HOCHSCHULE ANSBACH

Modulhandbuch

Science Communication Master

Fakultät Medien

SPO SCO/ HSAN 20252 (2024)

Wintersemester 2025/26

Stand: Oktober 2025

Inhalt

Understanding Research

Module brief title:	Understanding Research	SPO-Nr.:	HSAN-20252
Curriculum:	Program: Science Communication (Master)		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Prof. Dr. Andreas von Bubnoff		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		

Teaching goals:

Upon completion of this module, students will be able to:

- Understand the philosophical and historical roots and the basics of the “scientific method”
- Discuss the two cultures debate and how natural sciences differ from social science and humanities
- Describe the difference in the public perception of scientists and how scientists really do their work
- Assess the quality of research studies in terms of study design
- Assess the limits of scientific inquiry and what the reproducibility crisis really means for what science can and cannot do
- Explain the proper use, limitations, and challenges of statistics in science
- Understand traditional and non-traditional ways of scientific publishing
- Address the ethical side of research and innovation, for example in dual use
- Describe the science-society relationship like trust and what factors affect this relationship
- Understand science diplomacy

Module content:
Scientists and science communicators share the same goal: Find out and communicate the truth about the world. This module covers how scientists try to achieve that goal. It will introduce students to the workflows, players, challenges, and ethics of science and the ways it interacts with global society, covering all the steps from generating research data to publishing them. It will also discuss the many ways each of these steps can fail and why, and what we can do about that: • The philosophical, historical and ethical underpinnings of science • The two cultures debate about the difference between natural and social sciences and humanities • Studies and examples for what people think about scientists and how scientists really do their work • Statistics and research design in natural and social sciences: The basics • Limits of statistics and research design: The reproducibility crisis • The scientific publishing and conference industrial complex • The science-society interface: From the role of scientists and what affects people's trust in science to the politicization of science • Research ethics and dual use, or why science is not always good • Science diplomacy
Assessments:
Project work, 10-20 pages
Awarding of credits:
Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.
Reading / literature:
Will be announced at the beginning of the semester

SciComm & Society			
Module brief title:	Science Comm & Society	SPO-Nr.:	HSAN-20252
Curriculum:	Program Science Communication (Master)		
	Semester 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Prof. Dr. Andreas von Bubnoff		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		

Teaching goals:

Upon competing this module, students will be able to

- Explain what science communication is and how it came about
- Understand differences in science communication between the global north and south
- Explain how the role of science communicators and journalists changed over time
- Address ethical challenges in science communication
- Understand how the role of science communicators can affect people's trust
- Understand the challenges of communicating uncertainty and risk, climate, or social sciences & humanities
- Assess the role social media play in science communication
- Know causes of misinformation and strategies of preventing it
- Understand where to look for information on what audiences want from communicators and what makes people (dis)trust communicators

Module content:
This module gives a high-level view of the world of science communication. Topics discussed will include: • Definition and history of science communication around the world • Case studies of science communication from around the world, including how the global south differs from the global north • Ethical challenges and role of journalists historically and today: On conflicts of interest, objectivity wars and solutions journalism • History of science journalism in the United States and UK • Ethical challenges and role of strategic science communicators historically and today ● Communicating social sciences and humanities: A special case? • How (not) to communicate uncertainty and risk • Case study climate communication • Misinformation: What causes it and how (not) to prevent it • The role of social media in science communication: On echo chambers, filter bubbles and algorithms • The scicomm-society relationship: What do we know about trust, and what affects it?
Assessments:
Presentation, 15-30 Min.
Awarding of credits:
Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.
Reading / literature:
Will be announced at the beginning of the semester

Basic Comm Tools			
Module brief title:	Basic Comm Tools	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Prof. Dr. Andreas von Bubnoff		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		

Teaching goals:

Upon completion of this module, students will be able to:

- Understand and overcome psychological obstacles to communication
- Recognize bad and good writing
- Edit their own and others' texts to improve them in terms of clarity, brevity and word choice
- Adapt their communication to their audience
- Conduct successful interviews
- Understand and create basic versions of the different journalistic genres like news, features, Q&As, and OpEds/essays
- Compose academic and policy texts
- Create basic forms of audiovisual content
- Understand and apply storytelling strategies
- Create presentations and social media posts
- Prepare for and moderate discussions, debates and panels

- Use AI as a communication tool
- Understand the challenges of communicating for special occasions like planetarium narration, comedy, writing text for exhibitions or annotations for visuals

Module content:

No matter where science communicators will later work, there are certain basic elements to written and oral communication they will all need to succeed. This module covers these basics.

- Why is it so hard to communicate well? On the curse of knowledge and other obstacles to communication
- What makes good communication good and bad communication bad? Using general principles like brevity, clarity and word choice to edit texts
- How understanding audience affects communication
- The different types of text-based journalism: News, features, Q&A, OpEd ● Communication isn't just one way: Interviewing and the importance of listening ● How audiovisual communication differs from text: Go linear!
- Crossmedia narratology and storytelling techniques
- Writing for academia and policy
- Oral communication: Presentations and moderating discussions
- Social media communication
- Using AI for science communication: Workflows, tools, ethics, limits
- Special comms tools and cases: Blending text and visuals in annotations; planetarium narrations, comedy and writing texts for exhibitions

Assessments:

Project work, 10-20 pages

Vergabe von Leistungspunkten:

Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.

Reading / literature:

Will be announced at the beginning of the semester

Science Journalism			
Module brief title:	Science Journalism	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Deborah Cohen		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		

Teaching goals:

Upon completion of this module, students will be able to

- critically assess what stories / studies are worth coverage in the first place
- cover complex science stories that give a voice to all relevant perspective and context as an honest broker without under- or overstating scientific findings
- survive and market themselves as a freelancer and/or on the journalism job market
- report a story so that they can later sell it across different media formats
- approach a book project (long form)
- effectively use AI in their work
- adapt their reporting to challenges specific for certain fields like climate & environment; medicine; GMOs; AI; dual use technologies
- uncover hidden financial or other interests when covering scientific studies
- make reliable, for example by pre-publication fact checking or by addressing biases or conflicts of interest

Module content:
In case studies, exercises and field trips (where possible), students learn • the history and role of science journalism in the US and elsewhere: From Ghee Wiz to watchdog (and back?) • finding and pitching stories • reporting & outlining, writing and fact checking complex science stories • investigative techniques • communicating uncertainty and the process of scientific discovery as an honest broker without under- or overstating scientific findings • business models in journalism including freelancing financials and marketing • packaging the same story for indifferent formats and media • pitching and reporting a book project • using AI tools in journalism • the kind of challenges when reporting certain fields like climate & environment; medicine; GMOs; AI; dual-use technologies • the role of science journalists: Neutral arbiters of information or activists? And what about strategies like solutions journalism? • to discuss ethical questions, such as COIs when covering the same topic as a strategic and journalistic communicator • strategies to uncover financial or other interests when covering scientific studies Students are encouraged to develop a major story project that they will continue later as an ARP and/or Final Thesis, possibly also collaboratively with students working on a research project
Assessments:
Project work, 10-20 pages
Awarding of credits:
Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.
Reading / literature:
Will be announced at the beginning of the semester

Strategic Sci Comm			
Module brief title:	Strategic SciComm	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Sean Mattson		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		

Teaching goals:

Upon completion of this module, students will be able to

- Assess what makes communication journalistic versus strategic
- Address ethical challenges in strategic communication like potential conflicts of interest when mixing journalistic and strategic communication roles
- Create strategic communication materials in many fields from press releases and speeches to diplomatic cables, white papers and texts for advertising campaigns
- Assess career paths in strategic communication
- Understand how to employ journalistic storytelling and story research techniques to improve strategic communication products including writing and editing press releases, op-eds, feature stories, social media posts, and scripting for video production, webinars and podcasting
- Understand how to engage with scientists across research disciplines to improve their ability to collaborate with researchers to improve strategic science communication
- Assess weaknesses in strategic science communication outputs and how to address these weaknesses

- Interact with science journalists (at local, regional and international levels) to learn how to adapt science communication products to the needs and interests of different news outlets, media platforms, journalists, editors and their audiences
- Assess the quality, accuracy, and over-simplification of mainstream media news cycles and reporting on science topics

Module content:

Module components will include lectures and exercises related to:

- Why strategic science communication matters and what it means to be a strategic science communicator
- How to frame science messaging and identify communications objectives
- The fundamental differences between science journalism and strategic science communication
- How to employ the best practices of journalism in strategic science communication
- Techniques to establish strong professional relationships with scientists and communicate their roles and expectations
- How to prepare scientists for interactions with journalists
- How to support scientists in elaborating communications components of grant calls
- How to sift through scientific jargon and institutional fuzzwords
- Developing strategic science communication strategies and projects with writers, photographers, graphic designers or videographers
- Developing press releases, press briefings or multimedia and social media content
- Using AI as a tool in strategic science communication
- Global and regional trends in science journalism and strategic science communication
- The ethics of working as both freelance strategic science communicators and freelance science journalists
- How to read, understand and find the newsworthiness of research articles, including how to detect potential biases, errors, and conflicts of interest
- Fundamentals of writing, editing and verbally communicate science to non-experts
- Preparing relatively novel public science communication actions, including delivering science talks at venues in festivals, producing reels for social media, speaking in community fora, and comics

The module will explore examples of science communication done by:

- Governments and international organizations
- NGOs
- Thinktanks
- Ad/PR agencies
- Companies ● Universities
- Legacy media, including news reports and op-eds
- News sections of scientific journals

Assessments:
Project work, 10-20 pages Final assignment: Students will be assigned to develop a package of multimedia strategic science materials based on a scientific research paper (or a selection of papers on the same theme). They may choose to build the package on their own, but will be encouraged to work on small teams with different specialists (photographers, videographers, multimedia creators), as they would be expected to do in a professional strategic science communications role. Mandatory strategic communications assets they will produce will consist of: o A "press kit" that includes o An 800-word (max) press release or feature story o A 5-6 sentence pitch for media o 3-4 photographs related to the topic A rollout strategy based on guidance provided in module lectures Optional strategic communications assets can include any of the following, but some will be mandatory if students choose to work in teams. Expected deliverables will be tailored to the skill set of the teams. o An 800-word (max) opinion piece o Graphic design assets, including explanatory static graphics, animated or interactive design material o A ~200-word profile of a researcher involved in the publications, including a photograph of the researcher in "action" o A photography essay o A 3-5 minute video or video script o A 45-120 second reel or reel script o Scientific illustrations or a comic strip Finally, students will be required to present their projects to classmates and the Master's lecturers. If collaboration with Ansbach Hochschule research labs is possible, students will be encouraged to do these assignments with them, as would be expected in an academic strategic scientific communications role. Lab and researcher availability will be arranged before providing assignment options by the lecturer and Prof. Dr. von Bubnoff. Additionally, the instructor team will contact Hochschule Ansbach's communications department to explore the possibility of publishing student outputs on its platforms and to contribute to the selection of assignment choices that are aligned with the University's communications outputs and thematic research areas
Awarding of credits:
Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.
Reading / literature:
Required books and articles • Strategic Science Communication by John C. Besley & Anthony Dudo • Don't be Such a Scientist by Randy Olson • The Science Writer's Handbook edited by Thomas Hayden and Michelle Nijhuis • The Sense of Style by Steven Pinker

- Selected science news stories published by The Economist, The New York Times, The Guardian, The New Yorker, and top-tier German publications
- Selected op-eds related to science from The New York Times, The Conversation and other publications
- Selected peer-reviewed research papers (with a focus on papers in journals specializing in science communication and papers published by researchers at Hochschule Ansbach)

Recommended

- Politics and the English Language by George Orwell
- The Song of the Dodo by David Quammen
- The Demon-Haunted World by Carl Sagan
- The Blind Watchmaker by Richard Dawkins
- Astrophysics for People in a Hurry by Neil de Grasse Tyson
- QAnon and On by Van Badham
- Do You Talk Funny? by David Nihill
- Science-themed comics from xkd.com and The Oatmeal

Elective Module: Covering Sustainability			
Module brief title:	Covering Sustainability	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Robert Frederick		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		
Teaching goals:			

Upon completion of this module, students will be able to:

- Define core sustainability concepts.
- Describe the structure and purpose of major sustainability reporting frameworks.
- Assess sustainability strategies and consider corporate, societal, environmental, and governmental impacts.
- Critique strategic sustainability communication plans in ways that consider transparency, data-driven storytelling, and greenwashing.
- Map key stakeholders in sustainability narratives.
- Apply journalism's investigative methods to source, fact-check, and frame sustainability stories with balance and accuracy.
- Analyze ethical tensions between advocacy and objectivity in environmental reporting, and articulate how transparency and open data shape public trust.
- Critically assess case studies to identify best practices and common failures in both strategic and journalistic sustainability communication.

- Produce a cohesive final project -- either a strategic communication campaign or journalism series -- that informs, engages, and drives either sustainability action (for communication campaign) or further engagement (journalism series).

Module content:

This module explores both strategic and journalistic approaches to sustainability communication. It will introduce students to the key frameworks, workflows, players, ethical dilemmas, and storytelling techniques that drive credible, actionable narratives about corporate, environmental, social, and governmental impact. Through real-world case studies, we'll examine how data becomes story, how strategy shapes trust, and where sustainability decision-making, reporting coverage and strategic communication breaks down (and what to do when it does).

- Foundations of Sustainability – Equity, Environmental, and Economy -- and how they overlap, including carrying capacity, use of biological materials, agriculture, energy, society, development, and the crucial factors of geography and culture
- Sustainability Reporting Frameworks – (for both strategic communication and journalism) -- equity, climate, national and international, cities, local communities and neighborhoods, business and industry, financial markets, government, non-profits, policy, consumption, tragedy of the commons, geography
- Strategic Communication for Sustainability -- understandability, identity, values, promotion, influence, building support, moving to action
- Journalistic Coverage of Sustainability -- controversy, climate and energy generation, finance and reporting, corporate boards, policy and regulation, United Nations' agendas, challenging traditional perceptions of "development," transparency, holistic and pluralistic coverage,
- Ethics, Trust, and the Science-Society Interface
- Case Studies -- including business models for sustainable journalism
- When "Sustainability" Deceives -- greenwashing, greenhushing, solutions journalism, (over)specialization -- and What to Do About It
- Putting It All Together
    - Designing a sustainability strategic report or editorial plan
    - Peer reviews: critiquing strategic plans and journalistic drafts
    - Final project: produce a sustainability project under strategic or journalistic constraints

In sum, this module equips students with the tools to plan and execute sustainability communications that are strategically sound and journalistically rigorous, ensuring their stories inform, engage, and drive either meaningful change (for communication campaign) or further engagement (journalism series).

Assessments:

Project work, 10-20 pages

Awarding of credits:

Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.

Reading / literature:

Will be announced at the beginning of the semester

Elective Module: Visual Science Communication			
Module brief title:	Visual Science Communication	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Dr. Elena Milani		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		
Teaching goals:			

By the end of this module, students will be able to:

- Critically evaluate visual content in research communication, discriminate between informative and potentially misleading or harmful imagery across different scientific disciplines;
- Transform complex scientific information into accessible visual formats suitable for non-specialist audiences;
- Apply design fundamentals strategically, making evidence-based decisions about color, composition, visual hierarchy, and accessibility for diverse science communication contexts;
- Create purposeful visual materials for science communication campaigns, demonstrating clear rationale for every design choice;
- Analyze and address ethical implications of visual choices, including representation, bias, scientific accuracy, and potential harm to communities;
- Navigate AI-generated imagery critically, understanding both opportunities and limitations for ethical science communication;
- Approach visual design strategically rather than intuitively, and develop professional workflows for creating visual science communication materials.

Module content:

This module explores the critical role of visuals in research communication. Charts, diagrams, illustrations, and photographs strongly influence how audiences understand, trust, and act on scientific information. Students learn design fundamentals, consider ethical challenges, and develop practical skills for creating effective science communication materials. The module emphasizes critical thinking over aesthetic appeal, encouraging students to evaluate each visual choice in terms of message, audience, and possible unintended consequences.

Specifically, this module addresses:

- Core Principles of Visual Communication – audience analysis, medium selection, and communication objectives, with attention to how different contexts demand different visual approaches.
- Design Fundamentals – including color, composition, hierarchy, and accessibility, with emphasis on inclusive and evidence-based design choices.
- Visual Literacy and Visual Science Literacy – interpreting and evaluating visuals across diverse audiences, recognizing how science literacy and cultural background shape understanding.
- Transforming Information into Visuals – practical skills for creating clear, accurate diagrams, charts, and process flows that aid comprehension without distortion.
- Ethical Issues – critical discussion of accuracy, manipulation, framing, bias, stereotypes, and copyright in visual communication.
- AI and Visual Communication – critical engagement with AI-generated imagery, highlighting risks of inaccuracy, bias, and copyright concerns, and the need for careful evaluation before use.

Assessments:

Presentation, 15-30 Min.

In this assignment, students design three complementary visuals for a science communication campaign. They actively make strategic decisions about topic, message, audience, goal, and medium, and critically reflect on the process. The emphasis is on justification of choices and ethical awareness rather than technical

production. Students are encouraged to create materials they can realistically apply or adapt in future science communication practice.

The submission includes:

- Campaign overview – students define the topic, message, target audience, goal, and chosen medium (max. 300 words).
- Three visuals with rationale and process – students present three visuals and explain their design choices, production methods, and ethical considerations, supported by references (800–1,000 words).
- Reflection – students discuss challenges encountered and suggest improvements (max. 300 words).

Awarding of credits:

Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.

Reading / literature:

Optional reading - books:

- Pauwels, L. (Ed.). (2006). Visual Cultures of Science: Rethinking Representational Practices in Knowledge Building and Science Communication. Dartmouth College Press.

- Christiansen, J. (2023). Building Science Graphics: An Illustrated Guide to Communicating Science through Diagrams and Visualizations. CRC Press.
- Tufte, E. R. (2001). The Visual Display of Quantitative Information (2nd ed.). Graphics Press.
- Aiello, G., & Parry, K. (2019). Visual Communication: Understanding Images in Media Culture. SAGE.
- Lester, P. M. (2021). Visual Communication: Images with Messages (8th ed.). Cengage.
- Rose, G. (2022). Visual Methodologies: An Introduction to Researching with Visual Materials (5th ed.). SAGE.

Recommended papers:

- Bucchi, M., & Saracino, B. (2016). "Visual science literacy": Images and public understanding of science in the digital age. Science Communication, 38(6), 812–819. https://doi.org/10.1177/1075547016677833
- Smith, L. F., Smith, J. K., Arcand, K. K., Smith, R. K., Bookbinder, J., & Keach, K. (2011). Aesthetics and astronomy: Studying the public's perception and understanding of imagery from space. Science Communication, 33(2), 201–238. https://doi.org/10.1177/1075547010379579
- Trumbo, J. (1999). Visual literacy and science communication. Science Communication, 20(4), 409–425. https://doi.org/10.1177/1075547099020004004
- Rigutto, C. (2017). The landscape of online visual communication of science. Journal of Science Communication, 16(2), C06. https://doi.org/10.22323/2.16020306
- O'Neill, S. J., & Smith, N. J. (2014). Climate change and visual imagery. Wiley Interdisciplinary Reviews: Climate Change, 5(1), 73–87. https://doi.org/10.1002/wcc.249
- Chapman, D. A., Corner, A., Webster, R., & Markowitz, E. (2016). Climate visuals: A mixed methods investigation of public perceptions of climate images in three countries. Global Environmental Change, 41, 172–182. https://doi.org/10.1016/j.gloenvcha.2016.10.003
- Climate Outreach. (2016). Climate Visuals: Seven principles for visual climate change communication (based on international social research). Climate Outreach. https://climatevisuals.org/evidence/
- Houts, P. S., Doak, C. C., Doak, L. G., & Loscalzo, M. J. (2006). The role of pictures in improving health communication: A review of research on attention, comprehension, recall, and adherence. Patient Education and Counseling, 61(2), 173–190. https://doi.org/10.1016/j.pec.2005.05.004
- Kim, S. J., & Lee, J. H. (2024). The effectiveness of visual-based interventions on health literacy in adults: a systematic review and meta-analysis. Frontiers in Public Health, 12, Article 3624432. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11165863/

Elective Module: AI-powered Innovation Management			
Module brief title:	AI-powered Innovation Management	Reg-Nr.:	HSAN-20252
Curriculum:	Programme: Science Communication		
	Semester: 1		
Responsible for Module:	Prof. Dr. Andreas von Bubnoff		
Lecturer:	Prof. Hähnlein, Johannes		
Language:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Work load:	Contact hours:		48 h
	E-Learning:		0 h
	Self study:		102 h
	Total:		150 h
Module duration:	1 Semester		
Semester of module	Only winter term		
Instruction types:	Seminar & exercises		
Assessment:	None		
Recommended prerequisites:	None		
Prerequisites according to examination regulation:	None		
Teaching goals:			

By participating in the "AI-powered Innovation Management" module, students acquire critical knowledge and skills in innovation management, enhanced by modern AI tools. The module specifically addresses the use of AI in various stages of the innovation process, including idea generation, opportunity exploration, prototyping, and business design.

The module adopts a blended learning format, combining online self-learning with hands-on workshops, to guide students through a practical innovation process supported by an innovation software platform. A key element of the course is the involvement of a company partner who provides a real business challenge, en- suring that the module is highly practice-oriented with a focus on developing real-world impact. The goal is for students to work in teams to develop a market-ready innovative product idea and a corresponding busi- ness concept, which will be presented in a final pitch to a panel from the partnering company.

Distinctive Features of the Module:

- Practical Application: Instead of theoretical case studies, students tackle real innovation challenges provided by a company partner. This hands-on approach is designed to encourage the practical ap- plication of AI tools and techniques in developing genuine product ideas.

- Skill Enhancement: Students will extend their technical and methodological competencies to in- clude specialized knowledge in AI-supported innovation processes, market analysis, and the use of cutting-edge digital tools in business modeling.
- Innovation Driven: The module uses interactive methods and AI capabilities to boost the innovative potential of students, enabling them to create viable business ideas that could transition into real- world applications.
- Team Dynamics: Students will self-organize into multidisciplinary teams, assuming various roles needed to drive the innovation process, such as project manager, AI specialist, and business ana- lyst.
- Added Value: Successful projects have the potential for further development post-course, with op- portunities for:
    - o Continued collaboration with the company partner,
    - o Participation in additional pitches or innovation contests,
    - o Eligibility for incubation programs or startup grants.

Acquired professional action competence:

- Innovation Process Management: Students engage in a complete innovation cycle, from ideation through to prototyping and pitching, utilizing AI-enhanced tools and methods.
- Strategic Use of AI: Learning to integrate AI strategically at every stage of the innovation process to enhance the quality and feasibility of product ideas.
- Business and Product Development: Skills in developing business models and prototypes that are both innovative and marketable.
- Project Management and Team Leadership: Practical experience in managing projects, leading teams, and communicating effectively within a business context.

Acquired social skills:

- Team Formation and Management: Building and managing dynamic teams to tackle complex innovation challenges.
- Collaborative and Goal-Oriented Work: Coordinating team efforts towards common project goals under real-world constraints and timelines.
- Business Communication Skills: Constant interaction with professionals from the company partner.
- Presentation and Pitching Skills: Developing and refining presentation skills through regular feedback on project pitches.

Module content:
Course Structure: The "AI-powered Innovation Management" module combines interactive workshops with comprehensive online self-learning segments to guide students through the innovation process using AI tools. The curriculum is structured into a series of workshops and online modules that alternate to max- imize both hands-on learning and flexible, theory-based study. 1. Kick-off Workshop: Introduction to the course, fundamental concepts of innovation management, overview of supported soft- ware, and introduction to the real business challenge provided by the company partner. 2. Online Self-Learning: AI Tools and Software Training Deep dive into AI tools, practical training on software tools, application of AI in innovation, and prompt engineering for creative problem-solving. 3. Opportunity Exploration Workshop: Techniques for trend and technology scouting, defining search fields, using software for foresight, and de- veloping opportunity fields specifically tailored to the company challenge. 4. Online Self-Learning: Creativity and Ideation Creativity techniques, software-guided ideation campaigns, and submission of initial ideas. 5. Ideation Workshop & Intro to Prototyping Content: Final ideation session, idea evaluation, decision making, and hands-on prototyping assignments 6. Online Self-Learning: Prototyping Techniques Prototyping techniques, prototype development, and practical application of prototypes in the innovation process. 7. Project Management and Business Design Workshop: Fundamentals of project and portfolio management, practical aspects of managing innovation projects, and developing a business model. 8. Online Self-Learning: Pitch Preparation Preparing for the final pitch, refining presentation skills, and techniques for effective communication.
Assessments:
Project work
Awarding of credits:
Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.
Reading / literature:
Will be announced at the beginning of the semester