: Reproducibility in artificial intelligence. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 32, No. 1).

Cacho, J. R. F., & Taghva, K. (2020). The state of reproducible research in computer science. In *17th International Conference on Information Technology–New Generations (ITNG 2020)* (pp. 519-524). Springer International Publishing.

Klar, J. et. al: Forschungsdaten.org. https://forschungsdaten.org

2.3 Research ethics

<table>
<tr><th colspan="4">Modulname: Research Ethics</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Pflichtfach</td><td>summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Sibylle Gaisser, Prof. Dr. Lukas Prasol</td></tr>
<tr><td>Language:</td><td colspan="3">Deutsch (bei Bedarf Englisch)</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>5 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>20 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">seminaristischer Unterricht/Übung</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students have knowledge of fundamental concepts of applied and philosophical ethics and their application to current issues in the fields of engineering, natural sciences, economics and social sciences.

Action Competence:
Students can evaluate research according to ethical guidelines and submit an application to an ethics committee.

Social Skills:
Communication skills, ability to reflect</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">The module Research Ethics explains the basics of ethical principles and ethical evaluation and teaches students how to independently prepare an ethics proposal.
The module consists of seminar-based teaching, online teaching and a seminar.</td></tr>
</table>

In the module, the basics of independent ethical reflection are developed based on the participants' previous experience and doctoral projects and, building on this, an ethical analysis is carried out for a topic chosen by the participants themselves.

The following content is taught in detail.

- Fundamentals of applied and philosophical ethics
- Methods of ethical evaluation
- The application to an ethics committee - process and content
- Ethical dilemmas in research

Examination:

Presentation

Literature:

Deutsche Forschungsgemeinschaft. (2022). Guidelines for Safeguarding Good Research Practice. Code of Conduct. https://doi.org/10.5281/zenodo.6472827

Dagmar Fenner (2022): Einführung in die angewandte Ethik, 2. vollständig überarbeitete und erweiterte Auflage; utb. ISBN 978-3-8252-5902-0

2.4 Literature research and management

<table>
<tr><th colspan="4">Modulname: Literature Research and Management</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Pflichtfach</td><td>winter</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Sebastian Sauer</td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>7 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>18 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Seminaristischer Unterricht</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students know the relevant databases and search engines for identifying scientific literature. They know how citation styles (e.g. APA 7) are structured and which types they can be divided into. They are aware of the scientific quality and limitations of certain literature works and research services.

Action Competence:
Students are able to use common software packages (e.g. Zotero) to store, manage and exchange literature sources and references. They can use relevant software to cite in their own scientific texts.

Social Skills:
Students have the ability to set their literature management goals according to the demands and nature of their academic work.</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">Students acquire basic competence in scientific literature management:
1. Assess: Distinguish and assess types of scientific literature and research services in terms of their characteristics
2. Find: Use common search tools to find appropriate sources as well as evaluating the quality of results</td></tr>
</table>

3. *Save:* Use software packages to build and manage your own collection of sources (e.g. by subject area)
4. *Cite*: Cite sources using appropriate software packages using the citation style displayed
5. *Share*: Exchange literature references and texts as well as collaborative writing on texts where appropriate

Examination:

Presentation

Literature:

American Psychological Association. (2019). *Publication manual of the American Psychological Association, 7th edition*. American Psychological Association (APA).

Peters, J. H., & Dörfler, T. (2019). *Schreiben und Gestalten von Abschlussarbeiten in der Psychologie und den Sozialwissenschaften*. https://www.pearson-studium.de/drm/reader/nu/code/uesgvaaidpsy

2.5 Literature review

Modulname: Literature Review			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Pflichtfach	summer
Responsible for module:	Prof. Dr. Ritam Garg		
Language:	Englisch		
Credit points / SWS:	1 ECTS / 1 SWS		
Workload:	Contact hours:		8 h
	Self-study:		17 h
	Total:		25 h
Lecture type:	Seminaristischer Unterricht		

Objectives:

Knowledge:

Students know the objectives, procedure, variants and prerequisites of the literature review as a scientific research objective and type of study.

Action Competence:

Students are able to carry out the essential steps of a literature review in a basic form. They have the competence to use the central methods and tools for the implementation, for example in the form of research databases.

Social skills:

Students have the ability to set their literature review objectives according to the demands and nature of their academic work. They can weigh up the effort and benefits; they are aware of the limitations.

Content:

Students acquire basic skills in crafting scientific literature reviews:

1. *Variants:* Depending on the objective, different types of literature review can be distinguished (e.g. systematic review vs. meta-analysis), which differ in process, benefits and limitations.

2. *Databases*: The core of a literature review is the identification of literature; the central search location is special scientific databases, knowledge of which is therefore essential.
3. *Procedure*: The essential steps in their correct sequence define the work steps.
4. *Methods and tools:* Special software packages support a literature review, such as spreadsheets, databases, literature management and science mapping tools
5. *Quality criteria:* The quality of a literature review can be measured by (e.g.) a) completeness, b) actuality, c) unbiasedness, d) transparency and e) plausibility of the research strategy.

Examination:

Presentation

Literature:

Booth, A., Sutton, A., Clowes, M., & James, M. M. S. (2021). *Systematic approaches to a successful literature review*. SAGE Publications. https://books.google.de/books?id=SiExEAAAQBAJ

Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., Mukherjee, D., Corvello, V., Piñeiro-Chousa, J., Liguori, E., Palacios-Marqués, D., Schiavone, F., Ferraris, A., Fernandes, C., & Ferreira, J. J. (2022). Literaturee reviews as independent studies: Guidelines for academic practice. *Review of Managerial Science*. https://doi.org/10.1007/s11846-022-00588-8

2.6 Writing scientific publications

<table>
<tr><th colspan="4">Modulname: Writing Scientific Publications</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Pflichtfach</td><td>summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Carolin Durst, Prof. Dr. Marion Händel, Prof. Dr. Michael Walter</td></tr>
<tr><td>Language:</td><td colspan="3">Englisch</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">3 ECTS / 3 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>25 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>50 h</td></tr>
<tr><td colspan="2">Total:</td><td>75 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Seminaristischer Unterricht, Übung</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Know: Student specification, analysis and evaluation of scientific publications according to the standards of good scientific practice. They have knowledge of the systematic and methodical approach to scientific writing and publishing, are aware of scientific research ethics and established reviewing processes.
Understand: Students will understand fundamental processes and interrelationships in the preparation of a scientific publication and the corresponding steps and actions during the publication process.
Apply: Within the scope of exercises, students are able to apply learned contents in a structured and targeted manner.
Analyze: Students are able to initiate, analyze, structure and continue the writing and publication of their research.
Evaluate: Students will be able to assess and evaluate the suitability of the approaches and recommendations for future, yet undefined publications. In addition, they will be able to critically scrutinize existing publications, identify occurring design errors and inconsistencies with regard to the train of thoughts and the traceability of data, statements and proofs as well as to correct identified inadequacy. Finally, they can define important decision criteria for assessing the effectiveness of possible measures with regard to ensuring a proper contribution to the current state of the art and the presentation of the research. Furthermore, they understand the scope of journals and can evaluate the fit of their work to the journal’s scope and the editor’s criteria on paper acceptance.
Design: The students are able to successfully plan, formulate, prepare, submit, revise, and finally publish a scientific paper in accordance with established standards and behaviors in today’s scientific research community.</td></tr>
</table>

Action Competence:

The students are enabled to independently carry out all relevant steps of preparing, submitting and finally publishing a scientific paper in accordance with learned procedures and existing guidelines using a wide range of learned methods and tools. In addition, students will be able to independently schedule their work and meet milestones. The ability to objectively assess as well as to reflect on one's own strengths and weaknesses both from a technical point of view (including the implementation of learned methods) as well as from a social point of view (including the development of solutions and compromises in an interdisciplinary team) is acquired.

- Students can select an appropriate academic outlet to publish their research results
- Students can approach scientific writing projects in a structured way
- Students are able to structure a manuscript meeting the established standards in academic publishing
- Students have the competencies to write a cover letter, revision letter and to manage the review process
- Students can take advantage of the reviewer's recommendations to improve the manuscript
- Students are able to present their scientific article

Social Skills:

The students can independently organize the processing of discussions and workshop sessions in small groups and jointly develop solutions for the set challenges arising during scientific writing and publishing. In the joint discussions, the lecturer and fellow students give appreciative feedback and share gained experiences and recommendations of individual writing and publishing projects. Furthermore, the students provide feedback in peer-reviews for their colleagues.

Content:

The complete process of scientific writing and publishing (from the conceptual design of a manuscript to the final publication) is explained, analyzed and evaluated, and detailed insights into the process of publishing from an interdisciplinary perspective are provided. Furthermore, relevant competences are acquired for the independent handling, coordination. Monitoring of all activities and responsibilities (with regard to methods, tools, laws, etc.) are taught.

The module consists of seminar-based teaching, exercises and self-learning lectures with a total volume of 2 SWS.

- Overview of publication outlets
- Journal or conference? Strategies to find suitable publication outlets
- Authorship responsibility and guidelines
- How to write a scientific article
- Do's and don'ts in scientific writing
- Review management process - reviewer's perspective vs. submitter's perspective
- Structure and style of a cover letter for the revision of an article

Examination:

Presentation

Literature:

https://www.elsevier.com/connect/writing-a-science-paper-some-dos-and-donts
https://vhbonline.org/vhb4you/vhb-jourqual/vhb-jourqual-3
https://harzing.com/resources/journal-quality-list
https://www.elsevier.com/connect/whats-the-best-journal-for-my-paper-new-tool-can-help
https://researcheracademy.elsevier.com/writing-research/fundamentals-manuscript-preparation
Hall, G. M. (2012) "How to Write a Paper", Wiley-Blackwell _ BMJ Books
Gastel, B. and Day, R. A. (2022) "How to Write and Publish a Scientific Paper" Greenwood

2.7 Research methods

<table>
<tr><th colspan="4">Modulname: Research Methods</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Pflichtfach</td><td>winter</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Marion Händel, Prof. Dr. Katharina Klug, Prof. Dr. Michael Walter</td></tr>
<tr><td>Language:</td><td colspan="3">Englisch</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>5 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>20 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">z.B. seminaristischer Unterricht/Übung</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students understand the relevance and applications of research methods in various fields of research. They are able to distinguish deductive and inductive research approaches. They are familiar with different types of research traditions and designs (e.g., qualitative, quantitative, mixed methods, experimental and numerical analysis) and their respective strengths and weaknesses. Students have knowledge of several data collection methods and basic procedures on modeling and analyzing physical phenomena.
Action Competence:
Students are able to critically evaluate research studies. They have the ability to design and execute a research project. They can select appropriate measures for data collection and evaluation. When conducting research, students are able to manage time and resources effectively.
Social Skills:
Students are able to work independently and as part of a research team, and they have the ability to understand and respect diverse perspectives in research. They have acquired competencies to communicate effectively with a wide range of individuals, including research participants and academic peers.</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">The process of conducting research in different disciplines is explained, discussed, and critically reflected. The course consists the following topics:
● Research traditions (e.g., qualitative, quantitative, mixed methods, design of experiments (DOE))</td></tr>
</table>

- Research designs (e.g., experiment, survey, field study, numerical computer simulations)
- Quantitative and qualitative research methods of data collection (e.g., interview, eye tracking, physiological measures, big data)
- Collaboration and communication in a cross-disciplinary research environment

Examination:

Presentation

Literature:

Beller, S. (2016). Empirisch forschen lernen. Konzepte, Methoden, Fallbeispiele, Tipps. Huber.

Beins, B. C. (2018). *Research methods: A tool for life*. Cambridge University Press.

Cresswell, J. W. & Cresswell. J. D. (2017). *Research design* (5th ed.). Sage.

Händel, M., Wimmer, B. & Ziegler, A. (2020). E-portfolio use and its effects on exam performance – a field study. *Studies in Higher Education, 45*, 258–270. https://doi.org/10.1080/03075079.2018.1510388

Kleppmann, W. (2916). *Versuchsplanung – Produkte und Prozesse optimieren* (9th ed.). Hanser.

Walter, M., Storch, M. & Wartzack, S. (2014). On uncertainties in simulations in engineering design: A statistical tolerance analysis application. *Simulation, 90* (5), 547–559. https://doi.org/10.1177/0037549714529834

Walter, M.S.J., Klein, C., Heling, B. & Wartzack, S. (2021). Statistical Tolerance Analysis—A Survey on Awareness, Use and Need in German Industry. *Applied Sciences*, *11*, 2622. https://doi.org/10.3390/app11062622

2.8 Research funding and research programs

<table>
<tr><th colspan="4">Modulname: Research Funding and Research Programs</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Pflichtfach</td><td>summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Dr. Marion Jürgens</td></tr>
<tr><td>Language:</td><td colspan="3">English or German</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>9 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>16 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Seminaristischer Unterricht/Übung</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students know the basics of research funding in Germany, selected funding providers and funding programs for research projects as well as (online) sources for researching funding opportunities.
Students will be able to identify contacts whose support they need in the application process. They will learn about initiating cooperation, time and task planning, financial planning, utilization planning and legally and procedurally compliant submission as necessary steps for a successful application.
They will be familiar with the typical components of a funding application and know what information is expected to describe a research project in the "outline of ideas", "outline" and "full application" stages. They know the typical criteria used by funding bodies and reviewers to assess the eligibility of a project for funding.
Action Competence:
Students can research relevant funding calls for their field of research and extract funding criteria and necessary application documents from them. On this basis, they can make an initial assessment of the suitability of a research idea for the call.
They can identify open questions throughout the application process and obtain specific specialist information and advice from suitable contacts.
They are able to create an outline of a research idea in accordance with the funding provider's specifications. You can work in proposal teams on (more extensive) outlines and full proposals.
Social skills:
Students analyze text examples in a team and thus sharpen their analytical and judgmental skills together.</td></tr>
</table>

Content:

The module "Research Fundings and Research Programs" explains the basics of acquiring funding for your own research projects and teaches you how to submit applications.

The module consists of seminar-style teaching and self-study phases.

Content 1 Research funding and important funding programs in Germany and the EU

Content 2 Reading research calls and extracting information

Content 3 Planning funding projects (checking the suitability of ideas and calls for proposals, identifying success criteria, finding cooperation partners, planning partner contributions and applications)

Content 4 Writing funding applications (typical components, application team, time planning, do's and don'ts)

Examination:

Projektarbeit

Literature:

Löhrmann, I. (2018). Im Wettbewerb ums fremde Geld. Die Kunst, an Drittmittel für die Forschung zu kommen. DUZ Verlags- und Medienhaus GmbH, ISBN 978-3-96037-292-9

Preuß, S. (2017). Drittmittel für die Forschung: Grundlagen, Erfolgsfaktoren und Praxistipps für das Schreiben von Förderanträgen. Deutschland: Springer Fachmedien Wiesbaden.

Lang, D. S., Marschall, D. M. (2020). Forschungsanträge in den Life Sciences: Drittmittel erfolgreich einwerben. Deutschland: tredition.

3 Compulsory elective modules

3.1 Teaching skills

Modulname: Teaching skills			
Duration of module	1 Semester	**SPO-Nr.:**	
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlfach	winter
Responsible for module:	Prof. Dr. Verena Gerner		
Language:	German		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours: 48 h Self-study: 77 h Total: 125 h		
Lecture type:	Interactive online course with elements of: Seminar-based teaching, practical exercises, group work, transfer tasks, project work, peer counseling		

Objectives:

Knowledge:

In the context of the module, participants will acquire the necessary knowledge for planning, designing, implementing, and evaluating teaching sequences. By the end of the course, they will be able to formulate learning objectives and incorporate activating methods into their teaching concepts. They will be able to create learner-friendly PowerPoint slides that optimally complement their oral presentations. Participants will be able to describe the most important examination formats and differentiate them according to levels of learning objectives. They will also be able to identify challenging situations in teaching and formulate solutions for common problems. Additionally, they will learn how to apply the method of collegial case consultation to collaboratively and systematically develop solutions to issues. The course will provide participants with knowledge and tools for digital teaching. They will understand what is essential when creating digital teaching materials and can apply the theoretical foundations learned to a practical project. By the end of the course, participants will be able to independently create multimedia, interactive self-learning units using e-learning authoring tools. Depending on their choices, participants will also be able to work with other frequently used tools (e.g., Moodle, Zoom, etc.). Thanks to the delivery of the "Teaching Skills" module via Zoom, participants will also gain inspiration for designing interactive online courses.

Action Competence:
Participants will be able to design and deliver (parts of) courses (face-to-face and/or online) and assist with examinations. They can create multimedia, interactive self-study units and use tools for digital teaching. They can use various methods and resources to master difficult teaching situations and advance their own development as a teacher.

Social Skills:
Students work independently in small groups to organize the processing of exercises and required activities as part of the module and jointly develop solutions for the tasks. Lecturers and fellow students provide appreciative feedback in the joint presentation and discussion of the solutions developed.

Content:

The course is thematically divided into the following areas. The classes are spread over six block days (each day from 9:00 AM to 4:30 PM) that will take place online via Zoom.

Basics of university didactics (approx. 2.5 days)

- Constructive alignment as base of university didactics
- Didactic conception and course planning
- Learning-friendly design of PowerPoint slides
- Activating methods for face-to-face and live online teaching
- (Support for) examinations
- Role as a teacher and dealing with difficult situations
- Transfer: Implementation of your own teaching sequence

Digital teaching (approx. 2.75-3 days)

- Application scenarios of digital teaching at universities
- Media didactic basics for the conception of self-study units
- Technical introduction to the e-learning authoring tool H5P
- Transfer: Creation of an e-learning unit on a selected topic
- Presentation of the results and feedback
- Additional input from the Service Center for Digital Teaching and Didactics (e.g. quiz tools, Moodle, Zoom, creation of screencasts,...)

Professionalization in university didactics (approx. 0.5-0.75 days)

This event can take place in presence/hybrid if necessary after consultation with the group

- Reflection on your own learning process in this module
- Discussion of open questions and additional input on selected topics
- Teaching and application of the “peer counseling” method for finding solutions
- Fireside chat with another experienced teacher (full-time professor) on this job profile and teaching activities

Examination:

E-Learning unit

Literature:

Kerres, M. (2018). Mediendidaktik. Konzeption und Entwicklung digitaler Lernangebote. De Gruyter, 5. Auflage, ISBN: 9783110456837

Kerres, M. (2021). Didaktik. Lernangebote gestalten. Waxmann. DOI: 10.36198/9783838557182

Modlinger, D. (2020). eLearning und Mobile Learning – Konzept und Drehbuch

Handbuch für Medienautoren und Projektleiter. Springer.DOI: https://doi.org/10.1007/978-3-658-27814-4

Mörth, M., Prausa, J., Bernhard, N., Watermann, R. (Hg.), Evidenzbasierte Hochschullehre - Verbindungslinien zwischen Forschung & hochschuldidaktischer Praxis, 1. Aufl., Bd. 7. in die hochschullehre, Themenheft 2021, vol. 7, wbv Publikation. Zugegriffen: 4. Oktober 2023. [Online].

Verfügbar unter: https://www.wbv.de/shop/Evidenzbasierte-Hochschullehre-Verbindungslinien-zwischen-Forschung-hochschuldidaktischer-Praxis-6004844w

Schneider, M. & Mustafic, M. (2015). Gute Hochschullehre. Eine evidenzbasierte Orientierungshilfe. Wie man Vorlesungen, Seminare und Projekte effektiv gestaltet. Springer. DOI: https://doi.org/10.1007/978-3-662-45062-8

Ulrich, I. (2020). Gute Lehre in der Hochschule.. Springer. DOI: https://doi.org/10.1007/978-3-658-31070-7

3.2 Academic writing in English

Modulname: 1.1 Academic writing in English			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	summer
Responsible for module:	Prof. Dr. Michael Walter		
Language:	English		
Credit points / SWS:	2 ECTS / 2 SWS		
Workload:	Contact hours:		23 h
	Self-study:		27 h
	Total:		50 h
Lecture type:			
Objectives:			

This advanced seminar is designed to enhance the academic writing skills of PhD students, equipping them with the necessary tools to excel in scholarly communication in the English language. The course is structured to address three key areas of competence: Professional and methodological competence, Operational competence, and Social competence.

Professional and Methodological Competence:

- Develop a deep understanding of academic writing conventions and standards in English.
- Hone critical thinking skills to effectively articulate and defend scholarly arguments..

Operational Competence:

- Acquire advanced skills in structuring and organizing academic papers, including abstracts, introductions, methods, results, and discussions.
- Enhance proficiency in creating clear and concise academic prose, focusing on clarity, coherence, and cohesion.
- Develop strategies for effective time management in the writing process, including goal-setting, drafting, revising, and editing.

Social Competence:

- Engage in collaborative writing and peer review processes to provide constructive feedback and receive critical input.
- Develop communication skills for presenting research findings both in writing and orally.
- Enhance cross-cultural communication competence to engage effectively in the global academic community.

Content:
Throughout the course, emphasis will be placed on practical application, with students actively working on their own research projects. The goal is to empower PhD students to produce high-quality academic writing that meets international standards and contributes meaningfully to their respective fields of study. By the end of the course, participants will have refined their academic writing skills and gained the confidence to navigate the complex landscape of scholarly communication in English.
Examination:
Projektarbeit
Literature:

3.3 Presenting at Scientific conferences

<table>
<tr><th colspan="4">Modulname: Presenting at Scientific conferences</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Julia Sasse</td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">2 ECTS / 2 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>18 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>32 h</td></tr>
<tr><td colspan="2">Total:</td><td>50 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3"></td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Students understand the different formats and purposes of scientific conferences. They are familiar with various presentation formats and respective goals and requirements and can write convincing abstracts. They are proficient in crafting concise and impactful presentations suited for traditional talks and scientific posters and alternative formats like lightning talks.
Action Competence:
Students have practical skills essential for delivering well-structured and engaging scientific presentations. They are able to construct a coherent research narrative, conceptualize effective presentations, and deliver succinct lightning talks. They are proficient in the design aspects of presentations, from an understanding of fundamental principles related to perception and attention to creative slide creation.
Social Skills:
Students utilize peer feedback to refine their presentation style and enhance overall communication effectiveness. At scientific conferences, they are able to navigate the social dynamics with a focus on networking strategies. They are familiar with the etiquette of professional interaction with peers, fostering collaborations, and establishing enduring connections within the scientific community.</td></tr>
<tr><td colspan="4">Content:</td></tr>
</table>

- Overview of Scientific Conferences: Types and Objectives
- Presentation Formats: Goals and Considerations
- Abstract Writing Essentials
- Constructing a Coherent Presentation Storyline
- Conceptualizing Effective Scientific Presentations
- Proficiency in Lightning Talks and Poster Presentations
- Principles of Presentation Design
- Leveraging Peer Feedback for Improvement
- Practical Presentation Exercises

Examination:

Presentation

Literature:

Andersen, R., & Armstrong II, D. A. (2021). *Presenting statistical results effectively*. Sage.

Hey, B. (2018). *Präsentieren in Wissenschaft und Forschung*. Springer-Verlag.

Rowe, N. (2017). *Academic & scientific poster presentation*. Switzerland: Springer.

3.4 Advanced research methods 1

Modulname: 1.1 Advanced research methods 1			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English		
Credit points / SWS:	2 ECTS / 2 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:			

Objectives:

This course is designed to equip PhD students with the essential skills needed for conducting research in their field. The content of this course is variable and depends on the field of research and the methodology of the target group of PhD students that it aims for.

Knowledge:

- Develop proficiency in the principles and methodologies in a certain field of research.
- Aquire a comprehensive understanding of a certain research methodology.
- Explore ethical considerations in the application of this method.

Action Competence:

- Master the methodology that is focused on in this course.
- Gain practical experience in its application.
- Understand how to integrate this methods in their own research projects.

Social Skills:

- Students discuss different methodological approaches and their application in their research projects and thus sharpen their analytical and judgmental skills together.

Content:
At least one of these or similar methods should be addressed in this course: ● Experimental Research Methods: Experiment design, randomization, control groups, internal and external validity. ● Quasi-experimental Designs: Application of quasi-experimental designs in research, challenges and opportunities. ● Longitudinal Studies: Planning and conducting longitudinal studies, analyzing changes over time. ● Multilevel Analysis: Analyzing data with hierarchical structures, such as students in classes or employees in companies. ● Qualitative Research Methods: Introduction to qualitative research approaches such as interviews, focus groups, content analysis. ● Meta-Analysis: Summarizing and synthesizing results from multiple studies to derive general conclusions. ● Bibliometric analysis
Examination:
Projektarbeit
Literature:

3.5 Advanced research methods 2

<table>
<tr><th colspan="4">Modulname: 1.1 Advanced research methods 2</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>z.B. winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3"></td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">2 ECTS / 2 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>h</td></tr>
<tr><td colspan="2">Self-study:</td><td>h</td></tr>
<tr><td colspan="2">Total:</td><td>h</td></tr>
<tr><td>Lecture type:</td><td colspan="3"></td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">This course is designed to equip PhD students with advanced skills needed for conducting research in their field. The content of this course is variable and depends on the field of research and the methodology of the target group of PhD students that it aims for.

Knowledge:
● Develop proficiency in the principles and methodologies in a certain field of research.
● Aquire a comprehensive understanding of a certain research methodology.
● Explore ethical considerations in the application of this method.

Action Competence:
● Master the methodology that is focused on in this course.
● Gain practical experience in its application.
● Understand how to integrate this methods in their own research projects.

Social Skills:
● Students discuss different methodological approaches and their application in their research projects and thus sharpen their analytical and judgmental skills together.</td></tr>
</table>

Content:
At least one of these or similar methods should be addressed in this course: ● Advanced Statistical Analyses: Applying complex statistical models such as multivariate analyses, structural equation modeling, or Bayesian statistics. ● Network Analysis: Analyzing relationships between units in a network, identifying key actors and structures. ● Mixed-Methods Research: Integrating quantitative and qualitative research methods for comprehensive data collection and interpretation.
Examination:
Projektarbeit
Literature:

3.6 Science Communication

Modulname: 1.1 Science Communication - Modern Speaking - Präsentieren am Puls der Zeit			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	Winter
Responsible for module:	Prof. Dr. Markus Paul		
Language:	German		
Credit points / SWS:	2 ECTS / 2 SWS		
Workload:	Contact hours:		18 h
	Self-study:		32 h
	Total:		50 h
Lecture type:	Seminaristischer Unterricht		
Content & Objectives:			
"Death by PowerPoint", long-winded introductions, and unstructured arguments are all examples of bad presentations. Who hasn't experienced them? But there is another way! In the seminar "Modern Speaking - Präsentieren am Puls der Zeit", you will learn about modern presentation forms and techniques and how to apply them to science communication. You will learn about modern presentation forms such as science slams, various types of pitches (e.g., elevator and Pixar pitches), Pecha Kucha, and TED Talks. You will also learn about overarching topics of good presentations, such as storytelling methods, pyramidal and recipient-oriented presentation, humor, comedy, and good body language. The seminar's goal is to design scientific presentations that engage the audience and facilitate the retention of information. Through didactic reduction and targeted application of the learned presentation forms, modern rhetorical methods can be used in research and teaching to create engaging presentations without compromising scientific rigor.			
Examination:			
Presentation			

Literature:

3.7 Empirical economic research with R

Modulname: 1.1 Empirical economic research with R			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:	Prof. Dr. Christine Dauth		
Language:	German/English		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:		56 h
	Self-study:		69 h
	Total:		125 h
Lecture type:	Self-study module and case study seminar		

Objectives:

Knowledge:

- The doctoral candidates acquire knowledge of how to conduct surveys and learn how to efficiently communicate their research in an academic context.
- They are familiar with the legal data protection and ethical aspects of data collection.
- In addition, they have basic knowledge and, in some areas, detailed knowledge of R for processing and analyzing survey data.
- The doctoral candidates lead a student project group and guide them in working on an empirical research project.

Action Competence:

- The doctoral candidates know how to apply the theoretical knowledge of empirical research in real projects and involve students in the implementation. They are able to identify relevant issues and find a suitable approach to solving them.
- They can apply the project management skills they have acquired so far in practice. They also train their self-regulation and teamwork skills, i.e., the ability to organize themselves, manage time, and effectively lead a group.

- The doctoral students use RStudio to professionally convey their analysis skills to the students in their research projects and expand them. They are able to produce a group result that is self-explanatory, clear and concise in its presentation and can support students in visualizing and interpreting it.

Social Skills:

- Working on projects in teams promotes communication, teamwork, leading, and interpersonal conflict resolution skills.
- The doctoral candidates learn to efficiently guide the student project groups, address open questions, and steer their work towards a clear result.

Content:

- Empirical analysis, usually of survey data, for a selected research project
- Construction of questionnaires and transfer to an online survey tool
- Preparation and analysis of data using R with the RStudio interface (e.g., script creation and management, important statistical procedures, data visualization)
- Statistical analysis and interpretation of collected data
- Preparation of results in presentations and reports
- Leading and supporting students in all acquired skills

Examination:

Research project with presentation (15 min)

Literature:

Ismay, Chester and Kim, Albert Y. (2020): Statistical Inference via Data Science: A ModernDive into R and the Tidyverse. Available at: https://moderndive.netlify.app/index.html [accessed on September 29, 2021].

Sauer, Sebastian (2019): Moderne Datenanalyse mit R: Daten einlesen, aufbereiten, visualisieren, modellieren und kommunizieren, Wiesbaden, Springer Gabler.

3.8 Multivariate analysis

<table>
<tr><th colspan="4">Modulname: 1.1 Multivariate analysis</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>z.B. winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Barbara Hedderich</td></tr>
<tr><td>Language:</td><td colspan="3">German/English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">5 ECTS / 5 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>56 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>69 h</td></tr>
<tr><td colspan="2">Total:</td><td>125 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Self-learning module and case study seminar</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
Detailed knowledge of a software programme for statistical analysis and complex analysis methods

Action Competence:
Ability to professionally apply a software programme for statistical analysis in the context of questionnaire surveys

Social Skills:
Ability to provide advice in the context of demanding survey projects</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4"></td></tr>
</table>

- Empirical analysis, usually of survey data, for a selected research project
- Construction of questionnaires and transfer to an online survey tool
- Preparation and analysis of data using R with the RStudio interface (e.g. script creation and management, important statistical procedures, data visualization)
- Statistical analysis and interpretation of collected data
- Preparation of results in presentations and reports
- Leading and supporting students in all acquired skills

Examination:

Research project with presentation (15 min)

Literature:

Ismay, Chester and Kim, Albert Y. (2020): Statistical Inference via Data Science: A ModernDive into R and the Tidyverse. Available at: https://moderndive.netlify.app/index.html [accessed on September 29, 2021].

Sauer, Sebastian (2019): Moderne Datenanalyse mit R: Daten einlesen, aufbereiten, visualisieren, modellieren und kommunizieren, Wiesbaden, Springer Gabler.

3.9 Writing research proposals

Modulname: Writing research proposals			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English or German		
Credit points / SWS:	2 ECTS /2 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:			
Objectives:			
By actively engaging in writing research proposals, the students learn how to develop project ideas, draft and finalize research proposals.			
Content:			
The students actively engage in writing research proposals.			
Examination:			
Credit for the "Writing research proposals" module is awarded upon application for recognition. The submitted project proposal serves as proof. The doctoral candidate must be the (co-)applicant.			
Literature:			

3.10 Academic teaching

<table>
<tr><th colspan="4">Modulname: Academic teaching</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>z.B. winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3"></td></tr>
<tr><td>Language:</td><td colspan="3">English or German</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">3 ECTS /3 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>h</td></tr>
<tr><td colspan="2">Self-study:</td><td>h</td></tr>
<tr><td colspan="2">Total:</td><td>h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Seminaristischer Unterricht und virtueller Unterricht</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Knowledge:
● Gain knowledge of various teaching and learning methods and their applications

Action Competence:
● Gain experience in catering to diverse learners and their needs
● Improve skills in evaluating teaching sessions and processing feedback

Social Skills:
● teamwork, communication, and interaction with students</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">Students have the opportunity to enhance their skills in academic teaching and learning. They not only learn how to apply effective teaching strategies but also how to successfully communicate their knowledge and research findings to students. Additionally, important social competencies are fostered, which are crucial for a successful academic career.</td></tr>
</table>

Examination:
Credit for the “Academic Teaching” module is awarded by submitting an application for credit recognition with proof of having taught a university course of at least 2 SWS at BA level over a period of one semester.
Literature:

3.11 Colloquium 1

<table>
<tr><th colspan="4">Modulname: Colloquium 1</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Sebastian Sauer</td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>5 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>20 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3"></td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Disciplinary Competence
Develop a Deep Understanding of Research Methodologies: Students will acquire in-depth knowledge of various research methodologies, enabling them to design robust empirical studies. This includes understanding the strengths and limitations of different research designs, statistical analyses, and how to apply them appropriately to their research questions.
Critical Analysis of Literature: Students will develop the ability to critically evaluate and synthesize research literature. This involves assessing the relevance, rigor, and contributions of existing studies, identifying gaps in the literature, and understanding the implications for their own research.
Advancement of Subject Matter Expertise: Students will enhance their expertise in their specific area of psychology, gaining a comprehensive understanding of the theoretical frameworks, key studies, and emerging trends. This will empower them to contribute novel insights and advancements to their field.

Action Competence
Research Project Management: Students will learn to effectively plan, implement, and manage their research projects. This includes setting realistic timelines, managing resources, adhering to ethical guidelines, and adjusting project plans in response to challenges or new opportunities.
Data Analysis and Interpretation: Students will gain proficiency in analyzing empirical data using appropriate statistical techniques. They will learn how to interpret results in the context of their research questions, draw valid conclusions, and articulate the implications of their findings.</td></tr>
</table>

Scholarly Writing and Presentation Skills: Students will enhance their ability to communicate their research clearly and persuasively, both in written form and through oral presentations. This includes structuring research papers, writing for publication, and presenting findings at colloquia and conferences.

Social Skills

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These objectives are designed to ensure that PhD students in psychology not only gain a deep understanding of their discipline but also develop the practical skills and social competencies necessary for a successful career in research and academia.

Content:

In the Research Colloquium, doctoral candidates and other researchers present the current status of their doctoral projects (or a part thereof). The audience provides feedback and engages in a discussion with the presenter, evaluating the pros and cons of the approaches presented. The aim is to support the researchers and promote scientific exchange and networking. Additionally, the event serves to practice presenting and discussing within an academic environment.

Examination:

Presentation

Literature:

American Psychological Association. (2019). Publication manual of the american psychological association, 7th edition. American Psychological Association (APA).

American Psychological Association. (2019). Publication manual of the american psychological association, 7th edition. American Psychological Association (APA). https://www.amazon.com/Publication-Manual-American-Psychological-Association/dp/1433805618?SubscriptionId=0JYN1NVW651KCA56C102&tag=techkie-20&linkCode=xm2&camp=2025&creative=165953&creativeASIN=1433805618

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Presenting Your Research. (2024, Januar 24). SAGE Publications Ltd. https://uk.sagepub.com/en-gb/eur/presenting-your-research/book241772

Prinstein, M. J. (Hrsg.). (2013). The Portable Mentor: Expert Guide to a Successful Career in Psychology. Springer. https://doi.org/10.1007/978-1-4614-3994-3

Udovicich, C., Kasivisvanathan, V., & Winchester, C. L. (2017). Communicating your research (part 1) – to the scientific community. Journal of Clinical Urology, 10(4), 396–399. https://doi.org/10.1177/2051415816668941

3.12 Colloquium 2

<table>
<tr><th colspan="4">Modulname: Colloquium 2</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3">Prof. Dr. Sebastian Sauer</td></tr>
<tr><td>Language:</td><td colspan="3">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">1 ECTS / 1 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>5 h</td></tr>
<tr><td colspan="2">Self-study:</td><td>20 h</td></tr>
<tr><td colspan="2">Total:</td><td>25 h</td></tr>
<tr><td>Lecture type:</td><td colspan="3"></td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Disciplinary Competence
Develop a Deep Understanding of Research Methodologies: Students will acquire in-depth knowledge of various research methodologies, enabling them to design robust empirical studies. This includes understanding the strengths and limitations of different research designs, statistical analyses, and how to apply them appropriately to their research questions.
Critical Analysis of Literature: Students will develop the ability to critically evaluate and synthesize research literature. This involves assessing the relevance, rigor, and contributions of existing studies, identifying gaps in the literature, and understanding the implications for their own research.
Advancement of Subject Matter Expertise: Students will enhance their expertise in their specific area of psychology, gaining a comprehensive understanding of the theoretical frameworks, key studies, and emerging trends. This will empower them to contribute novel insights and advancements to their field.

Action Competence
Research Project Management: Students will learn to effectively plan, implement, and manage their research projects. This includes setting realistic timelines, managing resources, adhering to ethical guidelines, and adjusting project plans in response to challenges or new opportunities.
Data Analysis and Interpretation: Students will gain proficiency in analyzing empirical data using appropriate statistical techniques. They will learn how to interpret results in the context of their research questions, draw valid conclusions, and articulate the implications of their findings.</td></tr>
</table>

Scholarly Writing and Presentation Skills: Students will enhance their ability to communicate their research clearly and persuasively, both in written form and through oral presentations. This includes structuring research papers, writing for publication, and presenting findings at colloquia and conferences.

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Udovicich, C., Kasivisvanathan, V., & Winchester, C. L. (2017). Communicating your research (part 1) – to the scientific community. Journal of Clinical Urology, 10(4), 396–399. https://doi.org/10.1177/2051415816668941

4 Scientific activities

4.1 Conference participation (with oral presentation)

<table>
<tr><th colspan="4">Modulname: Conference participation (with oral presentation)</th></tr>
<tr><td>Duration of module</td><td>1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td>Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td>Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="3"></td></tr>
<tr><td>Language:</td><td colspan="3">English or German</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="3">2 ECTS / 2 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="2">Contact hours:</td><td>h</td></tr>
<tr><td colspan="2">Self-study:</td><td>h</td></tr>
<tr><td colspan="2">Total:</td><td>h</td></tr>
<tr><td>Lecture type:</td><td colspan="3">Seminaristischer Unterricht, Übungen</td></tr>
<tr><td colspan="4">Objectives:</td></tr>
<tr><td colspan="4">Action Competence:
Gain experience in presenting at a scientific conference.
Skills in delivering a clear and compelling presentation to a diverse audience.
Confidence in responding to questions and facilitating discussions during the presentation.
Social Skills:
Building relationships with potential collaborators or mentors through effective communication during and after presentations
Engaging with the audience and creating a positive impression through effective public speaking</td></tr>
<tr><td colspan="4">Content:</td></tr>
<tr><td colspan="4">Selecting and applying to academic conferences.
Writing an abstract and preparing a conference presentation.
Presenting at academic conferences.
Networking at conferences.</td></tr>
</table>

• Responding to questions and engaging in discussions.
Examination:
The confirmation of participation and proof of own presentation (e.g. program booklet, link) are uploaded with the application for recognition.
Literature:

4.2 Conference participation (with paper published)

<table>
<tr><th colspan="5">Modulname: Conference participation (with paper published)</th></tr>
<tr><td>Duration of module</td><td colspan="2">1 Semester</td><td>SPO-Nr.:</td><td>SWS/HSAN-20232</td></tr>
<tr><td rowspan="2">Curriculum:</td><td colspan="2">Programme</td><td>Module type</td><td>Semester</td></tr>
<tr><td colspan="2">Promotionsbegleitzertifikat (PBZ)</td><td>Wahlpflichtfach</td><td>z.B. winter + summer</td></tr>
<tr><td>Responsible for module:</td><td colspan="4"></td></tr>
<tr><td>Language:</td><td colspan="4">English</td></tr>
<tr><td>Credit points / SWS:</td><td colspan="4">4 ECTS / 4 SWS</td></tr>
<tr><td rowspan="3">Workload:</td><td colspan="3">Contact hours:</td><td>h</td></tr>
<tr><td colspan="3">Self-study:</td><td>h</td></tr>
<tr><td colspan="3">Total:</td><td>h</td></tr>
<tr><td>Lecture type:</td><td colspan="4">Seminaristischer Unterricht, Übungen</td></tr>
<tr><td colspan="5">Objectives:</td></tr>
<tr><td colspan="5">Action Competence:
Ability to write a clear and concise abstract and conference paper.
Skills in delivering effective presentations at academic conferences.
Social Skills:
Collaborating with co-authors on conference papers and presentations.
Building relationships within the academic community through conference participation.</td></tr>
<tr><td colspan="5">Content:</td></tr>
<tr><td colspan="5">Selecting and applying to academic conferences.
Writing an abstract and preparing a conference paper.
Presenting at academic conferences.
Networking at conferences.
Responding to questions and engaging in discussions.</td></tr>
<tr><td colspan="5">Examination:</td></tr>
</table>

The confirmation of participation and DOI of the paper or link to/PDF of the conference proceedings (first authorship required) are uploaded with the application for recognition.
Literature:

4.3 Publication of a journal article

Modulname: Publication of a journal article			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English		
Credit points / SWS:	4 ECTS / 4 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:			

Objectives:

Knowledge: Understanding of the academic publication process

Action Competence: Competence in critically evaluating research literature and one's own findings, experience in dealing with peer review processes and feedback

Social Skills: Collaboration with co-authors and colleagues in creating research articles, communication with editors and reviewers during the publication process, building networks within the academic community through article publication.

Content:

- Structure and formation of a journal article.
- Literature research and evaluation
- Academic writing and citation style
- Submission and review process to academic journals.

Examination:
Paper (with DOI, first authorship required) is uploaded with application for recognition.
Literature:

4.4 Research Stay (minimum 2 weeks)

Modulname: Research Stay (minimum 2 weeks)			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English		
Credit points / SWS:	2 ECTS / 2 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:	Seminaristischer Unterricht, Übungen		

Objectives:

Knowledge:
Expansion of the participants academic horizons through interaction with international colleagues and participation in seminars or conferences, Practical experience in handling specialized equipment, technologies, or laboratory procedures not available at their home institution

Action Competence:

Independent planning and execution of research projects in a new environment, enhancing their ability to work autonomously, adaptability and flexibility in dealing with unexpected challenges or cultural differences during the stay.

Social Skills:

Building networks and connections with other researchers that may lead to long-term collaborations or career opportunities, fostering intercultural sensitivity and strengthening social competencies such as teamwork.

Content:

Practical experience in handling specialized equipment, technologies, or laboratory procedures not available at their home institution and development of intercultural communication skills and teamwork through collaboration with international colleagues. After the research stay, the participant has to write a summary of one page of the key learnings and activities of the research stay.
Examination:
Certificate of Attendance and report of the stay, approval by doctoral supervisor are uploaded with application for recognition.
Literature:

4.5 Reviewer activity for peer reviewed journal or conference

Modulname: Reviewer activity for peer reviewed journal or conference			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English		
Credit points / SWS:	1 ECTS / 1 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:	Seminaristicher Unterricht, Übungen		
Objectives:			
Knowledge: Understanding the peer review process and criteria used to evaluate research submissions for publication or presentation, familiarity with academic writing standards, citation styles, and ethical considerations in research evaluation, insight into current trends and developments in their field of study by reviewing cutting-edge research submissions **Action Competence**: Developing critical thinking and analytical skills, enhancing communication skills by providing constructive feedback to authors and articulating recommendations for improvement **Social Skills:** Strengthening professional relationships with editors, authors, and fellow reviewers within the academic community			
Content:			

Participating in reviewer activities for peer-reviewed journals or conferences allows doctoral students to contribute to the academic community while improving their research evaluation, communication, and collaboration skill
Examination:
Certificate by conference commitee or journal editors is uploaded with application for recognition.
Literature:

4.6 Organization of scientific conferences

Modulname: Organization of scientific conferences			
Duration of module	1 Semester	**SPO-Nr.:**	SWS/HSAN-20232
Curriculum:	**Programme**	**Module type**	**Semester**
	Promotionsbegleitzertifikat (PBZ)	Wahlpflichtfach	z.B. winter + summer
Responsible for module:			
Language:	English		
Credit points / SWS:	2 ECTS / 2 SWS		
Workload:	Contact hours:		h
	Self-study:		h
	Total:		h
Lecture type:	Seminaristischer Unterricht, Übungen		
Objectives:			
Knowledge: Understanding the various aspects of conference organization, including legal, financial, and logistical considerations, review process and conference proceedings. **Action Competence**: Planing, coordination and management of resources to execute a successful conference **Social Skills**: Collaboration with various stakeholders such as speakers, sponsors, participants, and service providers, as well as effective communication and networking during the conference			
Content:			
Successfull organization of scientific conferences			
Examination:			
Certificate by conference or organzing commitee is uploaded with application for recognition.			
Literature: