



universität  
wien

Fakultät für Informatik

A photograph of a modern, bright computer lab with students working at long white tables. Large windows on the right side provide natural light, and several green plants are placed throughout the room. In the foreground, a student with glasses is focused on his laptop. Other students are visible in the background, some looking at their screens and others talking. The atmosphere is collaborative and academic.

# 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





## How to get in an MSc programme?

### Admission to Master programme

- CS Bachelor degree U Vienna → 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

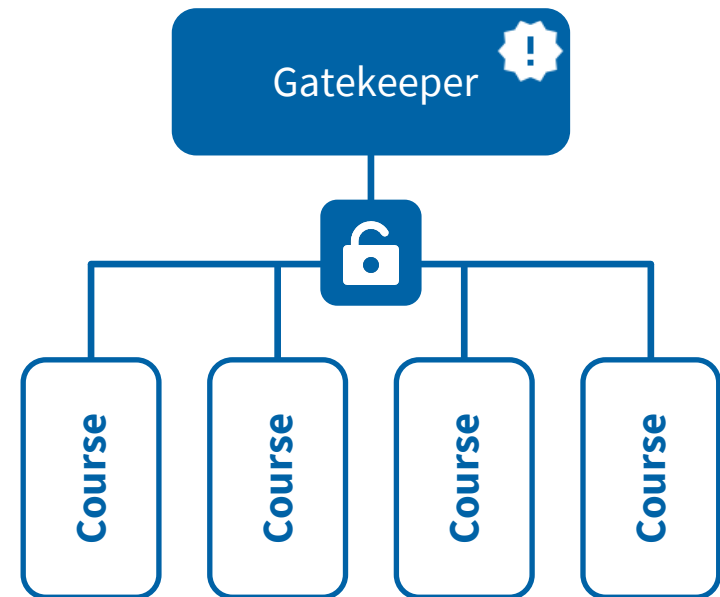
- Mandatory courses:  
PAP, ASE, MSE, programming projects: P1, P2
- Elective courses: 9 modules

**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:



**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 | Parallele 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 | Wissenschaftl. Arbeiten       | Masterarbeit            | 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 | Parallele 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 | Wissenschaftl. Arbeiten       | Masterarbeit          | Algorithms Cluster LV         | Parallel Computing Cluster LV | Praktikum           |
| 4. Semester | Master Seminar                | Masterarbeit          |                               |                               |                     |

|                             |
|-----------------------------|
| Legende                     |
| Praktikum                   |
| Core Informatik             |
| Cluster Lehrveranstaltungen |
| Masterarbeit                |



## Master Computer Science / Data Science

|             | Modul 1                       | Modul 2        | Modul 3                  | Modul 4                  | Modul 5                       |
|-------------|-------------------------------|----------------|--------------------------|--------------------------|-------------------------------|
| 1. Semester | Parallele Architekturen       | Anwendungsfach | Data Analysis Cluster LV | Algorithms Cluster LV    | Paralell Computing Cluster LV |
| 2. Semester | Advanced Software Engineering | Anwendungsfach | Data Analysis Cluster LV | Algorithms Cluster LV    | Praktikum                     |
| 3. Semester | Wissenschaftl. Arbeiten       | Masterarbeit   | Data Analysis Cluster LV | Data Analysis Cluster LV | Praktikum                     |
| 4. Semester | Master Seminar                | Masterarbeit   |                          |                          |                               |

|                             |
|-----------------------------|
| Legende                     |
| Praktikum                   |
| Core Informatik             |
| Anwendungsfach              |
| Cluster Lehrveranstaltungen |
| Masterarbeit                |



## Master Media Informatics

**Duration:** 4 Semester (120 ECTS)

**Degree:** Master of Science (MSc)

# Master Media Informatics

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

# Master Business Informatics

|             | Modul 1                                   |              | Modul 2                                  | Modul 3                                | Modul 4                                 | Modul 5                         |                                                                                          |
|-------------|-------------------------------------------|--------------|------------------------------------------|----------------------------------------|-----------------------------------------|---------------------------------|------------------------------------------------------------------------------------------|
| 1. Semester | Cooperative Systems<br>(6 ECTS)           |              | Foundations of Data Analysis<br>(6 ECTS) | Geschäftsprozessmanagement<br>(6 ECTS) | Knowledge Engineering<br>(6 ECTS)       | Unternehmensführung<br>(6 ECTS) | Ausgewählte Bereiche der Betriebswirtschaftslehre und des Wirtschaftsrechts<br>(12 ECTS) |
| 2. Semester | Advanced Software Engineering<br>(6 ECTS) |              | Kernfachkombination<br>(6 ECTS)          | Interoperabilität<br>(6 ECTS)          | Metamodellierung<br>(6 ECTS)            |                                 |                                                                                          |
| 3. Semester | Wissenschaftl. Arbeiten<br>(3 ECTS)       | Masterarbeit | Kernfachkombination<br>(6 ECTS)          | Digitale Ökonomie<br>(6 ECTS)          | Sichere Digitale Wirtschaft<br>(6 ECTS) |                                 |                                                                                          |
| 4. Semester | Master Seminar<br>(3 ECTS)                |              | Masterarbeit<br>(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<br>Biologie<br>(10 ECTS)                      |                                                          | Basiswissen<br>Informatik<br>(10 ECTS) |                                  | Basiswissen<br>Mathematik<br>(10 ECTS) |                                  |
| 2. Semester | Algorithmische<br>Bioinformatik<br>(6 ECTS)               | Sequenz- und Struktur<br>Bioinformatik<br>(6 ECTS)       | Spezialisierung<br>Bioinformatik       |                                  | Spezialisierung<br>Fachdisziplin       |                                  |
|             | (zusammen 18 ECTS)                                        |                                                          |                                        |                                  |                                        |                                  |
| 3. Semester | Statistische<br>Methoden der<br>Bioinformatik<br>(6 ECTS) | Softwareentwicklungsprojekt<br>Bioinformatik<br>(8 ECTS) |                                        | Spezialisierung<br>Bioinformatik |                                        | Spezialisierung<br>Fachdisziplin |
|             | (zusammen 16 ECTS)                                        |                                                          |                                        |                                  |                                        |                                  |
| 4. Semester | Defensio<br>(3 ECTS)                                      | Masterarbeit<br>(27 ECTS)                                |                                        |                                  |                                        |                                  |

|                   |
|-------------------|
| Legende           |
| Basiswissen       |
| Bioinformatik     |
| Spezialisierungen |
| Masterarbeit      |



## Further information

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

→ Still questions?

