MASTER OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

GUIDELINE

Application
from 15 November to 15 January

Admission test

Registration (both THD & USB)

THD introduction

Summer semester (THD) 🎓 28

- AID-01 🎓 5 — Artificial Intelligence and Software Development
- AID-02 🎓 8 — Theoretical Fundamentals of Artificial Intelligence
- AID-03 🎓 5 — Advanced Machine Learning
- AID-04 🎓 5 — Faculty Elective 1 (see THD Recommended Electives)
- AID-05 🎓 5 — Faculty Elective 2 (see THD Recommended Electives)

already completed WS at USB

Internship semester 🎓 30

- UAI/506 AID-14 🎓 20 — Internship
- ELE 🎓 10 — Electives (see Recommended Electives)

Master thesis 🎓 30

- UAI/507 AID-17 🎓 5 — Advanced Topics in AI (AI Lab)
- UAI/510 AID-18 🎓 20 — Master thesis
- UAI/508 AID-19 🎓 5 — Master seminar

All compulsory subjects must be successfully completed, 120 ECTS must be fulfilled

State exams, Thesis defense

Graduation ceremony

You can start either summer semester at THD or winter semester at USB (get your VISA in time)

Foreigners need EU/DE VISA from February to July

Foreigners need EU/CZ VISA from September to February

USB introduction

Winter semester (USB) 🎓 28

- UAI/500 🎓 4 — Information Theory
- UAI/501 🎓 6 — Math for Artificial Intelligence and Data Science
- UAI/502 🎓 4 — Computational Intelligence
- UAI/503 🎓 4 — Distributed Algorithms
- UAI/504 🎓 6 — Advanced Data Storages and Analyses
- UFY/505 🎓 4 — Parallel Programming and Computing

already completed SS at THD

Legend

- 🟩 Compulsory subjects
- 🟧 Elective courses (USB)
- 🟥 Elective courses (THD)
- 🟦 Thesis, seminars and internship

- 🎓 ECTS (credits) per course/semester
- (T) One week course
- (B) Block course
- (P) Project
- (E) Online course
- ☀ Summer semester
- ❄ Winter semester

Compulsory elective courses (B) (min. 4 ECTS) 🎓 4
Regional Languages

Course	Code	ECTS
German I ❄	OJZ/721	🎓 2
German II ☀	OJZ/722	🎓 2
German III ☀	OJZ/723	🎓 2
German IV ☀	OJZ/724	🎓 2
German V ❄	OJZ/725	🎓 2
German VI ☀	OJZ/726	🎓 2
German Conversation ☀	OJZ/727	🎓 2
Czech for foreign students (beginners) ☀	UBO/XERAZ	🎓 2
Czech for foreign students (advanced) ☀	UBO/XERAP	🎓 2
Czech for foreigners A0 ☀	OJZ/550	🎓 0
German ❄		🎓 2
German ☀		🎓 2
Czech ❄		🎓 2
German ☀		🎓 2

Elective courses (C) (min. 20 ECTS in total)
Recommended electives

Course	Code	ECTS
IS Project ❄	UAI/601	🎓 5
Python Basics ❄	UAI/735I	🎓 4
Applied Programming (Python) ☀	UAI/655	🎓 3
Project Management and its Economy ☀	UAI/729I	🎓 6
3D Modeling and Printing ☀	UAI/675	🎓 4
Modeling and Simulation ❄	UAI/722	🎓 6
Academic Writing for Crossborder Studies ☀	OJZ/630	🎓 3
Data Mining ❄	UAI/665	🎓 4
Calculus II ☀	UMB/565I	🎓 3
EN for IT ☀	OJZ/935	🎓 2
Project (AI / DS / Math / SD) ☀	ELE	🎓 5
Computer Vision ☀	ELE	🎓 5
Natural Language Processing ☀	ELE	🎓 2,5
Big Data ☀	ELE	🎓 2,5
Algorithm & Data Structures ☀	ELE	🎓 5
Database Engineering ☀	ELE	🎓 5
Data Mining & Machine Learning ☀	ELE	🎓 5
Data Visualization ☀	ELE	🎓 5
Advanced Programming Techniques ☀	ELE	🎓 5
Software Engineering ☀	ELE	🎓 5
FPGA Programming ☀	ELE	🎓 5
Mathematics 2 ☀	ELE	🎓 5
Computational Logic ❄	ELE	🎓 5
Embedded Connectivity & Embedded Security ☀	ELE	🎓 5

Program specific subjects
MAID

Subject	Code	ECTS	Description
Study Placement ☀	UAI/056	🎓 0	Study Placement - THD (enroll in this course at USB, whenever you take semester at THD)
Thesis defense ❄☀	MTD	🎓 0	Master thesis defense
State Exam (part 1) ❄☀	SE1	🎓 0	Theoretical Fundamentals
State Exam (part 2) ❄☀	SE2	🎓 0	Artificial Intelligence
State Exam (part 3) ❄☀	SE3	🎓 0	Data Science

- Student cannot enroll language courses in his/her native language (applies to students with Czech/German native language, including dual native language).
- Language courses are recommended to complete in 1st and 2nd semester.

- 10 ECTS must be completed during summer semester at THD, another 10 ECTS can be completed any time during study (at USB/THD).
- Other than listed courses (offered at USB/THD) can be taken, however, electives should be related to AI and/or data science or computer science. Listed courses are recommended courses in EN.
- Courses with <5 students enrolled in the semester may not be opened.
- Additional language courses can also be enrolled as electives.

Important notes

- Foreign students (outside EU) must secure their VISA in time. You can chose whether you start at summer semester at THD or at winter semester at USB.
- Study regulations (enrollment, exams, etc.) differs at USB and THD. Students must always follow the regulations of the university where they study at the given semester.
  https://www.th-deg.de/en/students/documents#accordion-academic-regulations-master
  https://www.jcu.cz/en/university/documents/internal-regulations-of-the-usb, https://www.prf.jcu.cz/en/documents/study-regulations.html
- Total of 120 ECTS is required to complete the study. When moving from THD to USB (and vice versa), transcript of subjects and grades is required.
- Teaching semesters are summer semester at THD and winter semester at USB. Most subjects can be enrolled ONLY in summer OR winter semester.
- Internship and master thesis semesters (+ master seminar, AI Lab) can be conducted at USB or THD in summer or winter semesters.
- THD and USB semesters cannot be mixed – you can either study semester at THD or USB. Students must notify both universities about the intent for each semester (where they plan to study in upcoming semester).