Exported Modules

27013 - Issues and Risk Management (engl.)

27013 - Issues and Risk Management (engl.)

General information	
Module Code	27013
Unique Identifier	IssuesRiskMg-01-BM-M
Module Leader(s)	Ass. Prof. Fuglseth, Kristian (kristian.fuglseth@haw-kiel.de)
Lecturer(s)	Ass. Prof. Fuglseth, Kristian (kristian.fuglseth@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Insight in the context and development of the risk society, risk communication, issues management and policy making Knowledge within the academic field of issues and risk management
Can apply models of issues and risk management
Multidisciplinary participation and cooperation within these subjects.
Candidates will be challenged to use theory and methodology on practical cases in order to apply these in future careers

HAW Kiel
Hochschule für Angewandte Wissenschaften Kiel
Kiel University of Applied Sciences

Content information

Content

Are you ready to tackle the unexpected challenges of a dynamic and ever-changing professional landscape?

This course kicks off with a workshop where students will brainstorm potential risks and crises they may face in their future careers. These scenarios could range from sustainability dilemmas and climate crises to conflicts, consumer issues, health risks, and other unpredictable challenges.

The results of this workshop will form the foundation of the students' final assessments.

Key Learning Objectives:
Insight into a Risky Society: Gain an understanding of the historical and contemporary contexts of the risk society, including how risks are communicated, issue management, and policymaking.
Master Core Concepts: Develop knowledge in crisis communication, corporate social responsibility (CSR), and public relations (PR), alongside the ability to apply both practical and theoretical models to real-world situations.
Practical Application: Use case-oriented learning to tackle realistic challenges and enhance problem-solving skills for future careers.
Multidisciplinary Understanding: Train your cross-disciplinary thinking. The course welcomes students with different perspectives from media-, communication programmes, other hamanistic or social sciences, but also natural sciences, health sciences, and beyond.

Course Structure:
Students will participate in case-oriented seminars, featuring short, visually engaging lectures that introduce the fundamental concepts of crisis communication, issue management, risk communication, social responsibility, and relations to the public. Case studies and practical examples will be at the heart of the teaching approach, ensuring that students can connect theory with actionable insights.

The course also incorporates Risk Society Theory, offering both a historical foundation and a contemporary lens through which to understand crises and risks. Students will explore how seemingly minor issues can escalate into significant risks or even full-blown crises. They will learn how effective issue management can transform these challenges into valuable learning opportunities and strategic advantages for organisations.

Why This Course Matters:
In an increasingly unpredictable world, where organisations are constantly navigating complex media landscapes and shifting societal expectations, issue and risk management has never been more relevant. For journalists, media professionals, communication officers, and PR managers, understanding the lifecycle of an issue—from its inception to its resolution—is critical.
This knowledge equips professionals to:
- Anticipate potential risks and crises before they escalate
- Design proactive strategies to address issues in alignment with organisational goals
- Build resilience and adaptability in both personal and professional contexts

Who Should Take This Course?
This course is ideal for students in media and communication studies, journalism, humanities, social sciences, natural sciences, health sciences, or any field where strategic communication and planning plays a vital role. Whether you are the watchdog journalist that investigates organisations, or if your aim is to lead or manage organisations, or navigate the complexities

Literature

Beck. (2016). Varieties of second modernity and the cosmopolitan vision. Theory, Culture & Society, 33(7-8), 257–270. https://doi.org/10.1177/0263276416671585

Fuglseth, K. (2020). Issues Management in Local Government: A Case Study of Risk Assessment and Issue Management in National Contingency Plans for Local Governments, In: Sabuncuoglu, B. (Volume editor) Themes in Issues, Risk and Crisis Communication: A Multi-Dimensional Perspective. Peter Lang. Berlin

Jaques, T. (2010) Embedding issue management as a strategic element of crisis prevention, in Disaster Prevention and Management: An International Journal, Vol. 19 Iss: 4, pp.469 – 482

Gillions, P. (2017): Issues Management, in: Tench, Ralph/Yeomans, Liz (Ed.): Exploring Public Relations, Pearson, p. 364-395

Heath. (1997). Strategic issues management?:organizations and public policy challenges. Sage Publications.

Heath. (2013). Issues management. I Heath (Red.), Encyclopedia of public relations Vol. 1: Bd. Vol. 1 (2nd ed., s. 495–499). Sage Reference.

Sørensen, M. P. (2016). Ulrich Beck: exploring and contesting risk. Journal of Risk Research, 21(1), 6- 16. https://doi.org/10.1080/13669877.2017.1359204

Woodman, Dan & Threadgold, Steven & Possamai-Inesedy, Alphia. (2015). Prophet of a New Modernity: Ulrich Becks Legacy for Sociology. Journal of Sociology. 51. 1117-1131. 10.1177/1440783315621166.

Additional literature:

Beck. (2002). The terrorist threat: World risk society revisited. Theory, culture & society, 19(4), 39–55. https://doi.org/10.1177/0263276402019004050

Diers-Lawson. (2020). Crisis communication: Managing stakeholder relationships (First ed., s. 300). Routledge. https://doi.org/10.4324/9780429437380

Dupras, & Williams-Jones, B. (2012). The expert and the lay public: reflections on influenza A (H1N1) and the risk society. American journal of public health, 102(4), 591–595. https://doi.org/10.2105/AJPH.2011.300417

Heath, & O'Hair, H. D. (2010). The significance of crises and risk communication. I Heath & H. D. O'Hair (Red.), Handbook of Risk and Crisis Communication (s. 5–30). Routledge Ltd - M.U.A. https://doi.org/10.4324/9780203891629

Hornmoen. (2018). "Environmentally friendly oil and gas production": Analyzing governmental argumentation and press deliberation on oil policy. Environmental Communication, 12(2), 232–246. https://doi.org/10.1080/17524032.2016.1149086

Ihlen, O., & Heath, R. L. (2018). The handbook of organizational rhetoric and communication (First ed., s. 3–12,385–448). John Wiley & Sons, Incorporated.

Ihlen, Ø., Toledano, M., & Just, S. N. (2021). Using rhetorical situations to

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
27013 - Hausarbeit	Method of Examination: Hausarbeit Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	General knowledge of the English language is required to participate.
Miscellaneous	Preparation for a reflection paper of between 1,200-1,600 words will start in the first session, with final submission about two weeks after the last session. Detailed information on the examination will be given in the first session.

60830 - Innovative Videos with Smartphones for Journalism & Content Creation: Instagram, TikTok & Co. (engl.)

60830 - Innovative Videos with Smartphones for Journalism & Content Creation: Instagram, TikTok & Co.

General information	
Module Code	60830
Unique Identifier	InnovVidInst-01-BM-M
Module Leader(s)	Dr. Möller, Christian (christian.moeller@haw-kiel.de)
Lecturer(s)	Dr. Möller, Christian (christian.moeller@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Comprehensive, specialised, factual and theoretical knowledge within the field of mobile videography and online video, including technical, legal and aesthetical knowledge.
A comprehensive range of cognitive and practical skills in production and online distribution of videos with mobile devices.
New technologies in mobile video production and distribution will be learned, tested and evaluated for their practical relevance and against professional and ethical standards.

Content information	
Content	Technical innovations in the field of mobile internet and handheld devices (smartphones, tablets, etc.) enable new forms of mobile journalism („MoJo", Vertical Video, 9:16 etc.) and marketing, including the mobile production and online distribution of video content. New mobile video production on handheld devices is met by new and ever changing platforms for distribution, including blogs, YouTube, IGTV, Facebook, Twitch, TikTok etc. Livestreaming on platforms add real time video broadcast at unprecedented low costs and minimal technical barriers. In this course, students will… …analyze new forms of online video platforms, including YouTube, Facebook Live, Twitch, TikTok etc.; …learn how to produce videos with smartphones and tablets; …test and evaluate new technologies for mobile video production (microphones, racks, gimbals etc.); …practice and experiment with new forms of mobile video (Reels, TikToks, etc.); …produce journalistic and other videos and publish them online; …evaluate new production and distribution forms. Students are invited to bring their own devices and equipment. Additional equipment for mobile video production will be provided. Due to its practical nature, this course is addressing ambitious and self-starting students that are willing to experiment with new technologies in the field of mobile video production and online video distribution.
Literature	TBA.

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
60830 - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Miscellaneous	Detailed information on the examination will be given in the first session.

60890 - Online Journalism in Practice (engl.)

60890 - Online Journalism in Practice

General information	
Module Code	60890
Unique Identifier	JournPractWr-01-BM-M
Module Leader(s)	Dr. Möller, Christian (christian.moeller@haw-kiel.de)
Lecturer(s)	Dr. Möller, Christian (christian.moeller@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2026, V2) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Basic journalistic skills in writing, research, analysis, photography, social media and content management systems (Wordpress).
Creation of editorial structures and journalistic content.
Teamwork and self-organization in editorial work.
Understanding of the role of journalism in democratic society and basic knowledge of media ethics.

Content information	
Content	Participants will learn about different journalistic forms and writing skills for (online) media. The will produce English language online news articles for the FHEWS blog and social media (www.fhews.de). Participants will organize the editorial and newsroom structure, identify topics, do the editorial planning, research, writing and photography. Also video and other news formats –from audio slideshows to Instastories- are possible. This seminar is for journalistically interested, curious and self-starting students that like to write.
Literature	The Missouri Group: News Reporting and Wrting. 12th Edition. Macmillan. Additional literature will be provided.

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
60890 - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Good English writing skills.
Miscellaneous	The detailed description of the examination will be announced at the beginning of the semester.

61130 - Wordpress Theming (engl.)

61130 - Wordpress Theming

General information	
Module Code	61130
Unique Identifier	WPThem-01-BA-M
Module Leader(s)	Prof. Dr. Uhing, Franziska (franziska.uhing@haw-kiel.de)
Lecturer(s)	Prof. Dr. Uhing, Franziska (franziska.uhing@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students extend their prior knowledge of frontend development. They explore the architecture of wordpress templates and plugins and by aplication within a project evaluate their prior skills.
By creating and discussing themes with fellow students the can identify problems, generate research questions and name possible solutions.
These can be presented in front of fellow students and external partners. Students can react to critique and feedback in a professional way and adapt their methods if required.
Students can evaluate their own methods critically, in relation to practical workflows.

Content information	
Content	Installing and configuring Wordpress on a webserver Designing a weblayout Creating themes based on php and CSS Extending the theme with Widgets Extending the theme with Plugins
Literature	de.wordpress.org

Teaching formats of the courses	
Teaching format	**SWS**
Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
61130 - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Knowledge in HTML and CSS

61400 - Crisis Communication in the Digital Media Landscape (engl.)

61400 - Crisis Communication in the Digital Media Landscape

General information	
Module Code	61400
Unique Identifier	CriCommCorpB-01-BM-M
Module Leader(s)	Gille, MaxNiklas (maxniklas.gille@haw-kiel.de)
Lecturer(s)	Gille, MaxNiklas (maxniklas.gille@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2026, V2) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students can deepen their knowledge in the field of crisis communication. In doing so, they can acquire new knowledge and review and differentiate skills already acquired in previous semesters.
By dealing with various case studies and topic-specific problems, students can recognize and evaluate problems and develop suitable counter-strategies, either alone or in groups.
Students are prepared for dealing with stressful situations and critical conversations.
The students will learn the close relationship between scientific analyses and practical instructions at the interface between theory and practice.

Content information	
Content	The module deals with the basics of modern crisis communication for companies and brands. First of all, there is a brief differentiation from areas such as crisis communication for individuals and issue management. The course is based on current case studies and actual challenges that are triggered by various developments in the media, society and, not least, contemporary history (e.g. the Russian war of aggression in Ukraine). The underlying developments are analysed in order to develop suitable (communicative) counter-strategies. Case studies are used, some of which are analysed and discussed in joint discussions, others in group work. The aim is to ensure a professional assessment of a (communicative) crisis situation, including a suitable concept for countermeasures. Theoretical models on the course of crises and corporate communication strategies are used.
Literature	Tba in the first session

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
61400 - Hausarbeit	Method of Examination: Hausarbeit Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes Remark: Essay

Miscellaneous	
Recommended Prerequisites	Bachelor 4th semester or higher, Master as of 1st semester
Miscellaneous	A detailed description of the module examination will be announced at the beginning of the semester.

61490 - Political communication in the European Union (engl.)

61490 - Political communication in the European Union

General information	
Module Code	61490
Unique Identifier	PolCommEurUn-01-BM-M
Module Leader(s)	Dubbert, Mathias (mathias.dubbert@haw-kiel.de)
Lecturer(s)	Dubbert, Mathias (mathias.dubbert@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2026, V2) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Upon completion of this module students will be able to understand the communication of the institutions of the European Union and the challenges of political communication on EU level. They have had the opportunity to review as well as compare and contrast some of the fundamental topics the European Union is working on by discussing particular case studies as well as looking into the political communication strategies of the EU-institutions, international businesses and European associations.
By way of case studies, individual students or small groups of students will be able to identify problems, formulate communication strategies and apply appropriate methods by attending discussion rounds with experts in Brussels.

The students can present and discuss their approaches and findings regarding the political communication in the European Union. They can manage to work in international teams and are aware of the need for businesses, institutions and associations to work on European topics and instruments of political communication.
The students are able to reflect critically upon their research by referring to good academic practices and professional standards and discuss that with EU-experts.

Content information	
Content	In the context of discussions with external experts in Brussels, the knowledge acquired is compared and expanded with the practical work of political communication at the European level.
Literature	European Commission (2025): The EU - what it is and what it does. Op.europa.eu. https://op.europa.eu/webpub/com/eu-what-it-is/en/ [access: 27.11.2025] Kaeding, M. (2024): Enlargement and the Future of Europe. Springer Cham Korkman, S. (2005): Economic Policy in the European Union. London: Palgrave Macmillan Nedergaard, P. (2007): European Union administration: legitimacy and efficiency. Boston: Nijhoff Kleine, M. (2013): Informal governance in the European Union: how governments make international organizations work. Ithaca: New York Cornell University Press

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
61490 - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Miscellaneous	An excursion to Brussels during the IDW (5.5.-8.5.) is the basis of this seminar. In addition - in consultation with the students – two online-meetings will take place in order to prepare for the excursion and for the examination. Students are responsible for travelling to and from Brussels as well as for their own accommodation and meals. Only a small part of their travel expenses can be reimbursed afterwards. It is recommended to arrive in Brussels on 5.5. and to leave on 8.5.. The appointments with experts in the EU institutions, company representatives and associations will take place during Wednesday morning and Thursday evening. Further information will be provided after successful registration. A detailed description of the module examination will be announced at the beginning of the semester.

61550 - Summer School: Future Media Makers. Digital Communication & Content Creation

61550 - Summer School: Future Media Makers. Digital Communication & Content Creation

General information	
Module Code	61550
Unique Identifier	SumSchoolFut-01-BM-M
Module Leader(s)	Dr. Möller, Christian (christian.moeller@haw-kiel.de)
Lecturer(s)	Dr. Bretthauer, Suse (suse.bretthauer@haw-kiel.de) Prof. Dr. Dickel, Petra (petra.dickel@haw-kiel.de) Prof. Dr. Hochscherf, Tobias (tobias.hochscherf@haw-kiel.de) Prof. Dr. Manzke, Robert (robert.manzke@haw-kiel.de) Dipl.-Regisseur Mertens, Christian (christian.mertens@haw-kiel.de) Dr. Möller, Christian (christian.moeller@haw-kiel.de) Prof.Dr. Rupert-Kruse, Patrick (patrick.rupert-kruse@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2026, V2) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.

Medienproduktion: Vertiefung technischer und gestalterischer Kenntnisse in den Bereichen Video-Editing, Podcast-Erstellung, Reels und Interviewführung. Technologische Trends: Verständnis und Anwendung von Künstlicher Intelligenz (KI) und kreativen Technologien im Kontext moderner Medienlandschaften. Storytelling: Beherrschung von Erzähltechniken für digitale Plattformen, um komplexe Inhalte zielgruppengerecht aufzubereiten.
Agiles Arbeiten & Hands-on: Anwendung praxisorientierter Methoden zur schnellen Umsetzung von Medienprojekten Analytisches Denken: Fähigkeit, die Entwicklung der Medienproduktion von der Vergangenheit bis in die Zukunft kritisch zu analysieren und einzuordnen. Projektmanagement: Strukturierte Planung und Durchführung digitaler Content-Creation-Prozesse unter Berücksichtigung von Zeitvorgaben und technischen Ressourcen.
Interkulturelle Kollaboration: Zusammenarbeit in international zusammengesetzten Teams mit Studierenden aus aller Welt zur Förderung des globalen Austauschs. Kommunikationsfähigkeit: Professionelle Präsentation von Projektergebnissen und aktiver fachlicher Austausch in englischer Sprache. Netzwerkbildung: Aufbau von fachspezifischen Kontakten durch Exkursionen und gemeinsame Aktivitäten
Selbstorganisation: Eigenverantwortliches Lernen und Arbeiten in einem fremden kulturellen und akademischen Umfeld während der zweiwöchigen Intensivphase. Reflexionsfähigkeit: Einschätzung der eigenen kreativen Stärken und Identifikation von individuellem Entwicklungsbedarf im Bereich digitaler Medien. Anpassungsfähigkeit: Souveräner Umgang mit neuen Technologien und wechselnden Anforderungen in einem dynamischen, digitalen Arbeitsumfeld.

Content information	
Content	Das Curriculum der Summer School ist als intensiver, praxisorientierter Workshop konzipiert, der den gesamten Workflow moderner Medienproduktion abbildet – von der ersten Idee bis zum fertigen digitalen Produkt. Die Inhalte gliedern sich in drei thematische Säulen: 1. Digitale Content-Creation & Storytelling Im Zentrum steht die Vermittlung moderner Erzähltechniken für soziale Medien und digitale Plattformen. Die Studierenden lernen, wie man Narrative für Kurzformate wie Instagram Reels, TikToks oder mobile Reportagen entwickelt. Ein besonderer Schwerpunkt liegt auf der Produktion von Podcasts, wobei die Teilnehmenden den Umgang mit professionellem Audio-Equipment und Schnittsoftware erlernen. 2. Technologie-Integration & Künstliche Intelligenz Die Summer School greift die aktuelle Transformation der Medienbranche auf. Ein wesentlicher Teil der Inhalte widmet sich dem Einsatz von KI-Tools in der Content-Erstellung. Hierbei geht es nicht nur um die technische Anwendung (z. B. generative KI für Bild und Ton), sondern auch um die kritische Reflexion: Wie verändern Algorithmen unsere Wahrnehmung? Welche ethischen Standards müssen bei der KI-gestützten Produktion eingehalten werden? 3. Angewandte Medienpraxis und Exkursionen Theorie wird direkt in die Praxis übersetzt. Die Studierenden realisieren in Kleingruppen eigene Medienprojekte. Ergänzt wird die Arbeit durch Exkursionen zu Medienhäusern oder kulturellen Institutionen im norddeutschen Raum (z. B. in Kiel oder Hamburg). Diese Einblicke in die professionelle Praxis ermöglichen es den Teilnehmenden, die gelernten Inhalte mit den Anforderungen des realen Arbeitsmarktes abzugleichen.
Literature	Wird zu Beginn der Lehrveranstaltung zur Verfügung gestellt.

Teaching formats of the courses	
Teaching format	**SWS**
Übung	2
Seminar	2

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	Regelmäßige aktive Teilnahme an der gesamten Summer School.
61550 - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Miscellaneous	Summer School in Kooperation mit dem International Office. Die Zulassung der Teilnehmenden erfolgt über das IO.

61560 - Shortfilm (engl.)

61560 - Shortfilm

General information	
Module Code	61560
Unique Identifier	Shortfilm-01-BM-M
Module Leader(s)	Dipl.-Regisseur Mertens, Christian (christian.mertens@haw-kiel.de)
Lecturer(s)	Dipl.-Regisseur Mertens, Christian (christian.mertens@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 4, 5, 6, 7
Study Subject: B.Eng. - Ming - Medieningenieur/-in (PO 2018, V1 + PO 2021, V2) Module type: Verpfl. Wahlmodul, PVO §3 Semester: 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2026, V2) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Upon completion of this module, students will be able to develop and deepen their professional competences in storytelling media. Their expertise corresponds to EQF/DQR Level 6. They gain a comprehensive understanding of project development, especially in short films. They learn to work in a creative environment and understand film production workflows. Themes include storytelling, casting, directing, scene breakdown, actor direction, film editing, and project finalization. Students also learn to use AI tools at every production step. They develop team leadership skills and collaborate effectively in small groups. They employ artistic and strategic approaches.

The students are introduced to the topics mentioned above. They then work in teams to create their own film narrative. During this process, they learn to solve problems both generally and specifically in an agile environment. They also develop good and quick decision-making skills. Additionally, they gain deep knowledge of film language, creative techniques, and teamwork. The experience can be transferred to all media productions.
Working on a film project involves a significant amount of communication. This includes interaction with external people and institutions. For example, it involves communicating with actors, technical service providers, or location owners.
The module enhances professional competencies in several areas. These include directing for the camera and pitching ideas. It also develops skills in production workflows, compromise, and decision-making under pressure. Students learn to work according to a timetable. The module deepens knowledge in film analysis and film studies. Additionally, it fosters networking with other departments at the University of Applied Sciences.

Content information	
Content	"Shortfilm" focuses on hands-on learning in short film production. Students work mainly in small groups to create a 5-10 minute film. The experience emphasizes storytelling, directing, and film editing while integrating AI tools in production.
Literature	"Directing – Film Techniques and Aesthetics" by Michael Rabinger (Focal Press, 2008 or younger), "So bekommen Sie Ihr Drehbuch in den Griff" by Bartosz Werner and Christian Mertens (Halem Verlag, 2022). Further literature will be issued during the semester.

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
61560 - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Prior knowledge in film production is advantageous but not necessary. The work will take place in small groups, and there will be individual supervision during the project, allowing different learning levels to be addressed. The written part of the portfolio exam will have a uniform level.
Miscellaneous	In this module, a fictional piece will be created, but any genre or hybrid forms are allowed and encouraged.

AMLEA - Advanced Machine Learning in Energy Applications

AMLEA - Advanced Machine Learning in Energy Applications

General information	
Module Code	AMLEA
Unique Identifier	AdvMachLearn-01-MA-M
Module Leader(s)	Prof. Dr. Hennig, Patrick (patrick.hennig@haw-kiel.de)
Lecturer(s)	Prof. Dr. Hennig, Patrick (patrick.hennig@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: M.Eng. - MET - Elektrische Technologien (PO 2017, V3) Module type: Wahlmodul Semester: 1, 2
Study Subject: M.Eng. - MET - Elektrische Technologien (PO 2025, V20261) Module type: Wahlmodul Semester: 1
Study Subject: M.Sc. - DS - Data Science Module type: Wahlmodul Semester: 2
Study Subject: M.Sc. - MCS - Computer Science (PO 2023, V1) Module type: Wahlmodul Semester: 1, 2
Study Subject: M.Sc. - MIE - Information Engineering (PO 2022, V3) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.

Students can specifically (in terms of content)... - explain the concept of machine learning (ML) and classify it in the context of artificial intelligence (AI), - name, differentiate, describe and explain the concepts, methods and models of supervised and unsupervised learning, - understand the mathematical and statistical foundations as well as in-depth methods and models of machine learning, - name and explain basic and advanced methods of data analysis and data pre-processing, in particular procurement, transformation, cleansing, partitioning, scaling, visualization and static description, - describe the complete process of carrying out an ML project from the analysis and pre-processing of data to the application of methods and development of models through to the post-processing of data (e.g. model-based forecasting). Students have/are generally able to... - significantly deepened and expanded their knowledge, - define and interpret the special features and limitations of the methods and models, - develop, on the basis of existing knowledge, both research- and application-oriented develop and apply independent generalized and specialized ideas on the methods and models in a research and application-oriented manner, - weigh up the correctness of their extended and, if necessary, independently modified knowledge, taking into account scientific-disciplinary (e.g. mathematics and statistics) and methodological considerations, and solve scientific and practical problems on this basis.
Students can specifically (in terms of content) ... - identify and assess the application potential of AI or ML in different and possibly unknown application contexts, - solve specific problems largely independently using Python. Students can generally ... - integrate new information into the existing knowledge network and/or further process and develop existing knowledge and thus acquire new knowledge independently, - apply their knowledge, understanding and problem-solving skills in new, unfamiliar and unpredictable situations that are related to their field of study in a broader or multidisciplinary context by integrating existing and new knowledge in complex contexts, - deal with a high degree of complexity and intricacy with regard to scientific and practical tasks, - making scientifically sound decisions, - designing research questions from a purely scientific point of view, selecting well-founded research methods and interpreting research results critically.
Students can generally ... - engage in discussions with representatives of different academic and non-academic fields of activity as well as on alternative, theoretically justifiable solutions to problems, - integrate participants into tasks in a goal-oriented manner, taking into account the respective group situation, - recognize potential for conflict in cooperation with others and reflect on this against the background of cross-situational conditions, - ensure the implementation of solution processes appropriate to the situation through constructive, conceptual action

Students can generally ...
- develop a professional self-image that is oriented towards goals and standards of professional action both in academia and in professional fields outside academia.
- justify their own professional actions with theoretical and methodological knowledge and reflect on alternative approaches.
- judge their own abilities, make autonomous use of relevant freedom of organization and decision-making and develop these further under guidance.
- recognize situation-appropriate and cross-situational framework conditions for professional action and reflect on decisions in an ethical and responsible manner.
- critically reflect on their professional actions in relation to social expectations and consequences and further develop their professional actions.

Content information	
Content	- Advanced topics in machine learning with a strong application focus - Application examples are mainly, but not exclusively, from the energy sector e.g. - Electricity demand forecasts - Energy generation forecasts for wind power plants - Electricity price forecasts for the spot market - Exploratory data analysis and pre-processing - Reading and analysing original literature on the topics covered - Course draws on previous knowledge at Bachelor level and deepens the content - Content is taught and applied using practical examples and projects
Literature	Literature will be announced during the course.

Teaching formats of the courses	
Teaching format	**SWS**
Labor	2
Lehrvortrag	2

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
AMLEA - Laborprüfung	Method of Examination: Laborprüfung Weighting: 0% wird angerechnet gem. § 11 Satz 2 PVO: Yes Graded: No Remark: Regular participation and collaboration
AMLEA - Präsentation	Method of Examination: Präsentation Duration: 30 Minutes Weighting: 0% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: No
AMLEA - Hausarbeit	Method of Examination: Hausarbeit Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	- interest in machine learning and neural networks - basic knowledge in machine learning recommended - conceptual and analytical skills - mathematical skills (linear algebra, analysis, calculus) - programming skills (e.g. Python) - interest to work with software libraries (e.g. Python)

En_CE - English for Civil Engineers

En_CE - English for Civil Engineers

General information	
Module Code	En_CE
Unique Identifier	EnglCivEng-01-BA-M
Module Leader(s)	Willson, Elena (elena.willson@haw-kiel.de) Wilson, Kirk (kirk.wilson@haw-kiel.de) Kruse, Katie (katie.kruse@haw-kiel.de)
Lecturer(s)	West, Rob (rob.west@haw-kiel.de) Willson, Elena (elena.willson@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.Eng. - BauIng - Bauingenieurwesen Module type: Wahlmodul Semester: 4, 6

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Die Studierenden können die Hauptinhalte komplexer Texte zu konkreten und abstrakten Themen im Bauwesenbereich verstehen und wiedergeben. Die Studierenden können die meisten Nachrichtensendungen und Reportagen im Fernsehen verstehen (Standardsprache). Die Studierenden können die zentralen Regeln der Grammatik auf einem C1-Niveau anwenden.
Die Studierenden können sich zu einem breiten fachlichen Themenspektrum im Bauwesenbereich klar und detailliert ausdrücken, einen Standpunkt zu einer aktuellen Frage erläutern und die Vor- und Nachteile verschiedener Möglichkeiten angeben. Die Studierenden können Artikel und Berichte über Probleme der Gegenwart und Herausforderungen im Bauwesenbereich lesen und verstehen, in denen die Schreibenden eine bestimmte Haltung oder einen bestimmten Standpunkt vertreten.
Die Studierenden können bei vertrauten Fachthemen auch komplexer Argumentation folgen. Die Studierenden können die persönliche Bedeutung von Ereignissen und Erfahrungen im Bauwesenbereich deutlich machen. Die Studierenden können klare und detaillierte Darstellungen zu vielen fachlichen Themen aus eigenen Interessengebieten geben. Die Studierenden können über eine Vielzahl von Fachthemen klare, detaillierte Texte verfassen.

Die Studierenden können sich so spontan und fließend verständigen, dass ein normales Gespräch mit einem Muttersprachler recht gut möglich ist. Die Studierenden können sich in vertrauten Arbeitssituationen aktiv an einer Diskussion beteiligen und eigene Ansichten begründen und verteidigen.

Content information	
Content	Fokus auf fachliche Sprachfähigkeiten auf dem C1 Niveau (GER) im Bereich Bauwesen: -- schriftlicher Ausdruck -- mündlicher Ausdruck -- Lese- und Hörverstehen -- Wortschatzarbeit
Literature	wird zum Kursanfang bekannt gegeben. Empfehlungen fürs Selbststudium: My Grammar Lab Advanced (ISBN: 1408299127)

Teaching formats of the courses	
Teaching format	**SWS**
Sprachkurs	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	Erfüllung der Anwesenheitspflicht gemäß § 52 Abs. 12 HSG.
En_CE - Präsentation	Method of Examination: Präsentation Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes Remark: Inkl. Fragen nach der Präsentation und eine schriftliche Ausarbeitung (500-600 Wörter) zur Präsentation

Miscellaneous	
Recommended Prerequisites	Teilnahme nur möglich nach einer Einstufung durch das ZSIK oder nach einem abgeschlossenen B2 Kurs.
Miscellaneous	Nach erfolgreichem Abschluss verfügt jeder/jede Teilnehmer/Teilnehmerin über ein breites Spektrum von Redemitteln, aus dem er/sie geeignete Formulierungen auswählen kann, um sich klar und angemessen über ein breites Spektrum allgemeiner, wissenschaftlicher, beruflicher Themen oder über Freizeitthemen zu äußern, ohne sich in dem, was er/sie sagen möchte, einschränken zu müssen gemäß der 5. Stufe des Gemeinsamen Europäischen Referenzrahmens (GER). http://www.europaeischer-referenzrahmen.de/ Online unterstützt.

En_ProfC - Effective and Creative Professional Communication

En_ProfC - Effective and Creative Professional Communication

General information	
Module Code	En_ProfC
Unique Identifier	ProfWritPort-01-BM-M
Module Leader(s)	Willson, Elena (elena.willson@haw-kiel.de)
Lecturer(s)	Minard, Nancy (nancy.minard@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Sommersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: B.A. - MMP - Multimedia Production Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: B.A. - ÖuU - Öffentlichkeitsarbeit und Unternehmenskommunikation Module type: Wahlmodul Semester: 3, 4, 5, 6, 7
Study Subject: M.A. - AK - Angewandte Kommunikationswissenschaft Module type: Wahlmodul Semester: 1, 2, 3
Study Subject: M.A. - MK - Medienkonzeption (SoSe 2018, V1) Module type: Wahlmodul Semester: 1, 2, 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Develop an awareness of different perspectives related to creativity, play, and communication. Explore ethical considerations in marketing, advertising, and professional practice. Gain a general understanding of how new technologies, including AI, can influence creative processes. Build familiarity with the principles underpinning effective public speaking and professional writing.
Participate actively in individual and group exercises to explore ideas and test creative approaches. Experiment with various methods to generate, refine, and communicate ideas. Apply creative thinking strategies in problem-solving tasks and collaborative projects. Use theoretical concepts to inform practical outputs, such as presentations, podcasts, or marketing materials.

Practice effective communication in group discussions, debates, and collaborative projects. Develop skills for conveying ideas clearly in both written and spoken formats. Engage in peer feedback and constructive dialogue to refine individual and group outputs. Collaborate on projects that require negotiation, idea-sharing, and collective problem-solving.
Reflect on the ethical responsibilities and professional standards of working with media, marketing, and creative content. Cultivate an awareness of personal strengths and areas for growth in creative, communicative, and professional contexts. Demonstrate professional habits such as preparation, critical thinking, and careful editing/proofreading.

Content information	
Content	Creative thinking and idea development Effective communication and presentation Professional writing and media use Practical exercises, projects, and discussions Reflection on ethical and professional issues
Literature	Materials and literature will be provided by the lecturer.

Teaching formats of the courses	
Teaching format	**SWS**
Seminar	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
En_ProfC - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes Remark: ,

Miscellaneous	
Miscellaneous	Detailed information on the assessment will be given in the first session.

MADS-AP - Application Project

MADS-AP - Application Project

General information	
Module Code	MADS-AP
Unique Identifier	ApplProj-01-MA-M
Module Leader(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de) Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de) Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	No
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - know how to organize data science projects. - know how to perform the relevant tasks in data science projects.
Students - are able to apply their knowledge in real-world data science projects.
Students - are able to work professionally with external customers - are able to successfully organize teamwork for data science projects. - are able to report and present team solutions for practical project tasks. - are able to leverage the individual skills of all team members.
Students - are able to work professionally in the field of data science. - are able to give and accept professional feedback to different topics of data science.

Content information	
Content	In general, the application project is carried out in teams and together with an external project partner. Topics are provided by the lecturers in collaboration with the external project partners. The application project requires independent and self-contained work in the teams to deepen the knowledge obtained from the data science lectures. The application project work typically includes: - Creation and assessment of methods according to standard research methodologies. - Execution of experiments and documentation. - Creation, implementation and documentation of tools and applications. - Regular progress reports and consultations with both project partners and lecturers - Presentation of results to project partners and participants of the study programme
Literature	Presentation slides Information by provided by project partner

Teaching formats of the courses	
Teaching format	**SWS**
Projekt	8

Workload	
Number of SWS	8 SWS
Credits	10,00 Credits
Contact hours	96 Hours
Self study	204 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-AP - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	It is strongly recommended to have heard the modules of the first semester of the Data Science program.
Miscellaneous	Important: Due to the nature of this module, some planning is required before-hand (at the end of the previous semester's lectures and before the lectures start in this semester).

MADS-BDT - Big Data Technologies

MADS-BDT - Big Data Technologies

General information	
Module Code	MADS-BDT
Unique Identifier	BigDataTech-01-MA-M
Module Leader(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - know the fundamentals of big data technologies. - know the basics of NoSQL databases and their system architectures. - know modern big data stacks and their ecosystems. - know how to implement stream processing applications.
Students - are able to apply big data technologies in practice. - are able to use NoSQL databases for real-world problems. - are able to use Spark and Kafka for stream processing.
Students - are able to successfully organize teamwork for big data technologies projects. - are able to report and present team solutions for practical project tasks. - are able to leverage the individual skills of all team members.
Students - are able to work professionally in the field of big data technologies. - are able to give and accept professional feedback to different topics of big data technologies. - are able to select relevant scientific literature about big data technologies.

Content information	
Content	- Introduction to Big Data Technologies - Big Data Architectures - Hadoop MapReduce and HDFS - Apache Hadoop Ecosystem - Key-Value and Columnar Databases - Document and Graph Databases - Apache SMACK Stack - Elastic ELK Stack - Data Stream Processing - Big Data Applications - Artificial Intelligence - Current topics in the field of Big Data Technologies
Literature	Presentation slides

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-BDT - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-C - Colloquium

MADS-C - Colloquium

General information	
Module Code	MADS-C
Unique Identifier	ColloqB-01-MA-M
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de) Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de) Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de) Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de) Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
The colloquium is an oral final exam, which focuses on the subject areas of the thesis. The students should present their final thesis as well as represent and defend the results.
Students - know how to present the results of an academic research project. - know how to discuss and defend academic research results.

Content information	
Content	The colloquium is an oral final exam, which focuses on the subject areas of the thesis. The students should present their final thesis as well as represent and defend the results.

Teaching formats of the courses	
Teaching format	**SWS**
Keine Präsenzzeit	0

Workload	
Number of SWS	0 SWS
Credits	5,00 Credits
Contact hours	0 Hours

Self study	150 Hours

Module Examination	
Examination prerequisites according to exam regulations	For admission to the final colloquium, all examinations of the compulsory modules must have been passed and the Master thesis must have been submitted.
MADS-C - Kolloquium	Method of Examination: Kolloquium Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-CC - Cloud Computing

MADS-CC - Cloud Computing

General information	
Module Code	MADS-CC
Unique Identifier	CloudCompA-01-MA-M
Module Leader(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Brede, Max (max.brede@haw-kiel.de) Krieg, Vincent (vincent.krieg@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 1

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - know the fundamentals of cloud computing. - know the basics of virtualization, containers and cluster management. - know modern cloud platforms and microservice architectures. - know how to implement web services and IT security.
Students - are able to apply cloud computing in practice. - are able to use cloud platforms and microservices for real-world problems. - are able to use Docker and Kubernetes for data science applications.
Students - are able to successfully organize teamwork for cloud computing projects. - are able to report and present team solutions for practical project tasks. - are able to leverage the individual skills of all team members.
Students - are able to work professionally in the field of cloud computing. - are able to give and accept professional feedback to different topics of cloud computing. - are able to select relevant scientific literature about cloud computing.

Content information	
Content	- Introduction to Cloud Computing - Cloud Architectures - Virtualization - Container and Cluster Management - Internet Technologies - Web Services - IT Security - Internet of Things - Public Cloud Service Providers - Current topics in the field of Cloud Computing
Literature	Presentation slides

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-CC - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-DL - Deep Learning

MADS-DL - Deep Learning

General information	
Module Code	MADS-DL
Unique Identifier	DeepLearnC-01-MA-M
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - the fundamentals of neural networks. - the most commonly used concepts of neural network based learning. - standard tools for deep learning.
Students are able to - setup deep learning experiments. - apply deep learning algorithms in practice. - use deep learning algorithms for real-world problems.
Students are able to - critically assess and compare the results of deep learning algorithms. - give and accept professional feedback to different topics of deep learning.
Students are able to - work professionally in the field of deep learning. - select relevant scientific literature about deep learning.

Content information	
Content	Introduction to - Artificial Intelligence - Neural Networks - Deep Learning - Computer Vision Concepts - Perceptrons - Multilayer Forward Networks - Neural Networks for Classification and Regression - Computer Vision and Convolutional Layers - Time Series and Recurrent Neural Networks - Transfer Learning Applications - Classification - Regression - Computer Vision - Time Series Forecasting
Literature	- Lecture Slides - Additional literature - Stevens, Antiga and Viehmann: Deep Learning with PyTorch. Manning (2020). Available online: https://www.manning.com/books/deep-learning-with-pytorch

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	No additional requirements
MADS-DL - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Basic Knowledge of Python Basic Knowledge of Machine Learning (particularly, the module MADS-ML)

MADS-DM - Data Management

MADS-DM - Data Management

General information	
Module Code	MADS-DM
Unique Identifier	DataMgmt-01-MA-M
Module Leader(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 1

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - know the fundamentals of data management. - know the basics of relational databases and SQL. - know modern data management concepts and architectures. - know how to implement data privacy and data security.
Students - are able to apply data management and data privacy in practice. - are able to use relational databases for real-world problems. - are able to use SQL for practical database programming.
Students - are able to successfully organize teamwork for data management projects. - are able to report and present team solutions for practical project tasks. - are able to leverage the individual skills of all team members.
Students - are able to work professionally in the field of data management. - are able to give and accept professional feedback to different topics of data management. - are able to select relevant scientific literature about data management.

Content information	
Content	- Introduction to Data Management - Data Modeling - Relational Databases - Database Language SQL - Transaction Processing with SQL - Complex Database Queries with SQL - NoSQL Databases and Data Streams - Data Warehouse and Data Lake - Metadata and Open Data - Data Privacy and Data Security - Data Strategy and Data Ethics - Current topics in the field of Data Management
Literature	Presentation slides

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-DM - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-DVVA - Data Visualization and Visual Analytics

MADS-DVVA - Data Visualization and Visual Analytics

General information	
Module Code	MADS-DVVA
Unique Identifier	DataVisVisAn-01-MA-M
Module Leader(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Lecturer(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 1

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - available visualization techniques and understand for which purpose they are most suitable, - tools and best practices to closely integrate visual analysis, documentation, and presentation, - programming frameworks for data visualization
Students are able to - use visualizations as a means to detect patterns in complex data, - design and develop expressive visualizations tailored to the specific purpose and recipient using programming languages
Students are able to - concisely present their approach and results in technical and functional terms - work successfully in teams on joint projects, leveraging and integrating the skills of all team members.
Students are able to - reflect on the strengths and weaknesses of visualization techniques, - give and receive constructive critique and advice and they adhere to principles for scientific communication.

Content information	
Content	Foundations of Data Visualization - Perception and visualization design - Visual storytelling - Interactive Dashboards Python for Data Visualization - Plotly - Matplotlib - Geopandas - Streamlit Applications - Comparing categories - Relationships - Time series - Geographic data - Interactive visualization
Literature	- Lecture Slides - Cole Nussbaumer Knaflic, Storytelling with Data: A Data Viszualization Guide for Business Professionals, 2015 - Jonathan Schwabish, Better Data Visualizations: A Guide for Scholars, Researchers, and Wonks, 2021 - Claus O. Wilke, Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures. O'Reilly, first edition, 2019, online available: https://serialmentor.com/dataviz.

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-DVVA - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Basic knowledge of Python.

MADS-EMDM - Advanced Topics of Data Mining

MADS-EMDM - Advanced Topics of Data Mining

General information	
Module Code	MADS-EMDM
Unique Identifier	AdvTopDataMi-01-MA-M
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Irregular
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Wahlmodul Semester: 2
Study Subject: M.Sc. - MCS - Computer Science (PO 2023, V1) Module type: Wahlmodul Semester: 1, 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - various typical tasks of data mining - various scenarios in which this methodology can be applied - different algorithms for solving such tasks, implementations, advantages and drawbacks
Students are able to - apply the discussed methodology to real-world problems - interpret their results, draw conclusions, consider limitations - learn about new methodology from literature and documentation
Students are able to - correctly interpret and communicate the approach and results both in technical and functional terms.
Students are able to - work professionally with standard data mining methodology.

Content information	
Content	Topics - Ranking Algorithms - Graph Algorithms - Descriptive Pattern Mining - Frequent Pattern Mining - Time Series Prediction Applications - Recommender Systems - Community Discovery - Association Rule Learning - Subgroup Discovery - Prediction and Analysis of Time Series
Literature	Lecture Slides + Exercises tba. during the lectures

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-EMDM - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Basic knowledge about data mining, s.a. - setting up machine learning experiments - evaluation of machine learning algorithms - usecases like clustering, regression, classification. Basic practical Python programming experience.

MADS-EMGAI - Generative AI

MADS-EMGAI - Generative AI

General information	
Module Code	MADS-EMGAI
Unique Identifier	GenAI-01-MA-M
Module Leader(s)	Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Brede, Max (max.brede@haw-kiel.de) Klick, Alwin (alwin.klick@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Wahlmodul Semester: 2
Study Subject: M.Sc. - MCS - Computer Science (PO 2023, V1) Module type: Wahlmodul Semester: 1, 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - know the fundamentals of generative AI systems. - know various modern applications of generative AI systems. - know the theoretical foundations and practical applications of generative AI systems.
Students - are able to explain and apply various open-source language models. - are able to implement and utilize agent systems and their functionalities. - are able to understand and use embeddings and vector stores for semantic search and recommendations. - are able to explain and practically apply different methods for image generation. - are able to fine-tune large language models (LLMs) and diffusion models for specific tasks.
Students - are able to successfully organize teamwork for generative AI projects. - are able to report and present team solutions for practical project tasks. - are able to interpret and communicate the approaches in technical and functional terms.
Students - are able to work professionally in the field of generative AI systems. - are able to give and accept professional feedback to different topics of generative AI systems. - are able to select relevant scientific literature about generative AI systems.

Content information	
Content	Open Source Language Models - Overview of model lists - Ollama - Generation of synthetic text as training sets Agent Systems - Llamaindex, LangChain & Haystack - Function calling - Data analysis Embeddings and Vector Stores - Semantic Search - Retrieval-augmented generation - Recommendations AI Image Generators - Generative Adversarial Networks (GANs) - Variational Autoencoders / Diffusion Models - Generative approaches for image dataset augmentation Fine-Tuning of LLMs and Diffusion Models - Examples: LoRA, QLoRA, MoRA
Literature	Presentation slides

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-EMGAI - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Basic knowledge about Deep Learning and Natural Language Processing. Basic practical experience in Python programming.

MADS-ML - Machine Learning

MADS-ML - Machine Learning

General information	
Module Code	MADS-ML
Unique Identifier	MachLearnB-01-MA-M
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Lecturer(s)	Dr. Conceicao, Pedro (pedro.conceicao@haw-kiel.de) Dr. Küstner, Josef (josef.kuestner@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 1

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - the fundamentals of machine learning. - the most commonly used machine learning algorithms. - standard tools for machine learning.
Students are able to - apply machine learning algorithms in practice - use machine learning algorithms for real-world problems. - setup machine learning experiments.
Students are able to - successfully organize teamwork for machine learning projects. - to report and present team solutions for practical project tasks. - critically assess and compare the results of machine learning algorithms.
Students are able to - work professionally in the field of machine learning. - give and accept professional feedback to different topics of machine learning. - select relevant scientific literature about machine learning.

Content information	
Content	Introduction to: - Machine Learning Experiments - Setup - Preparation - Evaluation - Comparisons - Machine Learning Approaches: - Regression Methods - K-nearest Neighbours - Tree-based Learning - Probabilistic Classification - Support Vector Machines - Ensemble Learning
Literature	Presentation slides Additional literature: - Raschka and Mirjalili: Python Machine Learning. Packt Publishing; second Edition (2017). - Harrington: Machine Learning in Action. Manning (2012). Available online: https://www.manning.com/books/machine-learning-in-action

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	No additional requirements
MADS-ML - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-MMS - Mathematics and Multivariate Statistics

MADS-MMS - Mathematics and Multivariate Statistics

General information	
Module Code	MADS-MMS
Unique Identifier	MathMultivar-01-MA-M
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)

Study Subject: M.Sc. - DS - Data Science
Module type: Pflichtmodul
Semester: 1

Qualification outcome

Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.

Students know
- fundamental statistical concepts and methods relevant for modern data science and understand for which type of tasks they are most suitable.
- the connection between the covered statistical methods and algorithms and their mathematics foundations.

Students are able to
- apply statistical methods to real-world problems.
- reflect on advantages and limitations of algorithms in practical terms.
- derive insights and build on the related scientific literature.

Students are able to
- correctly interpret and communicate the approach and results both in technical and functional terms.

Students are able to
- work professionally with standard data mining methodology.

Content information

Content	Statistics: - Clustering (partitioning, density-based, hierarchical) - Dimensionality Reduction Mathematics: - exponential functions - basic linear algebra and analytical geometry - similarity and distance measures

Literature	- Lecture Slides - Additional Literature: - Leskovec, Rajaraman and Ullman: Mining of Massive Datasets. Cambridge Univeristy Press; third edition. Available online: http://www.mmds.org/ - Boyd and Vandenberghe: Introduction to Applied Linear Algebra. Cambridge University Press. Available online: https://web.stanford.edu/~boyd/vmls/vmls.pdf - Raschka and Mirjalili: Python Machine Learning. Packt (2017). - Ester and Sander: Knowledge Discovery in Databases. Springer-Verlag Berlin Heidelberg (2000)

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-MMS - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-SMA - Social Media Analytics

MADS-SMA - Social Media Analytics

General information	
Module Code	MADS-SMA
Unique Identifier	SocialMedAna-01-MA-M
Module Leader(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Lecturer(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 2

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - the fundamentals of social media analytics - state-of-the-art concepts and technologies in the field of natural language processing and network analysis
Students are able - to apply state-of-the art algorithms in the field of NLP and network analysis to solve real-word problems - to evaluate the usefulness and quality of algorithms and results - to critically assess the social implications of algorithms and applications
Students are able - to report and present solutions for practical project tasks - to leverage the individual skills of all team members
Students - to work professionally in the field of social media analytics - to give and accept professional feedback to different topics of social media analytics - to identify and process relevant scientific literature

Content information	
Content	Course contents: 1. Handling Social Media Data 1.1 Data Acquistion: APIs and Web Scraping 1.2 Data Storage: JSON, Document databases, vector stores 2. Social Network Analysis 2.1 Network analysis and visualization 3. Natural Language Processing (NLP) 3.1 Classical NLP 3.1.1 Preprocessing and feature engineering for text data 3.1.2 Training supervised and unsupervised machine learning models for text data 3.1.3 Topic Modelling 3.2 Transformers in NLP 3.2.1 Embeddings 3.2.2 Transformers and Large Language Models 3.2.3 Transfer learning with Encoders 3.2.4 Generative Language Models 3.2.5 Retrieval Augmented Generation Example Applications: - Text classification: e.g. Sentiment Prediction, Hate Speech Detection - Token classification: e.g. Named Entity Recognition - Information extraction and text summarization
Literature	- Lecture Slides - Jurafsky, D. and Martin, J.H. (2024): Speech and Language Processing. An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition, available online: https://web.stanford.edu/~jurafsky/slp3/ - Sarkar, D. (2019): Text Analytics with Python

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-SMA - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Solid knowledge of Python Programming and Machine Learning

MADS-T - Thesis

MADS-T - Thesis

General information	
Module Code	MADS-T
Unique Identifier	
Module Leader(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de) Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de) Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de)
Lecturer(s)	Prof. Dr. Doerfel, Stephan (stephan.doerfel@haw-kiel.de) Prof. Dr. Prange, Michael (michael.prange@haw-kiel.de) Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 3

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students - are able to translate a practically or academically relevant data science problem into a theoretical research framework. - can familiarize themselves with the relevant research publications and possibly identify research gaps and are capable to provide a theoretical overview summarizing the current state of research. - can identify and select the appropriate research methodology to address the chosen research question.
Students - are able to professionally prepare and execute a project on their own, either in an academic or corporate environment, delivering the results in time. - are able to apply their competencies to analyze, structure and solve complex problems, building on state of the art technologies and methods. - are able to prepare a research paper in compliance with norms for academic and scholarly expression and for publication in the public domain.

Students - are capable to organize themselves individually in an effective manner to set the right priorities and manage their resources to successfully meet the requested academic requirements. - are capable to present and defend their research project in front of a qualified academic audience. - respond to criticism in an open self-reflective constructive manner.
Students - can apply the academic rules of conduct expected by a researcher to achieve an objective, valid, reliable and ethically justifiable research outcome. - can conduct themselves in a professional and respectful manner in particular with respect to the time made available by their supervisor by being well prepared for meetings and request for appointments in writing with the questions and or issues to be addressed clearly laid out in advance.

Content information	
Content	In the Master Thesis, the candidate should demonstrate that he or she is able to independently carry out a research project in any of the disciplines offered by the Data Science Master program such as Machine Learning, Deep Learning, Data Management, Cloud Computing, Big Data Technologies, Data Visualization, Natural Language Processing, or some related field. The Master Thesis can be either an academic research project or a practical data science project in a corporate environment. The topic of the thesis is determined in consultation with the candidate and the supervising lecturer.

Teaching formats of the courses	
Teaching format	**SWS**
Keine Präsenzzeit	0

Workload	
Number of SWS	0 SWS
Credits	25,00 Credits
Contact hours	0 Hours
Self study	750 Hours

Module Examination	
Examination prerequisites according to exam regulations	For admission to the final thesis, all examinations of the compulsory modules must have been passed.
MADS-T - Abschlussarbeit (Thesis)	Method of Examination: Abschlussarbeit (Thesis) Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

MADS-TPDS - Tools and Programming Languages for Data Science

MADS-TPDS - Tools and Programming Languages for Data Science

General information	
Module Code	MADS-TPDS
Unique Identifier	ToolsProgLan-01-MA-M
Module Leader(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Lecturer(s)	Prof. Dr. Schwörer, Tillmann (tillmann.schwoerer@haw-kiel.de)
Offered in Semester	Sommersemester 2026
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel jedes Semester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	No

Curricular relevance (according to examination regulations)
Study Subject: M.Sc. - DS - Data Science Module type: Pflichtmodul Semester: 1

Qualification outcome
Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.
Students know - the foundations of the programming language Python - standard workflow and corresponding programming processes in data science projects - tools and practices that ensure reproducibility of results and reusability of code
Students are able to - acquire, process, clean, analyse and visualize data - prepare data for downstream data science tasks - document and present their results and approach
Students are able to - communicate approach and results to technical and non-technical audiences - work in teams on programming tasks using version control systems - give and receive critique in a professional manner
Students are able to - leverage relevant literature - give and accept professional feedback

Content information	
Content	1. NumPy: Basic data handling with Numpy arrays 2. Pandas - Data cleaning - Exploratory data analysis 3. Data Input/Output - APIs - SQL databases - Web scraping 4. Version Control with Git and GitHub 5. Advanced Python
Literature	- Lecture Materials - VanderPlas: A Whirlwind Tour of Python. O'Reilly, first edition. Available online: https://jakevdp.github.io/WhirlwindTourOfPython/ - VanderPlas: Python Data Science Handbook. O'Reilly, first edition. Available online: https://jakevdp.github.io/PythonDataScienceHandbook. - McKinney: Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython. O'Reilly, second edition.

Teaching formats of the courses	
Teaching format	**SWS**
Lehrvortrag + Übung	4

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MADS-TPDS - Portfolioprüfung	Method of Examination: Portfolioprüfung Weighting: 100% wird angerechnet gem. § 11 Satz 2 PVO: No Graded: Yes

Miscellaneous	
Recommended Prerequisites	Basic Python programming skills are recommended. Students with litte or no Python programming skills are strongly advised to participate at the Pre-Course Programming, taking place in the week prior to the start of the regular programming course.