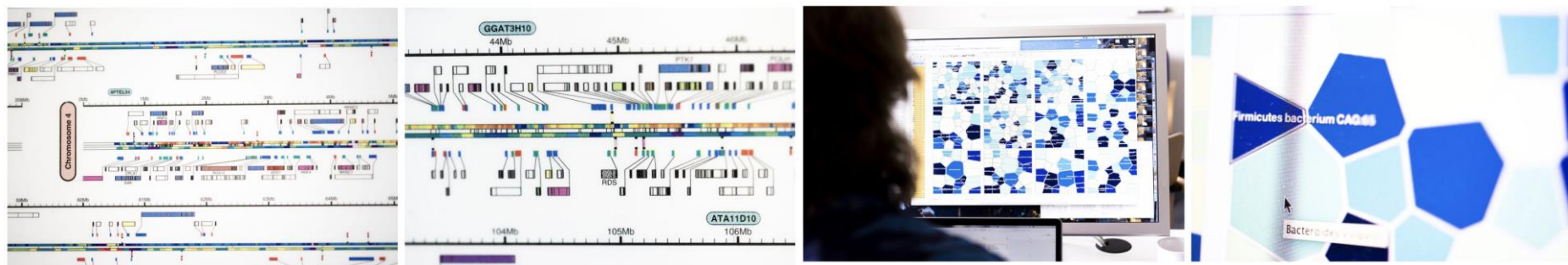


# Introduction to M.Sc. Bioinformatics Winter Semester 2026/2027

## Variants A, B, and C



Dr. Markus Zimmermann  
Studies Coordinator  
Bioinformatics & Medical Informatics

# Welcome!

Department of Computer Science,  
University of Tübingen



Image: CC BY-SA 4.0 (Dktue)  
<https://commons.wikimedia.org/wiki/File:Tuebingen-gebäude-auf-dem-sand-1.jpg>



Institute for Bioinformatics and  
Medical Informatics (IBMI)



# Welcome!

## Campus “Morgenstelle”



Life Sciences and Lecture Halls



Medical Faculty and Clinics



Botanical Garden

# Department of Computer Science

## Welcome to the Department of Computer Science!

Head & Committees

Research Groups

Staff

[Wilhelm Schickard](#) ushered in the era of computing devices in Tübingen – and never has computer science been as exciting as today, almost 400 years later. The more than [40 groups](#) of the Wilhelm-Schickard Institute (WSI) teach, research and apply **computer science at top level**.

The [research focus](#) of the institute lies in the core areas of **computer science** as well as in **bioinformatics**, **media informatics** and **cognitive science**. Tübingen's computer scientists benefit from the diverse research environment within and outside the University of Tübingen.

The focus on **machine learning** is currently being rapidly expanded, in particular through the [Cluster of Excellence "Machine Learning in Science"](#) and the Baden-Württemberg [Cyber Valley Initiative](#), which also includes the Max Planck Institute for Intelligent Systems and the University of Stuttgart. Together with these strong partners, the **Department of Computer Science** forms one of the centres for **machine learning** in Germany and Europe.

The [study of computer science in Tübingen](#) is correspondingly versatile and at the pulse of time: Join us in studying this young science in our Bachelor's and Master's programmes and become part of the success story!

### Facts & Numbers

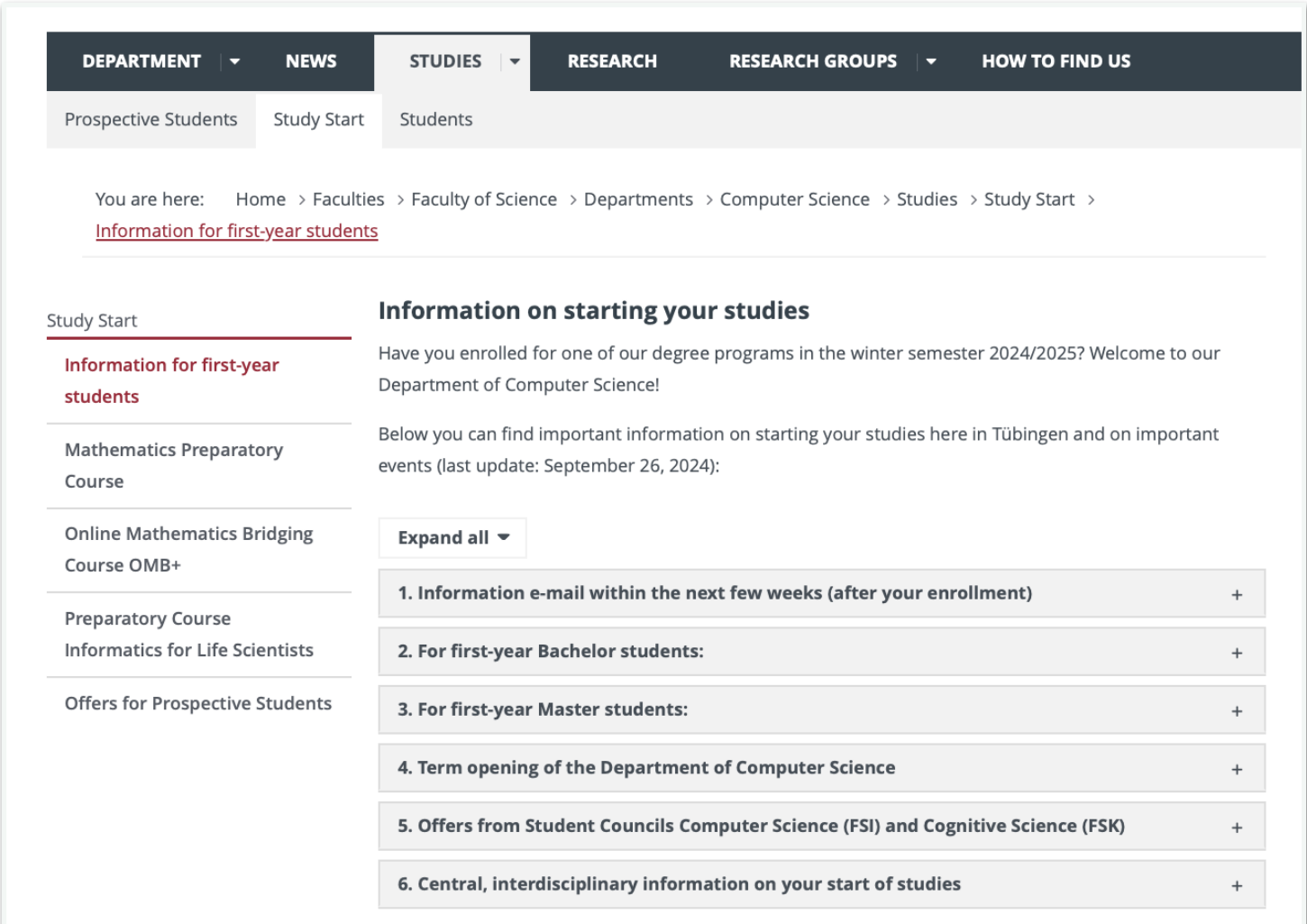
|          |                |                 |                         |
|----------|----------------|-----------------|-------------------------|
| about    | in             | currently       | third-party funded with |
| 2000     | 19             | 44              | 12                      |
| students | study programs | research groups | M € in 2021             |



<https://uni-tuebingen.de/de/13825>

# CS Department Webpages

- Information on the department
- Information on the different research groups
- Information on studies



The screenshot displays the 'STUDIES' section of the CS Department website. The navigation bar includes 'DEPARTMENT', 'NEWS', 'STUDIES', 'RESEARCH', 'RESEARCH GROUPS', and 'HOW TO FIND US'. Under 'STUDIES', there are links for 'Prospective Students', 'Study Start', and 'Students'. The 'Study Start' link is active, leading to a page titled 'Information on starting your studies'. The page content includes a welcome message for students enrolling in the winter semester 2024/2025, a list of important information for starting studies, and a sidebar with links to various preparatory courses and offers for prospective students.

**DEPARTMENT** ▾ **NEWS** **STUDIES** ▾ **RESEARCH** **RESEARCH GROUPS** ▾ **HOW TO FIND US**

Prospective Students Study Start Students

You are here: Home > Faculties > Faculty of Science > Departments > Computer Science > Studies > Study Start > [Information for first-year students](#)

**Study Start**

**Information for first-year students**

Mathematics Preparatory Course

Online Mathematics Bridging Course OMB+

Preparatory Course Informatics for Life Scientists

Offers for Prospective Students

**Information on starting your studies**

Have you enrolled for one of our degree programs in the winter semester 2024/2025? Welcome to our Department of Computer Science!

Below you can find important information on starting your studies here in Tübingen and on important events (last update: September 26, 2024):

**Expand all** ▾

1. Information e-mail within the next few weeks (after your enrollment) +
2. For first-year Bachelor students: +
3. For first-year Master students: +
4. Term opening of the Department of Computer Science +
5. Offers from Student Councils Computer Science (FSI) and Cognitive Science (FSK) +
6. Central, interdisciplinary information on your start of studies +

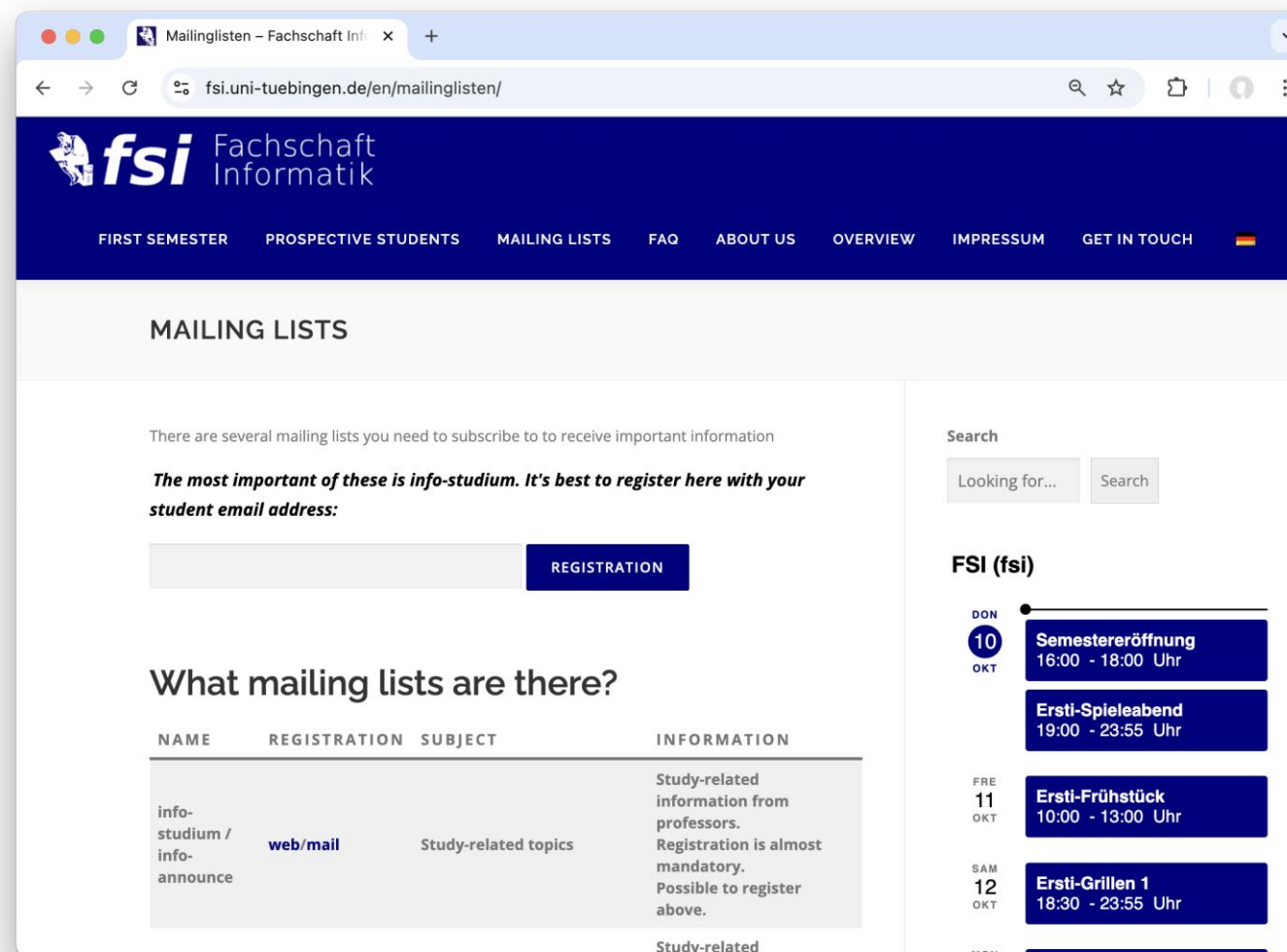


<https://uni-tuebingen.de/en/197597>

# Student Council (Fachschaft)

- Represents all students in the CS department
- Provides infos and maintains mailing lists

<https://www.fsi.uni-tuebingen.de/en/>



- Please join their **info-studium** mailing list !

<https://www.ibmi.uni-tuebingen.de>



Faculty of Science / Faculty of Medicine

## Institute for Bioinformatics and Medical Informatics (IBMI)

INSTITUTE

NEWS

EDUCATION

PHD

RESEARCH

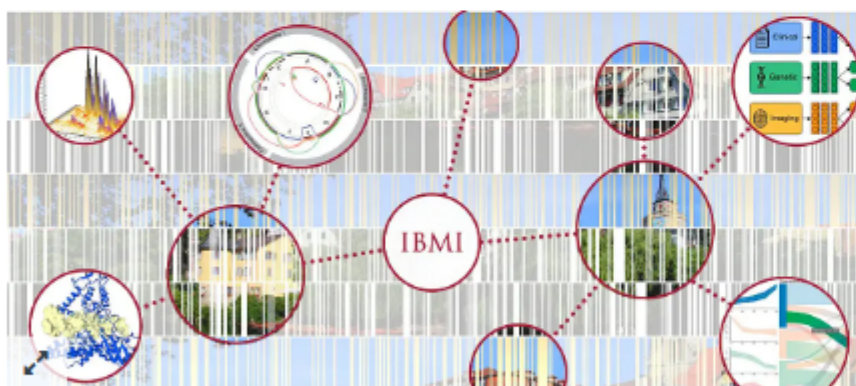
EVENTS

Members

Management

How To Find Us

You are here: [Home](#) > [Faculties](#) > [Faculty of Science](#) > [Departments](#) > [Interfaculty Facilities](#) > [Institute](#)



With the establishment of the **Institute for Bioinformatics and Medical Informatics (IBMI)** the University of Tübingen brings together expertise in informatics, medicine, and the life sciences in a unique institute bridging the existing faculties of science and medicine.

Over the last decades, the use of computer science methods has fundamentally changed research in the life

sciences and with the ongoing digital transformation and a pervasive application of artificial intelligence, the entire field is facing new and pivotal challenges. Pooling the expertise in an interdisciplinary institute is thus essential for effective research as well as the comprehensive education of qualified scientists in the digitized life sciences.

## News

21.04.2026

### Daniel Huson ISCB Fellow 2026

Professor Daniel Huson has been appointed an 'ISCB Fellow'.

[Read more](#) →

# Institute for Bioinformatics and Medical Informatics



**Dr. Mete Akgün**

📄 [Medical Data Privacy and Privacy-Preserving ML on Healthcare Data \(MDPPML\)](#)

✉ [mete.akguen@uni-tuebingen.de](mailto:mete.akguen@uni-tuebingen.de)



**Jun.-Prof. Dr. Thomas Küstner**

📄 [Medical Image and Data Analysis](#)

✉ [thomas.kuestner@med.uni-tuebingen.de](mailto:thomas.kuestner@med.uni-tuebingen.de)



**Dr. Franz Baumdicker**

📄 [Mathematical and Computational Population Genetics](#)

✉ [franz.baumdicker@uni-tuebingen.de](mailto:franz.baumdicker@uni-tuebingen.de)



**Prof. Dr. Andrei Lupas**

📄 [Protein Evolution](#)

✉ [andrei.lupas@tuebingen.mpg.de](mailto:andrei.lupas@tuebingen.mpg.de)



**Prof. Dr. Philipp Berens**

📄 [Data Science for Vision Research](#)

✉ [philipp.berens@uni-tuebingen.de](mailto:philipp.berens@uni-tuebingen.de)



**Prof. Dr. Sven Nahnsen**

📄 [Quantitative Biology Center \(QBiC\)](#)

✉ [sven.nahnsen@uni-tuebingen.de](mailto:sven.nahnsen@uni-tuebingen.de)

# Institute for Bioinformatics and Medical Informatics



**Prof. Dr. Frank Böckler**

📁 [Molecular Design & Pharmaceutical Biophysics](#)

✉ [frank.boeckler@uni-tuebingen.de](mailto:frank.boeckler@uni-tuebingen.de)



**Prof. Dr. Kay Nieselt**

📁 [Integrative Transcriptomics](#)

✉ [kay.nieselt@uni-tuebingen.de](mailto:kay.nieselt@uni-tuebingen.de)



**Prof. Dr. Manfred Claassen**

📁 [Clinical bioinformatics & Machine learning in translational single-cell biology](#)

✉ [manfred.claassen@med.uni-tuebingen.de](mailto:manfred.claassen@med.uni-tuebingen.de)



**Prof. Dr. Stephan Ossowski**

📁 [Computational Genomics](#)

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**Prof. Dr. Carsten Eickhoff**

📁 [E-Health and Medical Data Science](#)

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**Prof. Dr. Nico Pfeifer**

📁 [Methods in Medical Informatics](#)

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# Institute for Bioinformatics and Medical Informatics



**Prof. Dr. Daniel Huson**

📄 [Algorithms in Bioinformatics](#)  
✉ [daniel.huson@uni-tuebingen.de](mailto:daniel.huson@uni-tuebingen.de)



**Jun.-Prof. Dr. Harry Scells**

📄 <https://scells.me>  
✉ <mailto:harrisen.scells@uni-tuebingen.de>



**Prof. Dr.-Ing. Oliver Kohlbacher**

📄 [Applied Bioinformatics](#)  
✉ [oliver.kohlbacher@uni-tuebingen.de](mailto:oliver.kohlbacher@uni-tuebingen.de)



**Prof. Dr. Detlef Weigel**

📄 [Molecular Biology](#)  
✉ [detlef.weigel@tuebingen.mpg.de](mailto:detlef.weigel@tuebingen.mpg.de)



**Dr. Thales Kronenberger**

📄 [Medical Microbiology and Hygiene - Kronenberger Group](#)  
✉ [thales.kronenberger@uni-tuebingen.de](mailto:thales.kronenberger@uni-tuebingen.de)

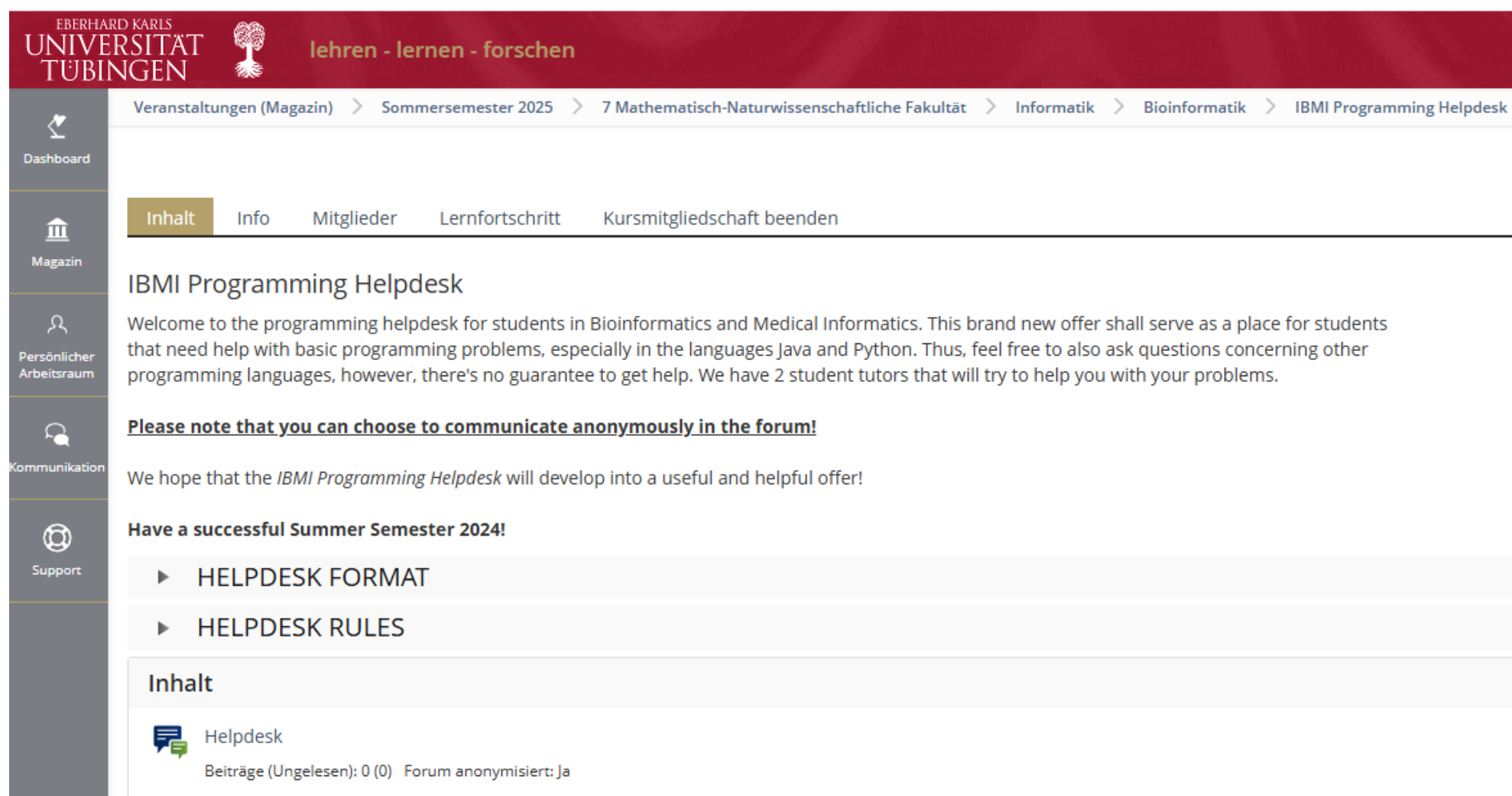


**Prof. Dr. Nadine Ziemert**

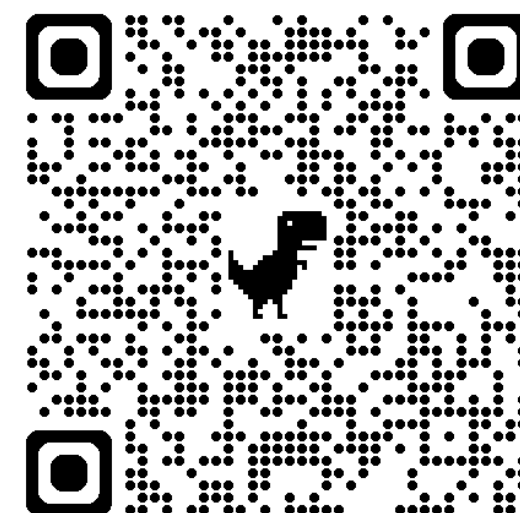
📄 [Translational Genome Mining for Natural Products](#)  
✉ [nadine.ziemert@uni-tuebingen.de](mailto:nadine.ziemert@uni-tuebingen.de)

# IBMI - Programming Helpdesk

- For Bioinformatics and Medical Informatics, with a focus on variant B students
- Offers basic help with problems in Java or Python
- Organized via ILIAS



The screenshot shows the ILIAS interface for the IBMI Programming Helpdesk. The top navigation bar includes the university logo and the text "lehren - lernen - forschen". Below this, a breadcrumb trail reads: "Veranstaltungen (Magazin) > Sommersemester 2025 > 7 Mathematisch-Naturwissenschaftliche Fakultät > Informatik > Bioinformatik > IBMI Programming Helpdesk". A sidebar on the left contains icons for "Dashboard", "Magazin", "Persönlicher Arbeitsraum", "Kommunikation", and "Support". The main content area has tabs for "Inhalt", "Info", "Mitglieder", "Lernfortschritt", and "Kursmitgliedschaft beenden". The "Inhalt" tab is active, displaying the title "IBMI Programming Helpdesk" and a welcome message: "Welcome to the programming helpdesk for students in Bioinformatics and Medical Informatics. This brand new offer shall serve as a place for students that need help with basic programming problems, especially in the languages Java and Python. Thus, feel free to also ask questions concerning other programming languages, however, there's no guarantee to get help. We have 2 student tutors that will try to help you with your problems." Below this, a note states: "Please note that you can choose to communicate anonymously in the forum!". A message follows: "We hope that the *IBMI Programming Helpdesk* will develop into a useful and helpful offer!". A section titled "Have a successful Summer Semester 2024!" contains two expandable items: "HELPDESK FORMAT" and "HELPDESK RULES". At the bottom, the "Inhalt" section shows a "Helpdesk" icon and the text "Beiträge (Ungelesen): 0 (0) Forum anonymisiert: Ja".



[Link](#)

# Studies Administration

## Board of Examiners BSc/MSc Bioinformatics

Secretary: Susanne Mischorr

[pruefungsamt.bioinformatik@uni-tuebingen.de](mailto:pruefungsamt.bioinformatik@uni-tuebingen.de)

Chair: Prof. Daniel Huson

[daniel.huson@uni-tuebingen.de](mailto:daniel.huson@uni-tuebingen.de)

## Studies coordinator

Dr. Markus Zimmermann

[m.zimmermann@uni-tuebingen.de](mailto:m.zimmermann@uni-tuebingen.de)

## Dean of Studies & Studies Advisor

Prof. Kay Nieselt

[kay.nieselt@uni-tuebingen.de](mailto:kay.nieselt@uni-tuebingen.de)

# Networking and sharing Information

- **Avoid duplicate requests:**

Many questions (e.g. about exams, deadlines, regulations) are asked repeatedly to different people (coordinator, professors, examination office)

- **Share information with each other:**

If you receive an answer to a general question, please make it accessible to your colleagues

- **Create a communication channel:**

Use a group chat or forum (e.g. WhatsApp, Discord, ..) to distribute relevant information

- **Forward important information (FYI):**

When you receive official answers, you are welcome to forward them to me  
Please clearly mark your email as “FYI – no action required”

# Alma, Course Pages, Ilias and Moodle

- Catalog of courses Alma:
  - <https://alma.uni-tuebingen.de>
  - Contains all courses offered at the University
- Alma pages usually contain *links* to individual course webpages and pages on the learning platforms:
  - Ilias: <https://ovidius.uni-tuebingen.de>
  - Moodle: <https://moodle.zdv.uni-tuebingen.de>
- Access via: ZDV-Login

# Search for courses on Alma



Browse menu

Change role  
Dozent/-in Pharmaceutical Institute

HomeCourse organization**Studies offered**OrganisationService

You are here: [Home](#) > [Studies offered](#) > [Search for courses](#)

## Search for courses

 [Save search](#)

Search terms

Term



Search

 [Show all possible search criteria](#)

 [Help for search](#)

# Use Advanced Search on Alma

EBERHARD-KARLS-UNIVERSITÄT TUBINGEN alma

Browse menu

Home Course organization **Studies offered**

You are here: [Home](#) > [Studies offered](#)

## Studies offered

**Search for courses**  
Search for courses by search terms or by extended search criteria.

[Show current courses](#)  
The courses of current day will be shown (incl. date, room and teaching person). The date can be changed manually or by a calendar function.

[Show university course catalog](#)  
Show all courses in a hierarchic structure.

▶ [Module descriptions](#)  
Module descriptions

Save search

Search terms  ⓘ

Term

Search [Show all possible search criteria](#) ⓘ [Help for search](#)

Home Course organization **Studies offered** Organisation Service

You are here: [Home](#) > [Studies offered](#) > [Search for courses](#)

## Search for courses

Search Reset [Show only quick search criteria](#) ⓘ [Help for search](#) Save search

**Basic data** ▼

Search terms  ⓘ

Term-dependent title

Number

Term

Kind of course =  +

Teaching language =  +

**Structure** ▼

Organizational unit =  [Select](#)

Courses of study =  [Select](#)

**Instructors, locations and dates** ▼

Instructors  [Select](#)

Room =  [Select](#)

Date of course  ⓘ

Weekday =  +

# Alma, Course Pages, Ilias and Moodle



Browse menu

Change role

[Home](#) | [Course organization](#) | **[Studies offered](#)** | [Organisation](#) | [Service](#)

You are here: [Home](#) > [Studies offered](#) > [Search for courses](#)

## Detail view

Sequence Bioinformatics | BIOINF4110 (entspricht BIO-4110) | Veranstaltung

Back

 1 / 1 

Choose term

Term

More functions

[🕒 Information for Periods of Application](#) [📄 Reports](#)

### Term planning

Events

Contents

University course catalog

Linked examinations

Modules / Courses of study

Basic data ▾

|                     |                                                       |                    |                       |
|---------------------|-------------------------------------------------------|--------------------|-----------------------|
| Title               | Sequence Bioinformatics                               | Eventtype          | Lecture/Exercise      |
| Number              | BIOINF4110 (entspricht BIO-4110)                      | Frequency of offer | every second semester |
| Short comment       | 9 CP                                                  |                    |                       |
| Organizational unit | • Department of Computer Science (person responsible) |                    |                       |

Sequence Bioinformatics ▾

# Alma, Course Pages, Ilias and Moodle



Browse menu

Change role

Dozent/-in Pharmaceutical Institute

MZ

60

Home

Course organization

Studies offered

Organisation

Service

Sequence Bioinformatics

Basic data

Teaching language

english

admitted:

-

Responsible

o. Prof. Dr. math. Daniel Huson

Events

Information for Periods of Application

Export data as iCalendar (.ics)

Showing single dates

Open details

| Changes                                                                             | Rhythm      | Weekday | From - To           | Cancellation date                                                                                | Start date...End date       | Exp. Att. | Comment        | Performing lecturers | Room                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|-------------|---------|---------------------|--------------------------------------------------------------------------------------------------|-----------------------------|-----------|----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | weekly      | Mon     | 10:00 AM - 12:00 PM | <ul style="list-style-type: none"><li>12/28/2026</li><li>01/04/2027</li></ul>                    | Oct 12, 2026 - Feb 1, 2027  |           | Vorlesung      |                      |  Hörsaal.1.F119.(Informatik/Kriminologie)                                                                                                                                |
|  | weekly      | Wed     | 10:00 AM - 12:00 PM | <ul style="list-style-type: none"><li>12/23/2026</li><li>12/30/2026</li><li>01/06/2027</li></ul> | Oct 14, 2026 - Jan 27, 2027 |           | Vorlesung      |                      |  Hörsaal.1.F119.(Informatik/Kriminologie)                                                                                                                                |
|  | weekly      | Mon     | 8:00 AM - 10:00 AM  | <ul style="list-style-type: none"><li>12/28/2026</li><li>01/04/2027</li></ul>                    | Oct 19, 2026 - Feb 1, 2027  |           | Übung          |                      |  Seminarraum.C215.(Informatik.Sand.14)                                                                                                                                   |
|  | weekly      | Tue     | 8:00 AM - 10:00 AM  | <ul style="list-style-type: none"><li>12/29/2026</li><li>01/05/2027</li></ul>                    | Oct 20, 2026 - Feb 2, 2027  |           | Übung          |                      |  Seminarraum.C215.(Informatik.Sand.14)                                                                                                                                   |
|  | weekly      | Wed     | 8:00 AM - 10:00 AM  | <ul style="list-style-type: none"><li>12/23/2026</li><li>12/30/2026</li><li>01/06/2027</li></ul> | Oct 21, 2026 - Feb 3, 2027  |           | Übung          |                      |  Seminarraum.C215.(Informatik.Sand.14)<br> F122.Hörsaal.2.(Informatik/Kriminologie) |
|                                                                                     | single date | Mon     | 10:00 AM - 12:00 PM |                                                                                                  | Nov 30, 2026                |           | Klausur Teil 1 |                      |  Hörsaal.N10.(Bio.Hörsaalgebäude.AdM.3)                                                                                                                                  |
|                                                                                     | single date | Mon     | 10:00 AM - 12:00 PM |                                                                                                  | Feb 1, 2027                 |           | Klausur Teil 2 |                      |  Hörsaal.N10.(Bio.Hörsaalgebäude.AdM.3)<br> Hörsaal.N11.(Bio.Hörsaalgebäude.AdM.3)  |

# Alma, Course Pages, Ilias and Moodle



Browse menu



Change role

Dozent/-in Pharmaceutic

Home

Course organization

Studies offered

Organisation

You are here: [Home](#) > [Studies offered](#) > [Search for courses](#)

## Detail view

Sequence Bioinformatics | BIOINF4110 (entspricht BIO-4110) | Veranstaltung

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Choose term

Term

Winter 2026/27 

More functions

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 Reports

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University course catalog

Linked examinations

Modules / Courses of study

Recommendation 

More information [here](#).

Attention: Occasionally, you will find more information without being logged in.

# Signing Up for Courses

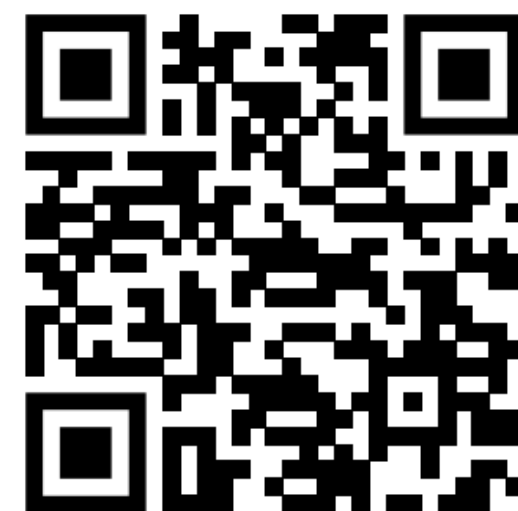
In most cases, you will have to sign up for a course in *two* steps:

- First, most courses require that you *enroll* via Ilias or Moodle to get access to materials, assignments and tutorials. **Do this early.**
- Second, you must use Alma (or in rare cases contact the board-of-examiners' secretary) to *register* for the course exam. **Do this second.**  
(Rarely, a separate document is needed)

# PO and Module Handbook

- The “Prüfungs- und Studienordnung der Universität Tübingen für die Studiengänge Bioinformatik, ... und Medizininformatik ... Master of Science (M.Sc.) 2021” (PO) contains the regulations for the MSc Bioinformatics program.
- The PO lists the *modules* that you must complete.  
(2 documents: general and special provisions. Please browse both documents!)
- The *module handbook* contains the details of the modules.  
(course descriptions, study areas, ECTS, prerequisites, etc.)

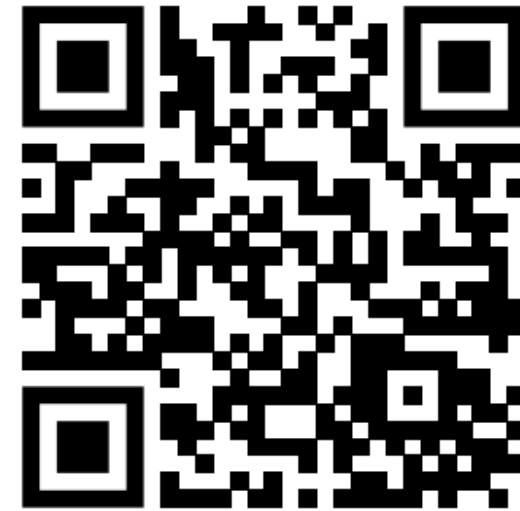
<https://uni-tuebingen.de/en/74348>



# Courses to Modules

- This page lists all CS courses and states which modules each can be used for:

<https://courses.cs.uni-tuebingen.de>



| Bachelor                   |          |      |                                            |            | Master    |           |           |           | Informatik  |             |             |             | Bioinformatik |             |             |             |             |             |             |
|----------------------------|----------|------|--------------------------------------------|------------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                            |          |      |                                            |            |           |           |           |           | Studienbere | Studienbere | Studienbere | Studienbere | Studienbere   | Studienbere | Studienbere | Studienbere | Studienbere | Studienbere | Studienbere |
| Titel                      | Lehrform | ECTS | Kennung                                    | Dozent     | INFO-PRAK | INFO-THEO | INFO-TECH | INFO-INFO | BIO-SEQ     | BIO-STRUK   | BIO-SEM     | BIO-BIO     | BIO-PRAK      | INFO-PRAK   | IN TH       |             |             |             |             |
| Parametrisierte Algori...  | V        | 6    | INFO-4413                                  | Dorn       |           | ×         |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Parametrisierte Algori...  | S        | 3    | INFO-4414                                  | Dorn       |           |           |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Parametrisierte Algori...  | V, Ü     | 9    | INFO-4417                                  | Dorn       |           | ×         |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Seminar zu ausgewä...      | S        | 3    | INFO-4999                                  | Alle Do... |           |           |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Ausgewählte Theme...       | V, Ü     | 6    | MEDZ-4310                                  | Dozent...  |           |           |           |           |             |             |             |             |               |             |             |             |             |             |             |
| Ausgewählte Theme...       | V        | 9    | MEDZ-4320                                  | Dozent...  |           |           |           |           |             |             |             |             |               |             |             |             |             |             |             |
| Mathematische Meth...      | S        | 3    | BIOINF43...                                | Mostoli... |           |           |           | ×         |             |             | ×           | ×           |               |             |             |             |             |             |             |
| Systembiologie II          | V, Ü     | 6    | BIOINF439<br>4<br>(entspricht<br>BIO-4394) | Dräger     |           |           |           |           |             |             |             | ×           |               |             |             |             |             |             |             |
| Informationsverarbeit...   | S        | 3    | INFO-4250                                  | Franz      |           |           |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Intelligent Systems II ... | V, Ü     | 6    | INFO-4177                                  | Gehler,... |           |           |           | ×         |             |             |             |             |               |             |             |             |             |             |             |
| Implementierung Rel...     | V, Ü     | 9    | INFO-4141                                  | Grust      | ×         |           |           | ×         |             |             |             |             |               |             |             |             | ×           |             |             |
| Datenbanksysteme u...      | V, Ü     | 6    | INFO-4142                                  | Grust      | ×         |           | ×         | ×         |             |             |             |             |               |             |             |             | ×           |             |             |
| Deklarative Datenba...     | V, Ü     | 6    | INFO-4147                                  | Grust      | ×         |           |           | ×         |             |             |             |             |               |             |             |             | ×           |             |             |
| Spezielle Kapitel zu ...   | V, Ü     | 6    | INFO-4149                                  | Grust      | ×         |           |           | ×         |             |             |             |             |               |             |             |             | ×           |             |             |

# MSc Bioinformatics

Three variants:

- A - already have a BSc in Bioinformatics (International program)
  - B - have a BSc in Biology (or similar)
  - C - have a BSc in Computer Science (or similar)
- 
- PO 2021
  - 120 (ECTS) credits
  - Duration: 4 Semesters
  - Max. duration: 7 Semesters
  - Courses in Bioinformatics, Computer Science and Life Sciences
  - Master thesis
    - 30 ECTS, 6 months
    - Thesis (27 ECTS) is jointly posed and examined by two professors, usually one from bioinformatics and one from life sciences
    - Concluded with a presentation (3 ECTS)

# Example Study Plans

- For each variant A-C, you can find an example study plan here:

<https://uni-tuebingen.de/de/176487>



## Study Plans

Study plans describe the recommended course of study in accordance with the applicable examination regulations.



📄 [Studienplan M.Sc. Bioinformatik Variante A Start WS 2425 \(englisch\).\(PDF\)](#)

📄 [Studienplan M.Sc. Bioinformatik Variante B Start WS 2425 \(PDF\)](#)

📄 [Studienplan M.Sc. Bioinformatik Variante C Start WS 2425 \(PDF\)](#)

📄 [Studienverlaufsplan-BSc-Bioinf-StudienbeginnSS2024 \(PDF\)](#)

📄 [StudienverlaufsplanMScBioinfo-VarA-StartSommersemester2024\\_EN \(PDF\)](#)

📄 [StudienverlaufsplanMScBioinfo-VarB-StartSommersemester2024 \(PDF\)](#)

📄 [StudienverlaufsplanMScBioinfo-VarC-StartSommersemester2024 \(PDF\)](#)

# Admissions for this semester ( not final)

**Variant A (18)** Bioinformatics, Bioinformatics & Data Science,  
Biotechnology, Biological Sciences & Data Science,  
Biology & Neural Network Technologies,  
Molecular Biology & Genetics & Computer Engineering,  
Genomics & Molecular Genetics

**Variant B (11)** Biology, Biological Sciences, Biochemistry, General Biology,  
Molecular and Technical Medicine

**Variant C (13)** Computer Science, Simulation Technology, Media Informatics,  
Data Science and Artificial Intelligence, Mathematics,  
Computer Science & Data Engineering and Analytics, Psychology

Germany, India, Kazakhstan, Kosovo, Pakistan, Russia, Spain, Türkiye, USA

# MSc Bioinformatics Variant A

For students with a BSc in Bioinformatics - International program

|                                                       | ECTS |
|-------------------------------------------------------|------|
| • Module Sequence Bioinformatics                      | 9    |
| • Module Structure Bioinformatics                     | 9    |
| • Seminar Bioinformatics (BIO-SEM)                    | 3    |
| • Studies in Practical Bioinformatics (BIO- PRAK)     | 6    |
| • Studies in Bioinformatics (BIO-BIO)                 | 15   |
| • Studies in Practical Computer Science (INFO-PRAK)   | 6    |
| • Studies in Theoretical Computer Science (INFO-THEO) | 6    |
| • Studies in Computer Science (INFO-INFO)             | 18   |
| • Studies in Life Sciences (BIO-LIFE)                 | 18   |
| • Master thesis and presentation                      | 30   |

# Example study plan, variant A

|                                |                                                                                                                                                                                                             |         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <i>1<sup>st</sup> semester</i> |                                                                                                                                                                                                             |         |
| lecture + tutorials            | Module <b>Sequence Bioinformatics</b> , Lectures Monday and Wednesday 10-12, Tutorials extra time                                                                                                           | 9 ECTS  |
| Group project                  | Group project, study area <b>BIO-BIO</b> (parallel with Sequence Bioinformatics)                                                                                                                            | 3 ECTS  |
| lecture + tutorials            | Study area <i>Theoretical Computer Science (INFO-THEO)</i> or, alternatively, study area <i>Advanced Computer Science (INFO-INFO)</i> or alternatively, study area <i>Advanced Bioinformatics (BIO-BIO)</i> | 6 ECTS  |
| lecture + tutorials            | Study area <i>Practical Computer Science (INFO-PRAK)</i> , or alternatively, study area <i>Advanced Computer Science (INFO-INFO)</i>                                                                        | 6 ECTS  |
| lecture / seminar              | Study area <i>Advanced Life Sciences (BIO-LIFE, Biology / (Bio)Chemistry / Pharmacy MSc courses)</i>                                                                                                        | 6 ECTS  |
|                                | Total                                                                                                                                                                                                       | 30 ECTS |

See the study plan document for concrete suggestions for courses in CS and Life Sciences

# MSc Bioinformatics Variant B

For students with a BSc in Biology (or similar) - requires both English and German

|                                                   | ECTS |
|---------------------------------------------------|------|
| Foundations of Computer Science (BIO-INFO)        | 27   |
| • Module Sequence Bioinformatics                  | 9    |
| • Module Structure Bioinformatics                 | 9    |
| • Seminar Bioinformatics (BIO-SEM)                | 3    |
| • Studies in Practical Bioinformatics (BIO- PRAK) | 6    |
| • Studies in Bioinformatics (BIO-BIO)             | 15   |
| • Studies in Computer Science (INFO-INFO)         | 9    |
| • Studies in Life Sciences (BIO-LIFE)             | 12   |
| • Master thesis and presentation                  | 30   |

# Example study plan, variant B

|                                   |                                                                                                                                                               |              |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <i>1. Semester</i>                |                                                                                                                                                               |              |
| Vorlesung<br>Praktikum<br>Seminar | Studienbereich <b>BIO-LIFE</b><br>(alle Vorlesungen des Masters aus Bio / Chemie / Biochemie<br>o. Pharmazie sind im Prinzip belegbar, s. Empfehlungen unten) | 6-12<br>ECTS |
| Vorlesung+<br>Übung               | Intro. to Data Structures & Programming,<br>Studienbereich <b>BIO-INFO</b>                                                                                    | 9 ECTS       |
| Vorlesung+<br>Übung               | Praktische Informatik 1,<br>Studienbereich <b>BIO-INFO</b>                                                                                                    | 9 ECTS       |
| Vorlesung+<br>Übung               | Studienbereich <b>INFO-INFO</b> oder Studienbereich <b>BIO-BIO</b><br>(wenn nicht <b>BIO-LIFE 12 ECTS</b> belegt)                                             | 6 ECTS       |
|                                   | Summe                                                                                                                                                         | 30 ECTS      |

See the study plan document for concrete suggestions for courses in CS and Life Sciences

# MSc Bioinformatics Variant C

For students with a BSc in computer science (or similar) - requires both English and German

|                                                   | ECTS |
|---------------------------------------------------|------|
| • Foundations of Life Sciences (BIO-BASIC)        | 24   |
| • Module Sequence Bioinformatics                  | 9    |
| • Module Structure Bioinformatics                 | 9    |
| • Seminar Bioinformatics (BIO-SEM)                | 3    |
| • Studies in Practical Bioinformatics (BIO- PRAK) | 6    |
| • Studies in Bioinformatics (BIO-BIO)             | 15   |
| • Studies in Computer Science (INFO-INFO)         | 12   |
| • Studies in Life Sciences (BIO-LIFE)             | 12   |
| • Master thesis and presentation                  | 30   |

# Example study plan, variant C

|                         |                                                                                                                                              |         |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <i>1. Semester</i>      |                                                                                                                                              |         |
| Vorlesung+<br>Übung     | Studienbereich Vertiefung Informatik ( <b>INFO-INFO</b> )                                                                                    | 6 ECTS  |
| Vorlesung               | Biomoleküle und Zelle (wenn Teil des <b>Moduls Grundlagen LW, BIO-BASIC</b> )                                                                | 3 ECTS  |
| Übung                   | Kurs Biomoleküle und Zelle für Bioinformatiker (Teil des <b>Moduls Grundlagen LW, BIO-BASIC</b> )                                            | 3 ECTS  |
| Vorlesung<br>+Praktikum | <i>Chemie (AC/OC) (wenn Teil des <b>Moduls Grundlagen LW, BIO-BASIC</b>), Vorlesung während Semester, Praktikum in vorlesungsfreier Zeit</i> | 9 ECTS  |
|                         | Summe                                                                                                                                        | 21 ECTS |

See the study plan document for concrete suggestions for courses in CS and Life Sciences

# Additional information

- For INFO-INFO and BIO-BIO, Bachelor's courses from the 3rd year (module numbers starting with 3) can be taken, **BUT:**

**The sum cannot exceed 18 ECTS !**

Computer Science

course enrollment: no enrollment via alma

B.Sc. Informatik (Version 2021)

100 Compulsory Area: Computer Science

INFM3110 Elective Area: Practical Computer Science

INFM3410 Elective Area: Theoretical Computer Science

INFM3310 Elective Area: Technical Computer Science

INFM2510 Elective Area: Computer Science

B.Sc. Bioinformatik (Version 2021)

100 Compulsory Area: Bioinformatics

BIOINFM6120 Professional Skills

BIOINFM2510 Elective Area: Computer Science

BIOINFM2710 Elective Area: Life Sciences

BIOINFM2210 Elective Area: Bioinformatics

BSc-BIOINFM2210-21 Veranstaltungen: Wahlpflichtfach Bioinformatik

BSc-BIO-INFO-21-VG1 B.Sc. Bioinfo Wahlpflichtfach Bioinformatik (6 CP)

BIOINF3399 Selected Topics in Bioinformatics: Analysis of Next Generation Sequencing Data with Python - Lecture/Exercise

MDZINF3310 Introduction to Statistical Machine Learning for Bioinformaticians and Medical Informaticians - Lecture/Exercise

# “Grundlagen“-module Variants B / C

## Master Bioinformatik/Bioinformatics

Name:   
 Vorname:   
 Matrikel-Nr.:   
 Bachelor in:

Zu Beginn des Studiums wird durch den Prüfungsausschuss für jeden Studierenden individuell zusammengestellt, welche Grundlagen-Module zu belegen sind.  
 Bitte ankreuzen, welche Grundlagen absolviert werden müssen.

## Variante B (Bachelorabschluss in Biologie u.ä.)

### Grundlagen Informatik (27 LP):

|                                                                             |
|-----------------------------------------------------------------------------|
| Praktische Informatik I: Deklarative Programmierung (WS) (9 LP)             |
| Intro. to Data Structures and Programming for Life Scientists (WS) (9 LP)   |
| Praktische Informatik II: (SS) (9 LP)                                       |
| Vorlesung Grundlagen der Bioinformatik (SS) (9 LP)                          |
| Theoretische Informatik 1: Algorithmen und Datenstrukturen (WS) (9 LP)      |
| Theoretische Informatik 2 (SS) (9 LP)                                       |
| Teamprojekt (SS) (9 LP) nur in begründeten Ausnahmefällen                   |
| <del>Datenbanksysteme 1 (WS) (9 LP) nur in begründeten Ausnahmefällen</del> |

## Variante C (Bachelorabschluss in Informatik u.ä.)

### Grundlagen Lebenswissenschaften (24 LP):

|                                                            |
|------------------------------------------------------------|
| Biomoleküle und Zelle (Vorl. + Übungen) (WS) (6 LP)        |
| Molekulare Biologie I (Vorlesung) (6 LP)                   |
| Anorg.u.Org. Chemie (Vorl. + Praktikum) (WS) (9 LP)        |
| Allgemeine Biochemie (Vorlesung) (SS) (3 LP)               |
| Physikalische Chemie (Vorl. + Praktikum) (WS) (6 LP)       |
| Tierphysiologie (Vorl. + Praktikum) (WS) (9 LP)            |
| Grundlagen der Bioinformatik (Vorl. + Übungen) (SS) (9 LP) |

Bitte unbedingt ausfüllen!

Leistungen, die bei Anmeldung der Master-Arbeit erbracht sein müssen:

Only variants B and C will receive this document.  
 Please fill in your data and the courses you want to attend for the “Grundlagen” module.

Variant B usually begins with:

- Praktische Informatik II (summer)
- Grundlagen der Bioinformatik (summer)
- Praktische Informatik I (winter)

Recommended study plans will be online this week

\* Lectures very similar. Only one can be attended.

# Life Sciences (BIO-LIFE)

Please note that courses offered in the field of Life Sciences are **not all listed under the BIO-LIFE category in Alma**, as the range of offerings is too large.

Also, please be aware that (unfortunately) many biology lectures are only offered as **block courses**.

Students may attend lectures or seminars (but not lab courses) in **biology** from the **3rd year of the bachelor's program onwards**, as well as all courses in the **master's program**, including master's-level courses in **chemistry, biochemistry, and pharmacy**.

Please note that courses in these areas that cover topics such as bioinformatics, mathematics, computer science, or similar subjects (e.g., *Bioinformatics Methods in Microbiology*, *Matlab for Biologists*, etc.) **cannot** be counted by bioinformatics master's students toward fulfilling the "Advanced Life Sciences" (BIO-LIFE) study area or any other study areas of the master's program.

We will publish a list of recommended / selected courses for this summer semester.

# Life Sciences (BIO-LIFE)

Please note: Some of these lectures are only offered in  
German !

## Biochemie / Biochemistry:

Advanced Biochemistry - Molecular Cell Biology I - lecture, English - ask lecturer first if possible

## Biologie / Biology:

- Ethik in den Biowissenschaften (seminar) – Deutsch
- Spezialthemen der Ethik, Theorie und Geschichte der Biowissenschaften (Seminar) - deutsch
- Epigenetik des Menschen (Seminar) – Deutsch
- Einführung in die Immunologie (Vorlesung) – Deutsch
- Bionik I (Vorlesung) – Deutsch
  
- Fundamentals of Microbiology and Infection Biology (english), lecture + exercises - 12 ECTS
- Current Topics in Proteome Research (Seminar) - 3 ECTS
- Advanced Immunology - lecture 3 ECTS
- Advanced Oncology - lecture 3 ECTS
- Methods in Cellular and Immunological Biosciences (lecture) - ask lecturer if possible

# Life Sciences (BIO-LIFE)

## Neuroscience: Courses offered by Training Centre of Neuroscience (GTC):

- Alle Vorlesungen die nicht “computational” sind können gewählt werden.
- Any lectures that are not ‘computational’ may be chosen.

## Geosciences:

- Evolution of Organisms - ask lecturer about content
- Introduction to Paleogenetics (English, lecture plus seminar, also only lecture possible)

## Pharmazie / Pharmacy:

- Drug Discovery Technologies (Seminar)
- Coronavirus Proteases and GPCRs: Small Molecule Drug Discovery and Medicinal Chemistry
- Exploiting Protein Kinases as Potential Drug Targets for the Development of Antiviral Therapy
- From Bench to Market: Identifying Targets, Designing Molecules, and Optimizing Medicinal Chemistry to Develop Biologically Active Drugs

Introduction for “Coronavirus Proteases”, “Protein Kinases” and “Bench to Market”

14.10. 16:00 in seminar room 7E02

# Additional information

## What about math-lectures ?

Lectures on mathematics (in computer science) are highly recommended, especially the one on linear algebra (i.e. Mathematics for Computer Science 2: Linear Algebra, offered every summer semester).

However, this cannot be credited towards the Master's degree.

For bridging gaps, there is the **Online Mathematik Brückenkurs OMB+**:

<https://uni-tuebingen.de/de/217761>

as well as: **Online course Mathematics In Advanced Studies:**

<https://omias.mumie.net/omias/public/index.html>

# Invitation to our Mastercafé

Location: Maria-von-Linden-Str. 1  
Room: Rooftop terrace (if raining: ground floor)  
Date&Time: Thursday, October 8<sup>th</sup>, 14:30

Meet your fellow students, the professors,  
and your study coordinator

Also: Free coffee, tea ,and cake

Check [here](#) to updates



# Welcome to Tuebingen

And:  
good luck  
with your  
studies!

