Our Master programmes

Our Master's programmes

Master Computer Science 🇬🇧

- General Computer Science
- Data Science
- Scientific Computing

Master Bioinformatics 🇬🇧🇩🇪

Master Business Informatics 🇩🇪

Master Media Informatics 🇬🇧

Master Data Science 🇬🇧

Master Teacher Education CS 🇩🇪

How to get in an MSc programme?

Admission to Master programme

- CS Bachelor degree Uni Vienna $\rightarrow$ admission automatically
- Otherwise: Application required
- Hopefully: Congratulations, you succeeded!

Helpful links

- https://slw.univie.ac.at/en/studying/
- https://informatik.univie.ac.at/en/study/

Master Computer Science

Duration: 4 Semester (120 ECTS)

Degree: Master of Science (MSc)

3 possible variations in the master CS programme:
- General Computer Science
- Data Science
- Scientific Computing

Build around **8 areas of expertise**:
Algorithms, Data Analysis, Computer Graphics, Information
Management & Systems, Internet Computing & Software
Technology, Multimedia, Networks, and Parallel Computing.

Overview of Curriculum

- Mandatory courses:
  PAP, ASE, MSE, programming projects: P1, P2
- Elective courses: 9 modules

You can choose – BUT: There are rules.

- Selection based on so-called "Wahlmodulgruppen" (cf. Curriculum)

  Our English term for "Wahlmodulgruppe": **Cluster**

- Master thesis

Clusters („Wahlmodulgruppen")

- area of expertise
- constituted by set of proper courses
- each cluster has a gatekeeper module
  - ✓ gatekeeper permits entrance to courses
  - ✓ or evidence of competence ("oder Nachweis von entspr. Vorkenntnissen")
  - ☹ otherwise
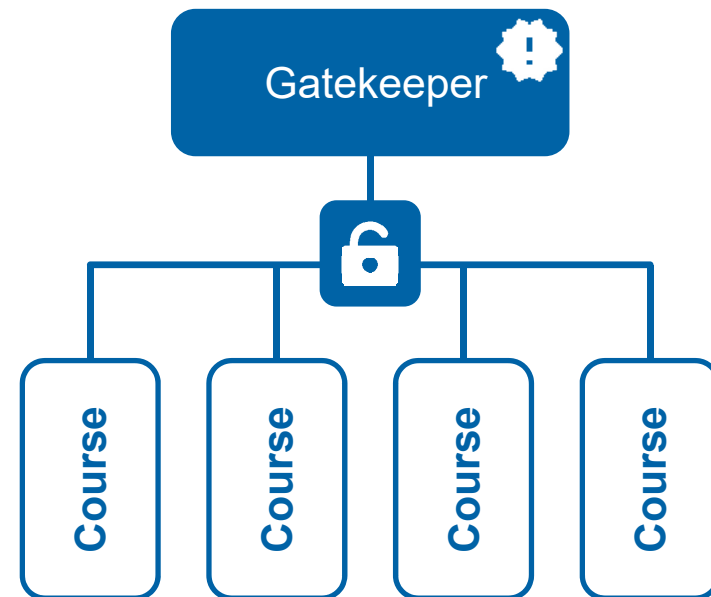
Cluster Algorithms

Gatekeeper

- **CAN**   Combinatorial and Numerical Algorithms

Modules

- **AAL**   Advanced Algorithms
- **HPA**   Numerical High Performance Algorithms
- **STL**   Software Tools and Libraries for Scientific Computing
- **DPA**   Distributed and Parallel Algorithms
- **AT-AL**   Advanced Topics in Algorithms

Cluster Data Analysis

Gatekeeper

- **FDA**   Foundations of Data Analysis

Modules

- **DM**   Data Mining
- **CO**   Computational Optimisation
- **NLP**   Natural Language Processing
- **VIS**   Visualisation and Visual Data Analysis
- **AT-DA**   Advanced Topics in Data Analysis

Cluster Parallel Computing

Gatekeeper

- **PC**   Parallel Computing

Modules

- **CC**   Cloud Computing
- **DSE**   Distributed Systems Engineering
- **HPC**   High Performance Computing
- **POP**   Program Optimisations and Runtime Systems
- **SDM**   Scientific Data Management
- **DPA**   Distributed and Parallel Algorithms
- **AT-PC**   Advanced Topics in Parallel Computing

Cluster Networks

Gatekeeper

- **CS**   Cooperative Systems

Modules

- **NTM**   Network Technologies for Multimedia

               Applications
- **NCE**   Network-Based Communication Ecosystems
- **SEC**   Network Security
- **AT-NET**   Advanced Topics in Network

Cluster Internet Computing & Software Technology

Gatekeeper

- **DSE**   Distributed Systems Engineering

Modules

- **CC**   Cloud Computing
- **IOP**   Interoperability
- **BPM**   Business Process Management
- **AT-ICS**   Advanced Topics in Internet Computing and Software Technology

Cluster Computer Graphics

Gatekeeper

- **GFX**   Foundations of Computer Graphics

Modules

- **CGA**   Cloud Gaming
- **GAT**   Gaming Technologies
- **IMS**   Image Synthesis
- **RCG**   Real-Time Computer Graphics
- **VIS**   Visualisation and Visual Data Analysis
- **AT-GFX**   Advanced Topics in Computer Graphics

Cluster Multimedia

Gatekeeper

- **SIP**   Signal and Image Processing

Modules

- **IPA**   Image Processing and Image Analysis
- **MCM**   Multimedia Content Management
- **MRE**   Multimedia Representation and Encoding
- **MRS**   Multimedia Retrieval and Content-Based Search
- **MST**   Multimedia and Semantic Technologies
- **NTM**   Network Technologies for Multimedia Applications
- **AT-MM**   Advanced Topics in Multimedia

Cluster Information Management & Systems Engineering

Gatekeeper

- **ISE**   Information Management & Systems Engineering

Modules

- **BI1**   Business Intelligence I
- **BI2**   Business Intelligence II
- **KE**   Knowledge Engineering
- **MCM**   Multimedia Content Management
- **SDM**   Scientific Data Management
- **AT-ISE**   Advanced Topics in Information Management & Systems Engineering

Computer Science Master Programmes

General Computer Science
- required 9 modules from min. 6 clusters (i.e. breadth stressed)
- max. 4 gatekeepers (i.e. also specialized lectures required)

Computer Science / Scientific Computing
- 4 modules from Parallel Computing
- 3 modules from Algorithms
- 1 module from Data Analysis
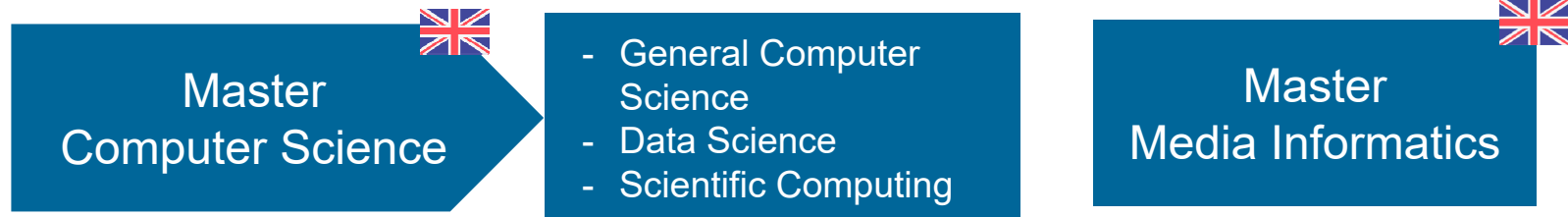- 1 module from Networks

Computer Science / Data Science
- 4 modules from Data Analysis
- 2 modules from Algorithms
- 1 module from Parallel Computing
- Application module ("Anwendungsfach" 12 ECTS)

Approval of Elective Cluster Modules

Required for:

| Master Computer Science 🇬🇧 | - General Computer Science
- Data Science
- Scientific Computing | Master Media Informatics 🇬🇧 |

For approval of module plan fill in the following form
(follow the links on our webpages)

- Computer Science
- Media Informatics

Note: take care of pre-requisites, courses from the bachelor programme cannot be reused a second time.

Some Remarks on Course Registration

Registration
- Register via U:SPACE and your u:account.

Late registration
- Attend kickoff class and write your name on attendance list.
- Consult the course instructors (Why too late? etc.)

Not present at kickoff class
- Usually you are unsubscribed from the course!
  Recommendation: Write an email!

Any kind of problem
- Always attend kickoff class.

Master General Computer Science

	Modul 1	Modul 2	Modul 3	Modul 4	Modul 5
1. Semester	Paralelle Architekturen	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV
2. Semester	Advanced Software Engineering	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV	Praktikum
3. Semester	Wissen-schaftl. Arbeiten · Master-arbeit	Gatekeeper / Cluster LV	Gatekeeper / Cluster LV	Praktikum	
4. Semester	Master Seminar	Masterarbeit			

Legende
Praktikum
Master Core
Cluster Lehrveranstaltungen
Masterarbeit

Master Computer Science / Scientific Computing

	Modul 1		Modul 2	Modul 3	Modul 4	Modul 5
1. Semester	Paralelle Architekturen		Algorithms Cluster LV	Parallel Computing Cluster LV	Data Analysis Cluster LV	Networks Cluster LV
2. Semester	Advanced Software Engineering		Algorithms Cluster LV	Parallel Computing Cluster LV	Parallel Computing Cluster LV	Praktikum
3. Semester	Wissen- schaftl. Arbeiten	Master- arbeit	Algorithms Cluster LV	Parallel Computing Cluster LV	Praktikum	
4. Semester	Master Seminar	Masterarbeit				

Legende
Praktikum
Core Informatik
Cluster Lehrveranstaltungen
Masterarbeit

Master Media Informatics

Duration: 4 Semester (120 ECTS)

Degree: Master of Science (MSc)

Your studies will consist of:

- focus on Advanced Software Engineering

- 2 guided project works

- focus on Research Methods

- your selected „elective modules"

- selected specialisation:

  - Digital Media Production Techniques

  - Game Technologies

Master Media Informatics

	Modul 1		Modul 2	Modul 3	Modul 4	Modul 5
1. Semester	Wahlmodul Vertiefung Medieninformatik (6 ECTS)		Anwendungsfach (6 ECTS)	Wahlmodul Vertiefung Medieninformatik (6 ECTS)	Wahlmodulgruppe Multimedia (6 ECTS)	Wahlmodulgruppe Computer Graphics (6 ECTS)
2. Semester	Advanced Software Engineering (6 ECTS)		Anwendungsfach (6 ECTS)	Wahlmodulgruppe Multimedia (6 ECTS)	Wahlmodulgruppe Multimedia (6 ECTS)	Praktikum Informatik 1 (6 ECTS)
3. Semester	Research Methods (3 ECTS)	Master-arbeit	Anwendungsfach (6 ECTS)	Wahlmodulgruppe Multimedia (6 ECTS)	Praktikum Informatik 2 (12 ECTS)	
4. Semester	Master Seminar (3 ECTS)	Masterarbeit (30 ECTS)				

Legende
Praktikum
Master Core
Wahlmodul Vertiefung Medieninformatik
Anwendungsfach
Wahlmodulgruppen
Masterarbeit

Master Business Informatics

Duration: 4 Semester (120 ECTS)

Degree: Master of Science (MSc)

The programe consists of:

- Focus on **Computer Science**
  Advanced Software Engineering, Cooperative Systems, Foundations of Data Analysis

- Focus on **Scientific Work**

- Focus on **Economics**
  Business Management, Business Administration and Commercial Law

- Focus on **Business Informatics**
  Business process management, Knowledge Engineering, Interoperability, Metamodeling, Digital Economy, Secure Digital Business

- **Specialisation**
  Specialisation Business Intelligence, Specialisation Semantic Information Systems

Master Business Informatics

	Modul 1		Modul 2	Modul 3	Modul 4	Modul 5	
1. Semester	Cooperative Systems (6 ECTS)		Foundations of Data Analysis (6 ECTS)	Geschäftsprozess-management (6 ECTS)	Knowledge Engineering (6 ECTS)	Unter-nehmens-führung (6 ECTS)	Ausge-wählte Bereiche der Betriebs-wirtschafts-lehre und des Wirtschafts-rechts (12 ECTS)
2. Semester	Advanced Software Engineering (6 ECTS)		Kernfachkombination (6 ECTS)	Interoperabilität (6 ECTS)	Metamodellierung (6 ECTS)		
3. Semester	Wissen-schaftl. Arbeiten (3 ECTS)	Master-arbeit	Kernfachkombination (6 ECTS)	Digitale Ökonomie (6 ECTS)	Sichere Digitale Wirtschaft (6 ECTS)		
4. Semester	Master Seminar (3 ECTS)	Masterarbeit (30 ECTS)					

Legende
Informatik
Kernfachkombination
Wirtschaftsinformatik
Wirtschaftsfächer
Masterarbeit

Master Bioinformatics

Duration: 4 Semester (120 ECTS)

Degree: Master of Science (MSc)

Graduates...

- act as a link between biology and computer science

- develop algorithms and software for the analysis and detection of complex biological data

- simulate and model biological processes

- deal with future challenges such as data integration, data mining and visualization of complex data

- have excellent opportunities on the job market

Master Bioinformatics

1. Semester	Basiswissen Biologie (10 ECTS)	Basiswissen Informatik (10 ECTS)	Basiswissen Mathematik (10 ECTS)
2. Semester	Algorithmische Bioinformatik (6 ECTS)	Sequenz- und Struktur Bioinformatik (6 ECTS)	Spezialisierung Bioinformatik / Spezialisierung Fachdisziplin (zusammen 18 ECTS)
3. Semester	Statistische Methoden der Bioinformatik (6 ECTS)	Softwareentwicklungsprojekt Bioinformatik (8 ECTS)	Spezialisierung Bioinformatik / Spezialisierung Fachdisziplin (zusammen 16 ECTS)
4. Semester	Defensio (3 ECTS)	Masterarbeit (27 ECTS)	

Legende
Basiswissen
Bioinformatik
Spezialisierungen
Masterarbeit

Master Data Science

Duration: 4 Semester (120 ECTS)

Degree: Master of Science (MSc)

While the masters degree in data science prepares for a doctoral degree in mathematics, computer science, or statistics, it also teaches **practical skills**, such as:

- handling of huge amounts of data,

- statistical analysis of complex data and

- development, implementation and analysis of efficient algorithms for data analysis, which are in great demand in many industries.

Master Data Science

1. Semester	Doing Data Science (DEL)	Math for Data Science (MDS)	Optimization Methods for Data Science (OMD)	Introduction to Machine Learning (IML)	Statistics for Data Science (SDS)	Specialization
2. Semester	Data Ethics and Legal Issues (DEL)	Mining Massive Data (MDD)	Visual and Exploratory Data Analysis (VDE)	Specialization		
3. Semester	Research Seminar (DAP)	Data Science Project (DAP)	Specialization			
4. Semester	Master Thesis					

Key

Modulname (Abbrevation)
Master Core
Common Lectures BA/DS/DH
Elective
Master Thesis

universität
wien
Fakultät für Informatik

Master Teacher Education CS

Duration: 4 Semester (26 [56] ECTS)

Degree: Master of Education (MEd)

Language: German

The aim of the teacher education programme in computer science is to qualify graduates for entry into the following fields of work:

- teacher of computer science (secondary level) at general and vocational schools

- Computer science trainer*in the extracurricular education sector

- Computer science occupations outside the educational sector

Master Teacher Education CS

1. Semester	**Wahlpflichtbereich** **Masterstudium** **Unterrichtsfach Informatik** (UF MA INF 01)	**Spezielle Kapitel der** **Fachdidaktik Informatik** (UF MA INF 02)
2. bzw. 3. Semester	**Wahlpflichtbereich** Masterstudium Unterrichtsfach **Informatik** (UF MA INF 01)	**Spezielle Kapitel der** **Fachdidaktik Informatik** (UF MA INF 02)
2. bzw. 3. Semester	**Forschungsmethoden im** Kontext der Informatik - Bildung (UF MA INF 03)	**Fachdidaktische Begleitung der** **Praxisphase** (UF MA INF 04)
4. Semester	**Abschlussphase**	

Legende	
Fachwissenschaft Informatik	
Fachdidaktik Informatik	
Praxisphase	
Abschlussphase	
VV ... Verpflichtende Voraussetzungen	
EV ... Empfohlene Voraussetzungen	

Further information

- **Faculty website**
  - http://informatik.univie.ac.at/

➥ Still questions?