HELMUT SCHMIDT
UNIVERSITÄT
Universität der Bundeswehr Hamburg

Module Handbook
(June 2024)

Master's Programme

„Digital Governance and Administration"
(DiGA)

of the Faculty of Economics and Social Sciences at Helmut-Schmidt-Universität/
Universität der Bundeswehr Hamburg

Module Overview

Number	Module name	Tr	Type	TWS	LP	S	Examination	ZV
Compulsory field (90 ECTS-LP)								
WS21D01	Fundamentals of Organisation & Management	1	P	4	6	E	K(120) o. mP	-
WS21D02	Research Methods	1	P	4	6	E	mP o. [Es+R]	rT
WS21D03	Fundamentals of Data Analysis	1	P	4	6	E	K(120) o. mP	-
WS21D04	Public Administration / Management in a Digital World	1	P	4	6	E	R o. Lernp o. Es	-
WS22D05	Strategic Thinking / Decision Making in a Digital World	2	P	4	6	E	K(120) o. mP	-
WS22D06	Artificial Intelligence in the Social Sciences	2	P	4	6	E	K(120) o. mP o. PL	-
WS22D07	Open Data & Digital State Capacity	2	P	4	6	E	R o. Lernp o. Es	-
WS23D08	Service Design & Digital Business Models	3	P	4	6	E	K(120) o. mP	-
WS23D09	Project Management	3	P	4	6	E	R o. Lernp o. Es	-
ISA	Interdisciplinary Studies, one module from subject area III	3.o.4	P		5	E/D	§ 12 (5) APO	
WS24D10	Seminar	4	P	2	7	E/D	[HA+R]	rT
WS25D11	Thesis & Colloquium	5	P		24	E/D	HA+R	WS24 D10
Compulsory elective field (30 ECTS-LP) (The actual offer of compulsory elective modules may be different in each academic year.)								
Economics and social sciences modules:								
WS22D21	Designing and Controlling Digital Organisations	2	WP	4	6	E/D	K(120) o. mP	-
WS16P15*	Political Organisations and Digitalisation	2	WP	3	6	D	K(120) o. [Es+R]	rT
WS23D22	Digital Public Services	3	WP	4	6	E/D	R o. Lernp o. Es	-
WS23D23	Digital Leadership / Digital Work	3	WP	4	6	E/D	K(120) o. mP	-
WS23D24	Security-Policy Effects of Digitalisation	3	WP	4	6	E/D	K(120) o. mP	-
WS24D25	Technology & Innovation Management	4	WP	4	6	E/D	K(120) o. mP	-
WS24D26	Organisation Theory & Network Management	4	WP	4	6	E/D	[HA+R] + K(60) Ratio 1:1	-
WS24D27	Innovation in Public Administration / Managing Public Sector Reform in the Digital Era	4	WP	4	6	E/D	R o. Lernp o. Es	-
WS24D28	Risk and Crisis Management in the Public Sector	4	WP	4	6	E/D	K(120) o. mP	-
WS24D29	Law in the Digital Age	4	WP	4	6	E/D	K(60) o. HA o. mP + K(60) o. HA o. mP, ratio 1:1	-
WS24D30	Theory and Practice of Digital Democracies	4.5	WP	4	6	D	mP	rT
Computer science and quantitative modules:								
WS22D41	Large-Scale Data Management & Big Data Analytics	2	WP	4	6	E/D	mP o. PL	-
WS22D42	Algorithmic Problem Solving and Programming	2	WP	4	6	E/D	PL	-
WS23D43	Human-Machine Collaboration	3	WP	4	6	E/D	mP o. PL o. [HA+KV]	-
WS23D44	Process Intelligence and Automation	3	WP	4	6	E/D	K(120) o. mP o. PL	-
WS23D45	Visualisation of Data & Augmented Reality	3	WP	4	6	E/D	mP o. PL	-
WS23M18	Statistical Computing	3	WP	4	6	D	K (120) o. mP o. [HA+KV]	-
WS23M12	Game and Decision Theory	3	WP	4	6	D	K(120) o. mP	-
WS24D46	Applied Data Analysis Project	4	WP	4	6	E/D	PL	rT
WS24D47	High Performance Computing Project	4	WP	4	6	E/D	PL	rT
WS24D61	Advanced / Current Topics	4	WP	4	6	E/D	mP o. [HA+KV]	-

120

Abbreviations:

Tr	Trimester (subject-related trimester, beginning with winter trimester = 1st trimester)
TWS	Trimester hours per week
LP	Credits (ECTS)
*	Not possible for students with a Bachelor's degree in political science.
S	Language
E	English
E/D	English or German (depending on the requirements, preferably English)
ZV	Admission requirement
P	Compulsory
V	Lecture
Ü	Exercise

WP	Compulsory elective module
o.	or
K(120)	Written examination, 120 minutes
mP	oral examination
HA	Home assignment
R	Presentation
Lernp	Learning portfolio
Es	Essay
KV	Short presentation
PL	Project paper
AA	Final thesis in accordance with Section 14
rT	Regular attendance
HT/WT/FT	Autumn / Winter / Spring Trimester

Contents

Compulsory Modules

Module number	Module name	Credit points (ECTS-LP)
WS21D01	**Fundamentals of Organisation & Management**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt)	heimstaedt@hsu-hh.de 040-6541-4563

Module description

1. Learning outcomes

This module provides a comprehensive overview of fundamental theories on the organisation and management of companies. It deals with key concepts such as organisational structure, culture and behaviour as well as management functions and processes. In this module, students learn about various explanations for the existence and functioning of organisations and are able to understand and assess the differences between a primarily economic and a more behavioural perspective. Using case studies, students learn to apply basic organisational and management theories to the practical challenges of digital transformation.

2. Contents

- Basic organisational and management theories
- Key concepts of organisation and management
- Selected current management tools
- Case studies on managing the digital transformation of organisations in the public and private sectors

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Fundamentals of Organisation & Management	V	2	6	P	WT
Fundamentals of Organisation & Management	Ü	2		P	WT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

6. Usability

Compulsory module in the DiGA study programme (1st trimester).

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS21D02	**Research Methods**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	All professorships more closely involved in the program, especially the professorships: Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt) Hybrid Intelligence (Prof. Dr. R. Büttner) Public Administration and Digital Government (Prof. Dr. S. Veit)	heimstaedt@hsu-hh.de 040-6541-4563 buettner@hsu-hh.de veit@hsu-hh.de 040-6541-4552

Module description

1. Learning outcomes

The students
- know general concepts, categories and approaches in the philosophy of science;
- know the research methods commonly used in the context of the Master's programme;
- can apply selected elements of research methods to case studies;
- can situate research methods within the epistemological and scientific discourse;
- thus receive in-depth competencies for independent scientific work.

2. Contents

After an introduction to the basic principles and paradigms of the philosophy of science, the research methods central to the respective disciplines in the context of the programme are explored in depth and reflected upon in the light of case studies.

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Research Methods	V	2	6	P	WT
Research Methods	Ü	2		P	WT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements				
None				

6. Usability				
Compulsory module in the DiGA study programme (1st trimester).				

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up, case studies	12	7	84	
Exam preparation or creation essay with presentation			48	
Total			**180**	**6**

8. Examination and grading of the module

Oral examination or essay + presentation. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO). Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS21D03	**Fundamentals of Data Analysis**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Hybrid Intelligence (Prof. Dr. R. Büttner) Statistics and Data Science (Prof. Dr. J. Gertheiss)	buettner@hsu-hh.de jan.gertheiss@hsu-hh.de 040-6541-2985

Module description

1. Learning outcomes

The students
- know the conceptual differences between descriptive, exploratory and inferential statistical methods of data analysis;
- know the basic differences between supervised and unsupervised learning;
- can identify the data analytic methods appropriate to answer selected/ideal-typical research questions;
- can practically perform descriptive analyses and simple data visualisations using suitable software and interpret the results;
- can describe selected methods of supervised and unsupervised learning, implement them practically using suitable software and interpret the results;
- can discuss advantages, disadvantages and limitations of the methods considered.

2. Contents

- Descriptive data analyses
- Dimensionality reduction methods (e.g. principal component analysis, multidimensional scaling)
- Basic principles of probability theory and inferential statistics
- Simple models and methods of supervised learning (e.g., linear and logistic regression, simple neural networks)
- Basics and selected algorithms of cluster analysis

3. Module components					
Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Fundamentals of Data Analysis	V	2	6	P	WT
Fundamentals of Data Analysis	Ü	2		P	WT

4. Forms of teaching and learning
Lecture and exercise (small group)

5. Admission requirements
None

6. Usability
Compulsory module in the DiGA study programme (1st trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS21D04	**Public Administration / Management in a Digital World**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Public Administration and Digital Government (Prof. Dr. S. Veit)	veit@hsu-hh.de 040-6541-4552

Module description

1. Learning outcomes

The students

- have an in-depth understanding of the impact of digital transformation on public administration and policy-making;
- have become familiar with the specific challenges of digitalisation of public administration and have an understanding of how to contextualise them and manage these challenges in an organisational context;
- have intensively thought about/discussed controversial and unresolved issues related to the role of the state in the digital transformation.

2. Contents

- Overview of current and future trends in digital administration
- Examination of the challenges and consequences of the digitalisation of public administration
- Examination of the interplay between various state and non-state actors in the digital transformation of public administration
- Analysis of the impact of digital transformation on policy development and the role of public administration in political decision-making

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Public Administration / Management in a Digital World	V	2		P	WT
Public Administration / Management in a Digital World	Ü	2	6	P	WT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

6. Usability				
Compulsory module in the DiGA study programme (1st trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	6	72	
Audit performance			60	
Total			**180**	**6**

8. Examination and grading of the module

Presentation or learning portfolio or essay. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS22D05	**Strategic Thinking / Decision Making in a Digital World**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt)	heimstaedt@hsu-hh.de 040-6541-4563

Module description

1. Learning outcomes

Online Access Act, General Data Protection Regulation, digital sovereignty: managers in the public sector are currently facing a multitude of challenges. In order to fulfil the purpose of the organisation in the long term, they must be able to respond to these challenges not only situationally, but also strategically. In this module, students learn to make strategic decisions as future leaders in the public sector in the context of digital transformation. This learning objective is achieved through a combination of lecture and case study exercise. In the lecture, students learn about different schools of thought in strategy research, principles of digital organisation and forms of digital strategy work. In the case study exercise, students apply the concepts and theories they have learnt to specific practical cases from the public sector.

2. Contents

- Basic concepts of strategic management
- Basic theories of strategic decision-making
- Strategic decisions in the context of (semi-)automatic decision-making processes
- Design of strategic processes
- IT-based design of planning and control systems
- Practitioners, practices and praxis of strategy work in the context of big data and machine learning

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Strategic Thinking / Decision Making in a Digital World	V	2	6	P	FT
Strategic Thinking / Decision Making in a Digital World	Ü	2		P	FT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements				
None				

6. Usability				
Compulsory module in the DiGA study programme (2nd trimester).				

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS22D06	**Artificial Intelligence in the Social Sciences**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

The students
- are familiar with basic methods and algorithms of artificial intelligence (AI) and machine learning (ML) and can describe how they work;
- can implement them practically on the computer, at least in simplified settings;
- can describe and discuss special procedures and their results in selected social science applications;
- can also discuss issues and implications of artificial intelligence that go beyond purely technical topics, in particular also ethical aspects.

2. Contents

- Overview and delineation/distinction of "strong" and "weak" AI
- Basic artificial intelligence and machine learning methods and algorithms (e.g., various types of neural networks, deep learning, support vector machines, decision trees, and related methods)
- Methods for specific applications, esp. text mining; generative language models; AI/ML in, for, and by social networks
- Selected applications/case studies and broader issues, e.g., changing work environments through AI (e.g., as a result of Industry 4.0), AI in the care sector, AI and cybersecurity, autonomous AI-based weapon systems, fairness and bias/discrimination in machine learning, or the like.

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Artificial Intelligence in the Social Sciences	V	2	6	P	FT
Artificial Intelligence in the Social Sciences	Ü	2		P	FT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements				
None				

6. Usability				
Compulsory module in the DiGA study programme (2nd trimester).				

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture and exercise	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	6	72	
Exam preparation and examination or project performance			60	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam or project performance. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS22D07	**Open Data & Digital State Capacity**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Public Administration and Digital Government (Prof. Dr. S. Veit) Public Administration and Public Policy (Prof. Dr. T. Klenk)	veit@hsu-hh.de 040-6541-4552 klenkt@hsu-hh.de 040-6541-3522

Module description

1. Learning outcomes
The students
- have an understanding of the opportunities and obstacles associated with the development of digital state capacities at systemic, organisational and individual levels;
- have developed approaches to address such problems, in particular through systematic analyses to overcome capability traps.
- have developed management, leadership and judgement skills required to assess, address and lead these challenges in a day-to-day organisational context

2. Contents
- Theoretical models for understanding capacity/capacity development at the systemic, organisational and individual level
- State capacity development in the digital age (What are the conditions for better adaptability in terms of digital capacity building? What are the intended and unintended consequences of the newly introduced digital tools? What do we know about capability traps? How do they evolve?)
- Core competences for the public service/public administration with a special focus on the digital age
- Challenges of using open data in public administration and politics
- Ethical issues of using digital applications in public administration and political decision-making, especially AI

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Open Data & Digital State Capacity	V	2		P	FT
Open Data & Digital State Capacity	Ü	2	6	P	FT

4. Forms of teaching and learning				
Lecture and exercise (small group)				

5. Admission requirements				
None				

6. Usability				
Compulsory module in the DiGA study programme (2nd trimester).				

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	6	72	
Audit performance			60	
Total			**180**	**6**

8. Examination and grading of the module

Presentation or learning portfolio or essay. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS23D08	**Service Design & Digital Business Models**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt)	heimstaedt@hsu-hh.de 040-6541-4563

Module description

1. Learning outcomes
The digital transformation demands flexible adaptation of the services of private and public companies to the changing requirements of the state, the economy and society. Against this background, students will become familiar with corresponding issues. They will learn approaches for the systematic analysis, design and implementation of IT-supported business models, digital platforms and interactive or interorganisational value creation systems. Practical case studies are used to deepen corresponding competencies and reflect on them in the context of theoretical explanatory patterns.

2. Contents
- Fundamentals of (digital) service system - Business model engineering and digital business models - Service systems engineering – Theories and methods for the design and implementation of interactive IT-based value creation systems - Digital service ecosystems and service architectures - Digital platforms - Case studies

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Service Design & Digital Business Models	V	2		P	HT
Service Design & Digital Business Models	Ü	2	6	P	HT

4. Forms of teaching and learning
Lecture and exercise (small group)

5. Admission requirements
None

6. Usability				
Compulsory module in the DiGA study programme (3rd trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS23D09	**Project Management**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Public Administration and Management (Prof. Dr. C. Schaefer)	christina.schaefer @hsu-hh.de 040-6541-3039

Module description

1. Learning outcomes

The students
- have addressed implementation challenges and practical issues related to transformation and innovation processes in the public sector;
- are sensitised to the demands this places on the successful management of transformation and innovation projects - in particular, managing complex stakeholder and policy environments and dealing with a wide range of technical, legal and organisational aspects that go beyond the traditional project management toolkit;
- have an overview of relevant methods and tools and have gained practical experience based on current case studies (transformation and innovation projects).

2. Contents

- Provide an understanding of the complex mix of project management, process and idea design, policy planning, and strategy that successful management of transformation and innovation processes in the public sector requires, going beyond the traditional project management toolkit
- Discussion of the challenges and approaches that arise in the design and management of transformation and innovation projects, and presentation of important methodological concepts and tools
- Gaining practical experience with the relevant methods and tools on the basis of current case studies (transformation and innovation projects)

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Project Management	V	2	6	P	HT
Project Management	Ü	2		P	HT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements				
None				

6. Usability				
Compulsory module in the DiGA study programme (3rd trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	6	72	
Exam preparation and examination			60	
Total			**180**	**6**

8. Examination and grading of the module
Presentation or learning portfolio or essay. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is generally conducted in English.

Module number	Module name	Credit points (ECTS-LP)
WS24D10	**Seminar**	**7**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	All professorships more closely involved in the programme, such as Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt) Hybrid Intelligence (Prof. Dr. R. Büttner) Public Administration (Prof. Dr. S. Veit; Prof. T. Klenk; Prof. C. Schaefer)	heimstaedt@hsu-hh.de 040-6541-4563 buettner@hsu-hh.de veit@hsu-hh.de 040-6541-4552 tanja.klenk@hsu-hh.de 040-6541-2801 christina.schaefer@hsu-hh.de 040-6541-3039

Module description

1. Learning outcomes
The seminar will deepen selected thematic focal points of the study programme. The aim of the seminar is to enable students to write their Master´s thesis, but also to motivate and enable them to carry out independent scientific research beyond the Master's degree. The students also acquire interdisciplinary key competencies through independent work on a topic and through presentation and discussion.

2. Contents
- Introduction to basic approaches to scientific work and scientific ethos - Working on a selected topic within a specific subject area - Writing the term paper - Final presentations and discussion

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Seminar	S	2	7	P	WT

4. Forms of teaching and learning
In the course, students will prepare papers based on the basic knowledge acquired in their previous studies. The presentation of the topics is to be supported by a suitable use of media.

5. Admission requirements
None

6. Usability				
Compulsory module in the DiGA study programme (4th trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Seminar participation	12	2	24	
Preparation of the term paper			150	
Presentation preparation			36	
Total			**210**	**7**

8. Examination and grading of the module
The performance achieved in the term paper and presentation will be taken into account equally in the assessment. Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
Due to the didactic concept, the number of participants in seminars is generally limited to 12.

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in English and/or German.

Module number	Module name	Credit points (ECTS-LP)
WS25D11	**Thesis & Colloquium**	**24**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Compulsory	Respective examiner(s)	

Module description

1. Learning outcomes

The final thesis in the Master´s programme is a module achievement in which the student is supposed to show that he or she is able to work on a problem independently according to scientific methods within the given time limit. Since the Master's degree certifies the students' knowledge and skills at a high scientific level, special learning outcomes of the Master's thesis are

- the systematic search and processing of international literature on the current state of research of the topic to be dealt with,
- based on this, the presentation and application of sophisticated theories and models for the scientific analysis of the problem,
- if necessary, an independent investigation, as well as its evaluation and
- derived from this, a well-founded development of new perspectives on the subject.

After successfully writing the thesis, the graduate additionally demonstrates this level of qualification in a thesis colloquium, in which he/she presents, explains, and, if necessary, defends his/her work against criticism.

2. Contents

The specific content depends on the topic of the thesis according to the choice of the supervising professor.

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Creating the master thesis	Thesis	-	20	P	FT
Colloquium	Coll.	4	4	P	WT/FT

4. Forms of teaching and learning

Independent scientific work under intensive supervision/advice with accompanying presentations on the topic or the work and with final presentation and disputation of the research results in the examination colloquium.

5. Admission requirements

Successfully completed module "Seminar"

6. Usability
Final required course work in the DiGA master´s programme (5th trimester).

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Conception / preparation for the topic assignment	3	20	60	
Independent processing of the topic	12	45	540	
Preparation and execution of presentations during the preparation of the work as well as for the presentation and defence of the results			120	
Total			**720**	**24**

8. Examination and grading of the module
The evaluation of this module results on the one hand from the Master's thesis, which is graded by two reviewers, and on the other hand from the graded colloquium. Details of the assessment can be found in the study and examination regulations.

9. Duration of the module
One trimester

10. Number of participants
Unlimited. However, following the concept of intensive academic supervision, the number of theses supervised per professorship is limited by the capacities of the professorship.

11. Registration
Campus Management System

12. Literature references, Lecture notes
Literature references will be given individually depending on the topic.

13. Further information
The module is conducted in English and/or German.

Elective Modules

Module number	Module name	Credit points (ECTS-LP)
WS22D21	**Designing and Controlling Digital Organisations**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt)	heimstaedt@hsu-hh.de 040-6541-4563

Module description

1. Learning outcomes

Students understand problems and solution approaches to practical questions of organisation and controlling in institutions increasingly shaped by digitalisation. This includes both design/decision-oriented approaches and methods, as well as behavioural science aspects in connection with figures and digital management tools, up to "control at a distance" in the context of digital technologies.

2. Contents

- Organisational tasks with special consideration of digital technologies as drivers and enablers
- Design/decision-oriented organisational approaches and instruments
- Behavioural aspects
- "Control at a distance"
- Sovereign and secure use of digital technologies

3. Module components					
Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Designing and Controlling Digital Organisations	V	2	6	WP	FT
Designing and Controlling Digital Organisations	Ü	2		WP	FT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

6. Usability

Elective module in the elective area of economics/social sciences in the DiGA study programme (2nd trimester).

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS16P15	**Political Organisations and Digitalisation**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Professor for Sociology, especially Sociology of Organizations (Prof. Dr. C. Besio) Political Science, in particular Political Theory (Prof. Dr. G. S. Schaal)	cristina.besio@hsu-hh.de gschaal@hsu-hh.de

Module description

1. Learning outcomes

The module provides theoretical and empirical insights from a sociological and political science perspective on how politics and political organizations are changed by the introduction of new digital technologies and how they, as powerful actors, help to shape the application of these technologies.

Students learn what digitalization means in the political field, how it can be understood theoretically, and what opportunities and risks it entails. Aspects such as networking, decentralization, automation of decisions, etc. are covered.

2. Contents

- Current theories on the digitalisation of society
- Consequences of digitalisation for political organisations
- Change in parties, parliaments, and administrations (aspects such as structures, decision-making processes, forms of communication and power relations) through digitalisation
- Loss and increase in relevance of organisations (with expertise, for example, in algorithms for analysing big data in the political sphere)
- Big Data
- New forms of surveillance, participation, political communication
- Consideration of aspects of social inequality, e.g., economic stratification, ethnicity or gender, which are caused by digitalisation

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Political Organisations in the Context of Digitalisation	V	2	6	WP	FT

Politics and Digitalisation	S	1		WP	FT

4. Forms of teaching and learning

Lecture: lecture by the teacher; discussion of the lecture content and questions from the students.

Seminar: reading of the given texts; presentations and short impulses prepared by the students for the given reading; discussion of the reading for in-depth understanding; group work.

5. Admission requirements

None

6. Usability

Compulsory module in the Bachelor´s programme in political science; elective module in the economics/social science elective in the DiGA study programme (2nd trimester), cannot be taken there for students with a Bachelor´s degree in political science.

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture "Political Organisations in the Context of Digitalisation"	12	2	24	
Pre- and postprocessing			36	
Seminar "Politics and Digitalisation"	12	1	12	
Pre- and postprocessing			42	
Exam preparation			66	
Total			**180**	**6**

8. Examination and grading of the module

Examination: Written examination (120 minutes) or a graded (digital) presentation plus essay (5-7 pages) (to be assessed as an overall performance; no separate pass requirement). The type of examination to be used is determined by the examiner at the beginning of the trimester (according to § 11 para. 3 APO). Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

Lecture: no restriction; seminar: max. 25 participants

11. Registration

Campus Management System

12. Literature references, Lecture notes

- Stalder, Felix (2016): Kultur der Digitalität. Berlin: Suhrkamp.
- Reckwitz, Andreas (2017): Die Gesellschaft der Singularitäten. Zum Strukturwandel der Moderne. Berlin: Suhrkamp.
- Seyfert, Robert/Roberge, Jonathan (Eds.) (2016): Algorithmic Cultures. Essays on Meaning, Performance and New Technologies. London: Routledge.

- Bauman, Zygmunt/Lyon, David (2013): Liquid Surveillance. A Conversation. Cambridge: Polity Press.
- Kitchin, Rob (2014): The Data Revolution. Big Data, Open Data, Data Infrastructures and their Consequences. Los Angeles: Sage.

13. Further information

The module is conducted in German.

Module number	Module name	Credit points (ECTS-LP)
WS23D22	**Digital Public Services**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Public Administration and Digital Government (Prof. Dr. S. Veit)	veit@hsu-hh.de 040-6541-4552

Module description

1. Learning outcomes
The students

- learn to contextualise the concept of services of general interest from a political science and historical perspective
- reflect requirements for services of general interest in the 21st century
- familiarise themselves with different design alternatives for the digital provision of public services
- reflect on obstacles and barriers in the implementation of digital services of general interest

2. Contents

- Political science, legal and historical perspectives on 'services of general interest'
- Design fields of digital services of general interest: physical infrastructure, new public services based on the digital infrastructure, and digital content
- Status-quo and prospects of digital services of general interest in Germany and in international comparison
- Challenges in the further development of digital services of general interest

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Digital Public Services	S	4	6	WP	HT

4. Forms of teaching and learning
Seminar

5. Admission requirements
None

6. Usability
Elective module in the elective area of economics/social sciences in the DiGA study programme (3rd trimester).

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Seminar	12	4	48	
Preparation and follow-up of the courses	12	8	72	
Exam preparation/exam			60	
Total			**180**	**6**

8. Examination and grading of the module

Presentation or learning portfolio or essay. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23D23	**Digital Leadership / Digital Work**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt) Business Administration, in particular Leadership and Labor Relations (Prof. Dr. W. Matiaske)	heimstaedt@hsu-hh.de 040-6541-4563 matiaske@hsu-hh.de 040-6541-3800

Module description

1. Learning outcomes
Students learn about tasks and approaches to leadership in companies and organisations. This is deepened in selected fields, taking digitally supported forms into account. One focus is on the consideration of leadership for a successful digital transformation. Students will also gain an overview of the central tasks and instruments of corporate human resources management in the age of digitalisation.

2. Contents
- Fundamentals of leadership in companies and organisations - Leadership tasks for digital transformation - Digital and agile forms of leadership and work - Tasks, methods and organisational theoretical basics of leadership and human resource management - Fields of action and methods of human resources work, taking digitalisation into account - Legal aspects of digital forms of work and leadership with special consideration of labour law

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Digital Leadership / Digital Work	V	2	6	WP	HT
Digital Leadership / Digital Work	Ü	2		WP	HT

4. Forms of teaching and learning
Lecture and exercise (small group)

5. Admission requirements
None

6. Usability
Elective module in the elective area of economics/social sciences in the DiGA study programme (3rd trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23D24	**Security-Policy Effects of Digitalisation**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Political Science, in particular Political Theory (Prof. Dr. G.S. Schaal)	gschaal@hsu-hh.de

Module description

1. Learning outcomes

Digitalisation processes result in many security policy challenges for different actors (including the state, military, economy and civil society). These include disinformation campaigns and information wars (with the aim of destabilising states), hacker attacks on critical infrastructure, hacker attacks on the Internet of Things and the increasing dependence on monopoly providers in cloud computing. Finding security policy solutions is challenging, among other things because *new* forms of governance need to be implemented and the acceptance of security policy governance in this area (for citizens but also for economic actors) is (still) critical. The module describes the security policy challenges, analyses options for improving security in the area of tension between resilience and resistance and investigates future developments in this field.

The students

- know the security policy opportunities and challenges resulting from digitalisation for different institutions and actors (state, military, economy, civil society) (e.g. disinformation, information);
- are familiar with current approaches to security governance (including cybersecurity governance);
- know the potential of open-source data for security-relevant evaluations/assessments/decisions;
- know the necessity of the theoretical/conceptual/cultural foundation and contextualization of open source intelligence;
- know the legal basis for the use of open-source intelligence data from a comparative perspective.

2. Contents

- Theoretical and conceptual foundations of security policy analyses
- Security governance
- Conceptual foundations for the use of open source intelligence
- Legal framework for the use of open source for intelligence
- Current political and security policy debates on the use of open source

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Security challenges of digitalisation	V	2	6	WP	HT
Security Policy Challenges	S	2		WP	HT

4. Forms of teaching and learning

Lecture (small group), Seminar (small group)

5. Admission requirements

None

6. Usability

Elective module in the elective area of economics/social sciences in the DiGA study programme (3rd trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Preparation and wrap-up of the lecture	12	4	48	
Seminar	12	2	24	
Preparation and follow-up of the seminar	12	4	48	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

Written examination (120 minutes) or oral examination. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

Akhgar, Babak et al. (eds.) (2017): Open Source Intelligence Investigation. From Strategy to Implementation. Springer.

Yusif, Salifu / Hafeez-Baig, Abdul (2021): A Conceptual Model for Cybersecurity Governance. Journal of Applied Security Research, 16(4), 490-513.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D25	**Technology & Innovation Management**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt)	heimstaedt@hsu-hh.de 040-6541-4563
	Business Administration, in particular Technology and Innovation Management (Prof. Dr. H. Koller)	koller@hsu-hh.de 040-6541-2580

Module description

1. Learning outcomes

Students will acquire knowledge of the management of technology-oriented enterprises – both private and public – and networks. This includes the development and concretisation of a technology strategy taking into account digitalisation, the management of those parts of the company that deal with the development of new technologies, and the design of innovation processes. Upon completion of the module, students should be able to develop technology-oriented strategies for both private and public enterprises and design structures and processes to implement these strategies. They should be able to recognise problems that arise in practice in connection with innovations at an early stage and to deal with them effectively. They should be sensitive to the particular challenges of designing cooperative relationships in the field of research and development. They should be able to help shape the project management of innovation projects in a targeted manner.

2. Contents

- Development, evaluation and concretisation of technology strategies in the context of digitalisation
- Organisation, human resource management and controlling as instruments of technology management
- Digital transformation and innovation management in companies, public enterprises and cooperation networks
- Digital service innovations

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Technology & Innovation Management	V	2		WP	WT
Technology & Innovation Management	Ü	2	6	WP	WT

4. Forms of teaching and learning
Lecture and exercise (small group)

5. Admission requirements
None

6. Usability
Elective module in the elective area of economics/social sciences in the DiGA study programme (4th trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the term (in accordance with § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D26	**Organisation Theory & Network Management**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Business Administration, in particular Digital Governance & Service Design (Prof. Dr. M. Heimstädt) Business Administration, in particular Organisation Theory (Prof. Dr. S. Duschek)	heimstaedt@hsu-hh.de 040-6541-4563 sduschek@hsu-hh.de 040-6541-2584

Module description

1. Learning outcomes

The course introduces students to current organisational and management theories, building on the compulsory module "Fundamentals of Organisation and Management". A particular focus of this module is on theories that see the network as a central conceptual figure of thought in digital transformation. On the one hand, students will be introduced to theories that understand networks as a perspective on social and economic behaviour. On the other hand, students will be introduced to theories that understand networks as a specific form of inter-organisational relationship between market and hierarchy. Using case studies and practical examples, students will be introduced to the practices and problems of network management and network development.

2. Contents

- Fundamentals, assumptions, subject areas and explanations of current organisational and management theories
- Theories and methods of social networks
- Forms, management and practice of networks as a form of inter-organisational relationships

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Organisation Theory & Network Management	V	2	6	WP	WT
Organisation Theory & Network Management	Ü	2		WP	WT

4. Forms of teaching and learning

Lecture and exercise (small group)

| **5. Admission requirements** |
| None |

| **6. Usability** |
| Elective module in the elective area of economics/social sciences in the DiGA study programme (4th trimester). |

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

The module ends with a final exam (60 minutes) at the end of the trimester. An additional component of performance is the written preparation of a case study and its presentation during the course. The grades of the case study (presentation and term paper) and the written exam each count for 50% of the overall grade of the module.

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D27	**Innovation in Public Administration / Managing Public Sector Reform in the Digital Era**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Public Administration and Public Policy (Prof. T. Klenk)	tanja.klenk@hsu-hh.de 040-6541-2801

Module description

1. Learning outcomes

The students
- acquire knowledge about approaches to the design and management of innovation processes
- have an overview of the technical, legal and organisational aspects of innovations in the public sector
- are sensitised to the challenges of developing and implementing innovations in the public sector.

2. Contents

- Overview of theories of innovation development and management
- Reflection of the differences between private and public sector innovation
- Discussion of barriers to and drivers of innovation in the public sector
- Development of a deeper understanding of the role of the public sector in societal innovation:
  - o The public sector as promoter and facilitator of innovation in private and civil society organisations
  - o Innovation capacity of the public sector: management and leadership of innovation processes in public sector organisations
- Discussion of new trends in promoting public sector innovation capacity (such as open innovation, collaborative innovation)

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Innovation in Public Administration / Managing Public Sector Reform in the Digital Era	S	4	6	WP	WT

4. Forms of teaching and learning

Seminar

5. Admission requirements
None

6. Usability
Elective module in the elective area of economics/social sciences in the DiGA study programme (4th trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Seminar	12	4	48	
Preparation and follow-up of the courses	12	6	72	
Exam preparation and examination			60	
Total			**180**	**6**

8. Examination and grading of the module
Presentation or learning portfolio or essay. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D28	**Risk and Crisis Management in the Public Sector**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Public Administration and Digital Government (Prof. Dr. S. Veit)	veit@hsu-hh.de 040-6541-4552

Module description

1. Learning outcomes

The students will
- be familiar with frameworks for structuring complex decisions, stakeholder engagement, and effective risk management, and will be able to set strategic priorities and deal with conflicting objectives in crisis management;
- have gained an overview of decision and risk analysis methods and concepts, and will have learned how to apply and support decisions in key public sector decision areas and situations;
- have strengthened their ability to assess risks of failure and to contribute to appropriate risk mitigation and crisis management strategies by analysing cases (crises/disasters) from different perspectives (actors, disciplines).

2. Contents

- Analysis of the state of research in public administration on crisis management and resilience
- Analysis of frameworks conditions for structuring complex decisions, involvement of interest groups and effective risk management in the public sector
- Methods and concepts for decision and risk analysis
- Analysis of complex cases (failed policies, disasters, crises) from different perspectives (rationalities of actors, complexity of decision-making situations and framework conditions) using selected theoretical frameworks with the aim of identifying causal relationships and patterns, better assessing risks and contributing to appropriate risk reduction and crisis management strategies

3. Module components					
Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Risk and Crisis Management in the Public Sector	S	4	6	WP	WT

4. Forms of teaching and learning

Seminar

5. Admission requirements

None

6. Usability				
Elective module in the elective area of economics/social sciences in the DiGA study programme (4th trimester).				
7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Seminar	12	4	48	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**
8. Examination and grading of the module				
Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the term (in accordance with § 11 para. 3 APO).				
9. Duration of the module				
One trimester				
10. Number of participants				
No special restrictions				
11. Registration				
Campus Management System				
12. Literature references, Lecture notes				
References will be given at the beginning of the course.				
13. Further information				
The module is conducted in German or English.				

Module number	Module name	Credit points (ECTS-LP)
WS24D29	**Law in the Digital Age**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Additional Professorship in Law (N.N.) Business and Tax Law (Prof. Dr. G. Reiner)	N.N. guenter.reiner@hsu-hh.de 040-6541-2621

Module description

1. Learning outcomes

The aim of the module is to familiarise students with the disruptive developments of digitalisation in various areas of law. They should be enabled to orient themselves in these areas and, to a certain extent, to apply the relevant standards in a reasonable manner and to critically evaluate them.

2. Contents

The module consists of two lectures. These are compiled from a pool of courses on the general topic of "Law in the Digital Age", which cannot all be offered each year for capacity reasons. In particular, the following topics are planned:

- Digital EU Legislation
- Blockchain & AI in Law
- Legal Tech, Big Data and Statistical Methods in Law
- Data Protection Law

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Law in the Digital Age I	V	2	6	WP	WT
Law in the Digital Age II	V	2		WP	WT

4. Forms of teaching and learning

Lecture

5. Admission requirements

Students should have a basic understanding of legal questions. In-depth experience from a law course of at least 2 TWS (SWS) is sufficient.

6. Usability

Elective module in the elective area of economics/social sciences in the DiGA study programme (4th trimester).

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture I	12	2	24	
Lecture II	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module

Each course is subject to a partial examination (written examination of 60 minutes, term paper or oral examination); the grades are each included in the overall assessment of the module at 50%. The type of examination to be used is determined by the examiner at the beginning of the trimester (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

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13. Further information

The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D30	**Theory and Practice of Digital Democracies**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Political Science, in particular Political Theory (Prof. Dr. G.S. Schaal)	gschaal@hsu-hh.de

Module description

1. Learning outcomes

Students learn the theories, concepts and algorithmic methods that enable them to independently analyse the significance of digitalisation processes for central dimensions of democracy (especially normative, legal, institutional, procedural) in an interdisciplinary perspective.

2. Contents

The module consists of two seminars and methodologically places particular emphasis on the systematic connection of theory and empirical analysis. The module focuses on the question of what challenges for liberal democracy and normative democratic theory result from processes of digitalisation. It is assumed that "analog" processes will not be replaced by "digital" ones in the coming years, but that both will exist in parallel. It follows, first, that it is precisely the interfaces between "analog" and "digital" that are of central importance, and second, that the analysis of digital transformations can only take place against the background of a comprehensive analysis of the "analog" status quo of liberal democracy and normative democratic theory.

In the seminar "Analog and Digital Theories of Democracy", the most important works of "analog" contemporary democratic theory will be received and questioned as to which normative guiding ideas and institutional arrangements they specify. Based on this, the most important works of "digital" democratic theory will be examined to determine whether "analog" values, norms, guiding ideas, and fundamental rights are still adequate under the conditions of digitalisation or whether they need to be supplemented or replaced.

The seminar "Challenges of Digitalised Democratic Societies" will review empirical studies on the major "analog" political challenges of democracies – e.g. growing economic inequality, declining political equality, climate change – as well as the most important studies on current challenges posed by digitalisation. Topics include hybrid threats, blockchain, information capitalism, and digital forms of political participation.

3. Module components					
Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Analog and Digital Theories of Democracy	S	2	6	WP	WT
Challenges of Digitalised Democratic Societies	S	2		WP	FT

4. Forms of teaching and learning

Text study, impulse presentations, discussions, group work, computer simulations

5. Admission requirements

None

6. Usability

Elective module in the economic/social science elective in the DiGA study programme (4th/5th trimester). At the same time, the courses are part of the compulsory module WS21P25 in the Master´s programme "Comparative Democracy Studies".

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Seminar "Analog and Digital Theories of Democracy"	12	2	24	
Pre- and postprocessing			48	
Seminar "Challenges of Digitalised Democratic Societies"	12	2	24	
Pre- and postprocessing			48	
Exam preparation (oral exam)			36	
Total			**180**	**6**

8. Examination and grading of the module

Oral examination. Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module

Two trimesters

10. Number of participants

Max. 25 participants

11. Registration

Campus Management System

12. Literature references, Lecture notes
- Lembcke, Oliver/Ritzi, Claudia/Schaal, Gary S. (Eds.) (2016): Demokratietheorie. Band 1 und 2. Wiesbaden: Opladen.
- Borgman, Christine L. (2015): Big Data, Little Data, No Data. Scholarship in the Network World. Cambridge: MIT Press.
- Epstein, Ben (2018): The Only Constant is Change. Technology, Political Communication and Innovation over Time. Oxford: Oxford University Press.

13. Further information
The module is generally conducted in German.

Module number	Module name	Credit points (ECTS-LP)
WS22D41	**Large-Scale Data Management & Big Data Analytics**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

The students
- can discuss the relevance and fundamental fields of action of comprehensive data management in organisations from a strategic perspective;
- can describe basic types of information and their representation as data;
- can apply classical methods of conceptual data modelling and implement relational database systems on this basis;
- can describe forms of data management that go beyond the relational model;
- are familiar with approaches for representing, analysing, and making available low- and semi-structured information (e.g., texts and social media data);
- can describe and apply data-based analysis methods to support operational planning and decision-making processes.

2. Contents

- Data management in organisations, data governance
- ER modelling and relational database systems, SQL
- Data warehouses
- NoSQL databases
- Big Data Analytics

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Large-scale Data Management & Big Data Analytics	V	2	6	WP	FT
Large-scale Data Management & Big Data Analytics	Ü	2		WP	FT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

	Weeks	h/week	Total hrs	LP
6. Usability				
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (2nd trimester).				
7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of courses	12	8	96	
Exam preparation/exam			36	
Total			**180**	**6**
8. Examination and grading of the module				
Oral examination or project performance. The type of examination to be used is determined by the examiner at the beginning of the trimester (according to § 11 para. 3 APO).				
9. Duration of the module				
One trimester				
10. Number of participants				
No special restrictions				
11. Registration				
Campus Management System				
12. Literature references, Lecture notes				
References will be given at the beginning of the course.				
13. Further information				
The module is conducted in German or English.				

Module number	Module name	Credit points (ECTS-LP)
WS22D42	**Algorithmic Problem Solving and Programming**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner) Business Administration, in particular Information Systems (Prof. Dr. A. Fink)	buettner@hsu-hh.de andreas.fink@hsu-hh.de 040-6541-2857

Module description

1. Learning outcomes
Students will be able to describe the basic functioning of automatic information processing based on algorithmic processes. They know basic concepts of software-based problem solving and can apply these to typical tasks and evaluate them regarding correctness and efficiency. The students master the basics of programming and can use modern software tools to develop and examine programs for the algorithmic solution of defined problems. Based on this, they are able to reflect on the aspects of transparency and trustworthiness of software.

2. Contents
Algorithmic thinking and problem-solving strategies, problem abstraction based on typical types of problems with corresponding requirements for algorithms, selected classical algorithms and data structures, as well as theoretical and experimental approaches to the analysis of algorithms, are covered. This is combined with an introduction to programming using a modern programming language. On this basis, algorithmically oriented tasks are worked on in small group-based software project work (program development and analysis).

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Algorithmic Problem Solving and Programming	V/Ü	4	6	WP	FT

4. Forms of teaching and learning

Integration of lecture and exercise parts on the computer, project work partly in group work, small group in the PC lab

5. Admission requirements

None

6. Usability				
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (2nd trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture and exercise	12	4	48	
Preparation and wrap-up of courses, homework assignments	6	11	66	
Project work	6	11	66	
Total			**180**	**6**

8. Examination and grading of the module
Project performance

9. Duration of the module
One trimester

10. Number of participants
Limitation according to the capacity of the PC lab to a maximum of 27 participants

11. Registration
Campus Management System

12. Literature references, Lecture notes
Excerpts from P.J. Denning, M. Tedre, Computational Thinking, MIT Press, 2019 and T.H. Cormen, C.E. Leiserson, R.L. Rivest, C. Stein, Introduction to Algorithms, Fourth Edition, MIT Press, 2022. Further references to literature and materials will be given at the beginning of the course, taking into account the programming language used.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23D43	**Human-Machine Collaboration**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

The students
- know models, possibilities, and limitations for understanding machine/algorithmic intelligence or decision-making/task completion;
- can describe basic forms of complementary interaction between human (individual as well as collective) and machine/algorithmic intelligence;
- can assess the potential and advantages and disadvantages of human and machine/algorithmic intelligence in specific application contexts;
- are familiar with design options for human-machine communication/interaction and can implement these using selected case studies.

2. Contents

- Explainable AI depending on specific methods (algorithms, machine learning)
- Human-AI collaboration (design principles, forms, technologies)
- Human-Computer-Interaction (HCI) incl. Usability Engineering & User Experience Design

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Human Machine Collaboration	V/Ü	2		WP	HT
Human Machine Collaboration	Ü	2	6	WP	HT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

6. Usability				
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (3rd trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	6	72	
Exam preparation and examination			60	
Total			**180**	**6**

8. Examination and grading of the module
Oral examination or project performance or term paper with short presentation. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23D44	**Process Intelligence and Automation**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

The students
- can describe basic forms of business process management in a reflective manner and know associated approaches to IT-supported control or (partial) automation and optimisation of business processes;
- know the basic business process patterns and can apply them when modelling business processes;
- can explain the prerequisites and objectives of classical workflow management (modelling and automation or automatic control of well-structured repetitive business processes) and describe corresponding processes in a workflow management system to be designed;
- are familiar with process mining methods (accessing the IT systems involved to record traces of business processes carried out there and using them to derive knowledge about business processes and make this knowledge usable for specific purposes) and can apply these methods in practice;
- know robotic process automation as a practice-oriented approach for the digital substitution of humans in suitable repetitive activities when interacting with IT systems and can implement this approach using examples.

2. Contents

- Basics for the analysis, optimisation and IT-supported control of (business) processes
- Modelling of business processes (e.g., according to BPMN)
- Classic workflow management
- Process mining & process intelligence (discovery, conformance checking, decision mining, organisational mining, operational support, performance analysis)
- Robotic process automation

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Process Intelligence and Automation	V	2	6	WP	HT
Process Intelligence and Automation	Ü	2		WP	HT

4. Forms of teaching and learning
Lecture and exercise (small group)

5. Admission requirements
None

6. Usability
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (3rd trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of the courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Written exam (120 minutes) or oral exam or project performance. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
E.g.: R. Laue, A. Koschmider, D. Fahland: Prozessmanagement und Process-Mining, De Gruyter Studium, 2021; W. van der Aalst: Process Mining - Data Science in Action, Springer, 2016.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23D45	**Visualisation of Data & Augmented Reality**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

The students
- are familiar with different ways of visualising data and can identify the appropriate type(s) of visualisation for different types of data and questions;
- can implement these practically on the computer and interpret the results;
- can discuss (if necessary, target group-specific) basic principles to be observed when visualising data;
- know the basic principles and fundamental techniques of virtual & augmented reality (VR/AR);
- can describe and discuss exemplary applications of VR/AR.

2. Contents

- Simple graphs for discrete and continuous as well as univariate, bivariate, and multivariate data
- Graphs for more specialised data types, e.g., temporal-spatial data, functional data, text or network data
- Introduction to virtual & augmented reality: human information processing and perception, virtual worlds, tracking, input and output devices, etc.
- Selected applications/case studies, e.g., for visualisation of 3D data using VR/AR

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Visualisation of Data & Augmented Reality	V	2	6	WP	HT
Visualisation of Data & Augmented Reality	Ü	2		WP	HT

4. Forms of teaching and learning

Lecture and exercise (small group)

5. Admission requirements

None

6. Usability				
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (2nd trimester).				

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture	12	2	24	
Exercise	12	2	24	
Preparation and follow-up of courses	12	8	96	
Exam preparation and examination			36	
Total			**180**	**6**

8. Examination and grading of the module
Oral examination or project performance. The type of examination to be used is determined by the examiner at the beginning of the trimester (according to § 11 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
No special restrictions

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS23M18	**Statistical Computing**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Statistics and Data Science (Prof. Dr. J. Gertheiss) Computational Statistics (Prof. Dr. S. Knoth)	jan.gertheiss@hsu-hh.de 040-6541-2985 knoth@hsu-hh.de 040-6541-3400

Module description

1. Learning outcomes

After attending the module, students will be able to work on statistical problems using mathematical-statistical software packages. They are able to analyse the problems posed and independently write program codes to solve them, e.g., by using suitable numerical methods or simulation procedures.

2. Contents

- Development of programs using common mathematical-statistical software
- Use of numerical methods (e.g., optimisation, approximation)
- Nonparametric density estimation
- Generation of random numbers (procedures, distributions, etc.)
- Simulation of stochastic models (e.g., processes, multivariate phenomena)
- Computer-intensive techniques (e.g., resampling)

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Statistical Computing	V	4	6	WP	HT

4. Forms of teaching and learning

Lecture with integrated computer exercise (small group)

5. Admission requirements

Solid knowledge of the contents of the modules "Quantitative Methods I–III" (BA programmes Economics, Business Administration, Logistics) is required.

		6. Usability

6. Usability

Elective module in the Master's programs in Economics and Logistics as well as in the Master´s programme in Business Administration / majors "Logistics Management" and "Risk Management" (mathematical branch), elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (3rd trimester)

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture	12	4	48	
Preparation and follow-up of the courses, processing of the exercise sheet	12	6	72	
Exam preparation and examination			60	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam or term paper with short presentation. The type of examination to be used will be determined by the examiner at the beginning of the term (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

- M.L. Rizzo: Statistical computing with R. Chapman and Hall/CRC, Boca Raton, 2008.
- U. Ligges: Programmieren mit R. Springer, 2nd edition, 2006.
- W. Schweizer: MATLAB kompakt. Oldenbourg, 5th edition, 2013.
- C.H. Weiß: Mathematica und Wolfram Language. De Gruyter Oldenbourg, 2017.

13. Further information

The module is generally conducted in German.

Module number	Module name	Credit points (ECTS-LP)
WS23M12	**Game and Decision Theory**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Applied Stochastics & Risk Management (Prof. Dr. G. Frahm)	frahm@hsu-hh.de 040-6541-2378

Module description

1. Learning outcomes

After attending this module, the students will be familiar with the concept of rationality. They will be able to decompose decision problems under uncertainty into their components and explain how a rational individual makes decisions. Students will be able to solve single- and multi-stage decision problems by using the expected-utility calculus. They will be familiar with backward induction and know how to express individual attitudes to risk by the utility function. They will be able to express constant absolute and constant relative risk aversion. Further, they will be able to bridge decision theory and game theory. They will be familiar with the elementary solution concepts of game theory (dominance, Nash equilibrium, Pareto efficiency and perfectness). Moreover, they will be familiar with material and indicative conditionals and able to assess their importance in the context of game theory. They will be familiar also with the solution of prototypical games (Prisoner's dilemma, coordination games, anti-coordination games and discoordination games).

2. Contents

- Procedural rationality and consistency
- Problem analysis (goals and preferences, actions, environmental conditions and consequences)
- Uncertainty, objectivism vs. subjectivism
- Calculation rules for probabilities
- Presentation and solution of decision problems
- Dominance principle, expected utility, risk attitude, and initial wealth
- Constant absolute and constant relative risk aversion and selected utility functions
- Game theory vs. decision theory, cooperative vs. non-cooperative game theory, extensive vs. strategic form, perfect vs. complete information
- Classical solution methods of game theory (dominance, Nash equilibrium, Pareto efficiency and perfectness)
- Material and indicative conditionals, counterfactuals
- Prisoner's dilemma, coordination games, anti-coordination games and discoordination games

3. Module components					
Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Game and Decision Theory	V/Ü	4	6	WP	HT

4. Forms of teaching and learning

Lecture with integrated exercise (small group)

5. Admission requirements

Solid knowledge of the contents of the modules "Quantitative Methods I–III" (BA programmes Economics, Business Administration, Logistics) is required.

6. Usability

Compulsory module in the Master´s programme in Business Administration/ major "Risk Management", elective module in the in the Master´s programme in Business Administration / majors "Innovation and Network Management" and "Logistics Management", elective module in the Master´s programme in Logistics as well as elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA programme (3rd trimester)

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Lecture and exercise	12	4	48	
Preparation and follow-up of the courses, processing of the exercise sheet	12	6	72	
Exam preparation and examination			60	
Total			**180**	**6**

8. Examination and grading of the module

Written exam (120 minutes) or oral exam. The type of examination to be used will be determined by the examiner at the beginning of the trimester (in accordance with § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

No special restrictions

11. Registration

Campus Management System

12. Literature references, Lecture notes

- F. Eisenführ, M. Weber, T. Langer: Rationales Entscheiden. 5th ed., Springer, 2010.
- C. Rieck: Spieltheorie. Christian Rieck Verlag, 2015.

13. Further information
The module is generally conducted in German.

Module number	Module name	Credit points (ECTS-LP)
WS24D46	**Applied Data Analysis Project**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner)	buettner@hsu-hh.de

Module description

1. Learning outcomes

Students will be able to apply the most up-to-date data analysis methods (especially in the areas of machine/deep learning, text mining and time series analysis) to complex business and entrepreneurial problems in order to create, evaluate and optimise problem- and data-adequate analysis and forecasting models in a suitable programming language (e.g. R or Python) and present them to a scientific audience.

In particular, students will be able to

- analyse a provided data set using suitable methods and software and answer specific research questions posed to them or explain in a well-founded manner why these cannot be answered with the available data;

- visualise the provided data appropriately and illustrate their analyses with the help of suitable graphs;

- prepare and communicate their analyses, interpretations and conclusions appropriately in a final report and a presentation.

2. Contents

The course covers selected problems of the entire data analysis process chain (including data collection, method adaptation and further development, visualisation).

- Presentation and assignment of projects
- Import of the data set
- Modelling and adaptation
- Initial (descriptive) analysis and visualisation with interim presentation and feedback
- Preliminary completion of the analyses and final presentation (with feedback discussion)
- Write the final report (term paper), taking into account the feedback from the final presentation where appropriate

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Applied Data Analysis Project	Project Seminar	4	6	WP	WT

4. Forms of teaching and learning
Integration of lecture and exercise parts on the computer, project work partly in group work, small group in the PC lab

5. Admission requirements
Students should have knowledge in the elective area with modules with a focus on computer science and quantitative methods. Please note the specific announcement of the professorship offering the course in the respective academic year.

6. Usability
Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (4th trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Project seminar sessions	12	4	48	
Analyses and presentations			66	
Writing the final report (term paper)			66	
Total			**180**	**6**

8. Examination and grading of the module
Project performance. Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module
One trimester

10. Number of participants
Limited to a maximum of 12 participants for didactic reasons

11. Registration
Campus Management System

12. Literature references, Lecture notes
References will be given at the beginning of the course.

13. Further information
The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D47	**High Performance Computing Project**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	Hybrid Intelligence (Prof. Dr. R. Büttner) Business Administration, in particular Information Systems (Prof. Dr. A. Fink)	buettner@hsu-hh.de andreas.fink@hsu-hh.de 040-6541-2857

Module description

1. Learning outcomes
The students - are familiar with the potential of High Performance Computing (HPC), in particular Graphics Processing Unit (GPU) solutions; - familiarise themselves with selected methods, techniques and tools for HPC and GPU use; - can practically apply methods, techniques and tools using the HPC and GPU systems of HSU / UniBw H and beyond for selected tasks; - are able to prepare and communicate their methods, implementations and results in a final report and a presentation.

2. Contents
- Basics for the use of HPC and GPU systems and parallel programming - Presentation and assignment of the projects - Process design and implementation - Experimental tests/simulations and analyses - Final presentation and final report

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
High Performance Computing Project	Project Seminar	4	6	WP	WT

4. Forms of teaching and learning
Integration of lecture and exercise parts on the computer, project work partly in group work, small group in the PC lab

5. Admission requirements
Students should have knowledge in the elective area with modules with a focus on computer

science and quantitative methods. Please note the specific announcement of the professor-ship offering the course in the respective academic year.

6. Usability

Elective module from the area of modules with a focus on computer science and quantitative methods in the DiGA study programme (4th trimester).

7. Workload and credit points

	Weeks	h/week	Total hrs	LP
Project seminar sessions	12	4	48	
Implementations, experimental analyses and preparation of interim presentations			72	
Writing the final report			54	
Total			**180**	**6**

8. Examination and grading of the module

Project performance. Regular attendance of the courses is a prerequisite for admission to the examination (according to § 10 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

Limited to a maximum of 12 participants for didactic reasons

11. Registration

Campus Management System

12. Literature references, Lecture notes

References will be given at the beginning of the course.

13. Further information

The module is conducted in German or English.

Module number	Module name	Credit points (ECTS-LP)
WS24D61	**Advanced / Current Topics**	**6**
Module type	**Person responsible for the module**	**E-mail / Tel. no.**
Elective	All professorships relevant in the subject area of the study programme	

Module description

1. Learning outcomes

Students acquire competencies in a selected in-depth and/or current area within the framework of the basic subject areas of the Masters program. This may, for example, also include interdisciplinary considerations involving legal, educational, or technical aspects.

2. Contents

The specific content will be determined in each case depending on the areas under consideration.

3. Module components

Course title	Course type	TWS	LP	Compulsory (P)/ Elective (WP)	HT/WT/FT
Advanced / Current Topics	V/Ü	4	6	WP	WT

4. Forms of teaching and learning

According to the respective announcement, e.g. lecture (small group) with integrated practical exercises.

5. Admission requirements

No formal requirements, but content recommendations according to the respective announcement

6. Usability

Elective module in the DiGA study programme (4th trimester)

7. Workload and credit points				
	Weeks	h/week	Total hrs	LP
Lecture and exercise	12	2+2	48	
Pre- and postprocessing	12	7	84	
Exam preparation/exam			48	
Total			**180**	**6**

8. Examination and grading of the module

Oral examination or term paper + short presentation. The type of examination to be used will be determined by the examiner at the beginning of the term (according to § 11 para. 3 APO).

9. Duration of the module

One trimester

10. Number of participants

According to the respective announcement

11. Registration

Campus Management System

12. Literature references, Lecture notes

According to the respective announcement

13. Further information

The module is conducted in English and/or German.