



Programme Description

Micro-Degree

Artificial Intelligence and Society

Translation of „Lehrplan 12.03.2025 V2.0“*

(Please note: The English version of this document is a courtesy translation.
Only the German version is legally binding)

Table of Contents

§ 1 General Provisions	3
(1) Subject of the Micro-Degree	3
(2) Qualification Profile and Competencies	3
(3) Target Group and Prerequisites	4
(4) Number of Students and Ranking Criteria	4
(5) Maximum Duration	4
(6) Certificate	5
§ 2 Structure and Organization of the Micro-Degree	5
(1) Duration and Structure	5
(2) Submodules und Examinations	5
(4) Number of Possible Participants in Courses	7
(5) Language	7
§ 3 Validity of the Micro-Degree	7
Annex I: Description of the Submodules	8

§ 1 General Provisions

(1) Subject of the Micro-Degree

In recent decades, Artificial Intelligence (AI) has brought about profound changes in people's everyday lives, in work, and in social interaction and has become a major driver of innovation. The resulting developments affect numerous professional fields and create the need for lifelong learning as an essential requirement. Adapting academic education to the changing demands of society and integrating AI into learning and work processes are central tasks.

The ongoing development of AI impacts all areas of society. Modern teaching offers must therefore not only take into account the societal implications, but also convey practical skills in handling AI tools. This transversal competence supports students in their studies and everyday life and prepares them for future challenges.

The responsible use and critical reflection of AI, in particular the rapid evolution of generative systems, is a crucial task in teaching and research. The opportunities and risks of AI must be continuously analysed and scenarios for the responsible use of AI must be developed, even though future fields of application cannot always be predicted precisely.

(2) Qualification Profile and Competencies

Artificial Intelligence is revolutionizing everyday life and the world of work. The Micro-Degree Artificial Intelligence and Society offers multidisciplinary further education that addresses these revolutionary changes precisely. In the central fields of action – technology, ethics, law as well as business, the world of work, and education – students develop expertise and practical skills to not only understand AI systems, but also to shape and use them responsibly.

(3) Target Group and Prerequisites

The courses of the Micro-Degree “AI and Society” are intended for students of Bachelor’s or diploma programmes at the University of Graz.

It is recommended that the courses of the Micro-Degree “AI and Society” be taken after successful completion of the introductory and orientation phase (STEOP).

(4) Number of Students and Ranking Criteria

If the prescribed maximum number of participants is exceeded, admission to courses with limited participant numbers – provided the prerequisites according to § 2 are fulfilled – will be made according to the following ranking criteria:

1. **Incoming students:** Students from universities with which the University of Graz has concluded an agreement on cooperation in the Micro-Degree “AI and Society” and who have been nominated by their university to participate in the Micro-Degree “AI and Society”.
2. **Position of the course in the curriculum (compulsory/elective before free elective):** The course is prescribed as compulsory in the curriculum for which the course registration is made. All courses provided for in the relevant curriculum are ranked equally and are given preference over free electives.
3. **Lot (random) decision:** If no ranking decision is possible on the basis of the above criteria, the outcome is decided by chance.

(5) Maximum Duration

It is recommended that the Micro-Degree “AI and Society” be completed within 2 semesters (one cycle). In order to receive the certificate, all courses must be completed within 4 semesters.

(6) Certificate

After successful completion of all required courses, students receive a certificate from the University of Graz.

§ 2 Structure and Organization of the Micro-Degree

(1) Duration and Structure

The Micro-Degree, with a workload of 16 ECTS credits, has a planned study duration of two semesters and is structured in modules:

Submodules	ECTS
A: Basics	4
B: Application	6
C: Implementation	6
Total	16

(2) Submodules und Examinations

The submodules and examinations are listed below with their designation, course type, ECTS credits, contact hours (KStd.), and semester. The descriptions of the submodules can be found in Annex I.

	Submodules and Examinations	Course type	ECTS	KStd.
A	Basics (1st semester)		4	
A.1	Modul A - Basics: AI and society	VO	4	2
B	Application (1st semester)		6	
B.1	Modul B1 - Application: Technical aspects in AI	KS	3	1

B.2	Modul B2 - Application: Ethical, legal, economic or educational aspects in AI	KS	3	1
C	Implementation (2nd semester)		6	
C.1	Module C1 - Practical implementation of technical, ethical, legal, economic or educational aspects in AI	PT	6	2

Abbreviations: VO: lecture; KS: course; PT: project; SSt: semester hours/contact hours

Modules B.2 and C.1 each consist of sub-courses that cover different fields of action; one sub-course must be selected at registration in each case. To obtain the certificate, successful completion of modules A.1 and B.1 as well as one sub-course from module B.2 and one sub-course from module C.1 is required.

(3) Prerequisite(s) for Participation in Courses

Since the course contents build on one another, the modules must be completed in the intended order A, B, C. For admission to the courses in module B, passing the examination in the lecture (VO) of module A is a prerequisite.

For the practical training in the second semester (module C), the courses of module B must have been successfully completed beforehand.

Module title/course title		Prerequisite(s) for participation	
B.1	Modul B1 - Application: Technical aspects in AI	A.1	Modul A - Basics: AI and society
B.2	Modul B2 - Application: Ethical, legal, economic or educational aspects in AI	A.1	Modul A - Basics: AI and society
C.1	Module C1 - Practical implementation of technical, ethical, legal, economic or educational aspects in AI	B.1 and B.2	Modul B1 - Application: Technical aspects in AI and Modul B2 - Application: Ethical, legal, economic or educational aspects in AI

(4) Number of Possible Participants in Courses

For pedagogical-didactic and spatial reasons, due to the number of devices/equipment or for safety reasons, the number of participants for the individual course types may be limited:

Course type	Number of participants
Lecture (VO)	No limitation
Course (KS)	25
Project (PT)	20

(5) Language

In all modules, the language of instruction is German. All modules/examination subjects may also be held in English. If courses are held partly or entirely in English, this must be indicated in the respective course description.

(6) Mode of Delivery

The courses of the Micro-Degree AI and Society may be held both in person and online. The respective mode of delivery is determined and published before the start of each cycle.

§ 3 Validity of the Micro-Degree

The programme description in the present version (Version 2.0) enters into force in the winter semester 2025/26.

Annex I: Description of the Submodules

Module A	AI - Basics
ETCS credits	4
Subject content	A: Technical Aspects ▪ Learning computational thinking as a basis for understanding and implementing AI applications ▪ Machine learning: learning the fundamentals of different learning algorithms and their applications ▪ Generative methods: learning the basics of Natural Language Processing and its application in the form of large language models. Outlook on other generative methods such as image and music generation ▪ Decision support systems: learning the technical fundamentals of systems that underlie, for example, content recommendations on social media platforms or Google Search B: Ethical Aspects ▪ Fundamentals of ethics and technology ethics: systems, theories, central concepts ▪ Responsibility and accountability with regard to the development and use of AI ▪ Justice and discrimination in the use of AI ▪ Ethical considerations regarding transparency and explainability of algorithms ▪ Alignment of AI with fundamental moral and societal values (value alignment) ▪ Safety in the use of and trust in AI C: Legal Aspects ▪ Introduction to legal issues of Artificial Intelligence: legal sources, history of development, fields of

	application, legal requirements for the use of AI systems, regulation of AI (EU AI Act), liability for AI ▪ Data protection law: fundamentals, responsibilities, legal bases, definition of personal data, lawfulness of data processing, information obligations, data protection impact assessment (DPIA), notification obligations in case of data protection breaches, special requirements for the use of AI, in particular taking into account the General Data Protection Regulation (GDPR) and the EU AI Act ▪ Liability law: fundamentals, prerequisites, legal consequences and limits of civil liability when using AI systems, in particular taking into account the Product Liability Act (Produkthaftungsgesetz, ProdHaftG) as well as the EU AI Act ▪ Copyright law: fundamentals, prerequisites, scope and limitations of copyright protection for AI-generated works, use of copyright-protected works as training data for AI applications D: Economic Aspects ▪ Explain possible uses of AI in organizations and, in particular, the possibility of new business models ▪ Recognize opportunities and risks of AI with regard to organizations ▪ Understand the impact of AI systems on the world of work and, in particular, explain the skills that will be required in the future E: Educational Aspects ▪ Analyze the implications of AI systems for the education system and derive future competencies ▪ Identify and assess opportunities and challenges of AI in pedagogical contexts at different educational
--	---

	levels ▪ Explain the effects of AI applications in the educational context, in particular with regard to assessment and examinations
Expected learning outcomes/acquired competences	After completing the submodule, students are able to: A: Technical Aspects ▪ Apply computational thinking to illustrate the possible uses of AI systems ▪ Identify the fields of application of different learning algorithms ▪ Explain the functioning of generative models and name their advantages and disadvantages ▪ Explain the functioning of decision support systems in the area of content recommendation and ranking and analyze their influence on human decision-making B: Ethical Aspects ▪ Apply central moral-philosophical concepts to different AI debates ▪ Recognize, formulate, and analyze relevant ethical questions regarding the development and use of AI C: Legal Aspects ▪ Identify and apply the legal sources relevant to the use of AI systems ▪ Recognize legal risks in the use of AI systems and identify the associated problem areas ▪ Name the legal requirements for the use of AI under the EU AI Act and the GDPR ▪ Identify central problems in the use of AI in various sub-disciplines of law and outline the legal scholarly

	discussion (regulation under the AI Act, liability, data protection law, copyright law, civil liability) D: Economic Aspects ▪ Name possible uses of AI in organizations and, in particular, the possibility of new business models ▪ Discuss opportunities and risks of AI with regard to organizations ▪ Explain the impact of AI systems on the world of work and draw conclusions for their own career planning E: Educational Aspects ▪ Explore relationships between the use of AI and educational dynamics and, based on this, identify necessary competencies for the digital future ▪ Differentiate the potential and limitations of AI in educational environments and assess their relevance for pedagogical processes as well as for assessment and examinations
Teaching and learning activities / methods	▪ Lecture, Self-study
Frequency with which the module is offered	Every academic year

Module B	AI - Application
ETCS credits	6
Subject content¹	A: Technical Aspects ▪ Learning the fundamentals of a programming language (Python) with the support of a programming co-pilot ▪ Collecting, cleaning, and preparing data for AI

	applications ▪ Trying out various AI applications such as classification (supervised learning), exploration of large datasets (unsupervised learning), generation of content such as texts, images, and music (generative models), and information retrieval (content recommendation) using existing libraries of AI applications ▪ Visualization of the results of AI applications ▪ Analysis of the functionality of AI applications with regard to their accuracy and possible distortions (biases) B: Ethical Aspects ▪ Application of theoretical concepts ▪ Taking positions and learning analytical skills with regard to questions about existing AI systems (e.g. COMPAS algorithm, autonomous weapon systems, etc.) C: Legal Aspects ▪ Applications: analysis of the applicable legal framework for the use of AI systems, analysis of data protection requirements and assessment of liability risks when using AI systems; discussion of copyright law issues in the context of AI-generated content (exclusive rights to content generated by AI, use of copyright-protected works as AI training data) D: Economic Aspects ▪ Explain the use of AI in the context of organizational development with the help of Business Process Mining and specific software tools
--	--

	▪ Know the components of a data-based business model ▪ Case study analysis of the impact of AI systems on the world of work ▪ Market analyses taking into account the use of AI E: Educational Aspects ▪ Adaptive learning system for analyzing learning progress and providing individually tailored learning content as well as examinations ▪ Chatbot as virtual tutor and personalized support in dealing with challenges in specific learning settings ▪ Analysis tool for teachers that uses AI to identify patterns in learning behavior and thus contributes to the optimization of learning ▪ Describe individual AI applications in the educational field and explain their influence on the learning environment, teaching methods, and learners
Expected learning outcomes/acquired competences¹	After completing the submodule, students are able to: A: Technical Aspects ▪ Use AI applications from the area of supervised learning and unsupervised learning in Python with the support of a programming co-pilot and common libraries (scikit-learn) and visualize their results ▪ Interact with various current generative models and content recommendation systems and compare them with each other ▪ Interpret common metrics for the evaluation of AI applications, such as accuracy and F1 score, and use them to examine the functionality of AI applications

	B: Ethical Aspects ▪ Reproduce and apply fundamental concepts of normative ethics in general and technology ethics in particular ▪ Recognize and analyze ethical problems in the development and use of AI systems ▪ Apply central concepts, positions, and theories of AI ethics to further areas of application of AI C: Legal Aspects ▪ Recognize the legal issues relevant to the use of AI and assign them to one of the classical areas of law (data protection law, IT contract law, liability law, AI regulation law, copyright law) ▪ Regulatory instruments: recognize the regulatory instruments relevant to the use of AI (laws, EU regulations and EU directives), name their scope of application, and apply them in outline to specific cases ▪ Legal risks: recognize the legal risks associated with the use of AI and identify the need for professional legal advice ▪ Fundamentals of data protection law: recognize in overview the fundamentals of data protection law and the specific requirements in connection with AI on the basis of the GDPR as well as the EU AI Act ▪ Fundamentals of liability law: name the system-related deficits of the tort liability system when using AI and explain the basic features of strict liability according to the proposal for an EU AI Liability Directive ▪ Fundamentals of copyright law: understand basic questions of copyright law in the context of AI and discuss the problems debated in the literature
--	--

	▪ Legal risks: identify legal risks associated with the use of AI systems, assess them in outline, and adequately gauge the need for professional legal advice ▪ Problems of AI law: critically reflect the legal problems connected with the use of AI in selected areas of law (e.g. regulatory law, liability law, and copyright law) D: Economic Aspects ▪ Plan organizational development using Business Process Mining and contribute to individual tasks ▪ Design a data-based business model ▪ Critically reflect the influence of AI systems on the world of work E: Educational Aspects ▪ Evaluate adaptive learning systems with regard to their mode of operation and determine their usefulness for the personalization of learning content and examinations ▪ Assess the possible uses of virtual tutor systems and reflect on their use for solving challenges in specific learning settings ▪ Use analysis tools that employ AI to recognize learning behavior and, based on that, optimize learning processes (including preparation for examinations)
Teaching and learning activities / methods¹	A: Technical Aspects ▪ Case studies: implementation, analysis, and discussion of various AI applications (supervised learning, unsupervised learning, generative models, content

¹ B-E: depending on the sub-course of module B.2

	recommendation) in different fields of application ▪ Group work: collaboration in groups to support each other in learning to use a programming language and AI applications ▪ Hands-on units: joint implementation of AI applications and live coding by the instructors ▪ Use of AI in teaching: use of AI-supported co-pilots to support students in learning and using a programming language ▪ Online platforms: use of e-learning platforms to access teaching materials, discussion forums, to submit assignments, and to check knowledge in continuous assessment courses. Use of a browser-based programming environment (JupyterHub, Google Colab) to reduce initial difficulties in using a programming language B: Ethical Aspects ▪ Case studies: analysis and discussion of real and hypothetical cases in order to recognize and reflect fundamental moral-philosophical problems in the use of AI ▪ Group work: promoting discussion and understanding of complex ethical problems in the development and application of AI ▪ Guest lectures: inviting experts from theory and practice to provide insights into current developments and ethical challenges in the use of AI ▪ Workshops: practical workshops for ethical evaluation of existing algorithms ▪ Experimental-philosophical studies: online experiments regarding moral-philosophical thought experiments
--	---

	▪ Research projects: encouraging individual or group research projects to deepen understanding of specific aspects of AI ethics C: Legal Aspects ▪ Case studies: analysis and discussion of real and hypothetical cases to understand the application of existing and planned regulatory instruments (EU AI Act, GDPR, Copyright Act (UrhG)) ▪ Group work: collaboration in groups to promote discussion and understanding of complex legal problems associated with AI ▪ Guest lectures: inviting experts from practice to provide insights into current developments and challenges in AI law ▪ Workshops: practical workshops on drafting, reviewing, and negotiating AI-related contracts and on analyzing data protection requirements ▪ Simulations: role plays and simulations to recognize legal problems when using AI-based decision support systems in internal corporate decision-making and to develop solutions ▪ Self-study: guidance for independent study of relevant legal texts, court decisions, and academic literature ▪ Use of AI in teaching: use of generative AI systems as tutoring tools to provide individual explanations and examples and support the learning process ▪ Online platforms: use of e-learning platforms to access teaching materials, discussion forums, and to submit assignments ▪ Research projects: encouraging individual or group research projects to deepen understanding of
--	--

	specific aspects of AI law D: Economic Aspects ▪ Use of Business Process Mining software in teaching: exploring datasets and developing a concept ▪ Use of templates for business process development: application to existing or new business models ▪ Case studies: analysis of case studies ▪ Research projects: group research projects to analyze specific scenarios in industries or subject areas in detail E: Educational Aspects ▪ Role plays and scenario simulations: students adopt different roles within an AI-supported educational scenario in order to evaluate opportunities and challenges (especially for examinations) from different perspectives ▪ Students analyze AI-based teaching or learning tools to gain insights into the use of such systems ▪ Students use AI tools within the course and analyze their own learning behavior with the help of AI-supported tools
Frequency with which the module is offered	Every academic year

Module C	AI - Implementation
ETCS credits	6
Subject content	▪ Basics of AI: understanding basic concepts, algorithms, machine learning, and data processing ▪ Critical analysis and evaluation: guidance for critical assessment of AI systems, including consideration

	of bias, data protection, and ethical issues ▪ Communication and discourse: training in effective communication and argumentation regarding the implications of AI in various areas and exchange with experts from the field ▪ Educational technologies: detailed insight into various AI applications such as adaptive learning platforms, AI-supported assessment systems, and chatbots
Expected learning outcomes/acquired competences	After completing the submodule, students are able to: ▪ Independently plan, carry out, and reflect on a small project ▪ Develop critical analytical skills that enable them to begin to understand the functioning and potential of AI systems ▪ Strengthen their communication skills and reflect on ethical and social implications of AI applications ▪ Develop practical understanding of the use of AI in different everyday areas
Teaching and learning activities / methods	▪ Independently carry out a small project ▪ Apply AI elements and critically reflect on them
Frequency with which the module is offered	Every academic year

Director of Studies:

Walter-Laager