



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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# Master's degree



## MSc Computer Science

University of Passau • Passau



## Overview

Degree	Master of Science in Computer Science
Teaching language	<ul style="list-style-type: none"><li>• English</li><li>• German</li></ul>
Languages	This degree programme comprises both English- and German-taught modules and can be studied entirely in either language. Making use of the free German language tuition offered to international students is strongly recommended to ensure that students have access to the full range of focus modules at the later stage of their studies. Speakers of French may pursue a double-degree programme in France (with INSA Lyon or ENSIIE Evry-Paris) or in Tunisia (with SUP'COM Tunis or ENSI Tunis).
Full-time / part-time	<ul style="list-style-type: none"><li>• full-time</li></ul>
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	The application round for the April intake starts in mid-November of the previous year; for the October intake, the application round starts in early April. As the application deadlines can currently change on short notice, we ask that you check <a href="#">our application pages</a> closer to the time for the specific dates (and what documents you need to submit).
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	Yes
Description/content	Computer Science is one of the drivers of technological progress in all economic and social spheres. When you graduate with an MSc in Computer Science, you will be a specialist in at least one field of computer science, and you will have a wide-ranging expertise in scientific methods.

Having completed this programme, you will be able to autonomously and comprehensively define computer science problems and their applications. You will also be able to structure them and build abstract models. Moreover, you will have the relevant knowledge to define and implement state-of-the-art solutions.

#### Features

- A **broad, international, and relevant** selection of modules
- As a student, you will work on **cutting-edge research projects**
- Excellent **enterprise relations** maintained by the chairs and institutes
- Numerous **partnerships** with universities around the world
- **Double-degree programmes** with [INSA Lyon](#), [ENSIE Evry-Paris](#), and [SUP'COM Tunis and ENSI Tunis](#)

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## Course Details

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### Course organisation

You will choose modules from the following five subject areas:

- 1) **Algorithms and Mathematical Modelling**
- 2) **Programming and Software Systems**
- 3) **Information and Communication Systems**
- 4) **Intelligent Technical Systems**
- 5) **IT Security and Reliability**

1) Algorithms and Mathematical Modelling (AlgMath): This module group teaches you about deterministic and stochastic algorithms and how they are implemented, evaluated, and optimised. You will acquire advanced knowledge of computer-based mathematical methods – particularly in the areas of algorithmic algebra and computational stochastics – as well as in-depth knowledge on mathematical modelling and complexity analysis of discrete and continuous problems.

2) The Programming and Software Systems (ProgSoft) subject area imparts modern methods for constructing large-scale software systems as well as creating and using software authoring, analysis, and optimisation tools. You will also consolidate your knowledge of various programming paradigms and languages. Moreover, you will explore the structure of language processing systems and learn to deal with parallelism in programme routines.

3) In the module group Information and Communication Systems (InfComm), you will study the interactions of the classic computer-science subjects of information systems and computer networks. This specialisation presents an answer to the problem of increasing volume and complexity of worldwide information distribution and networks as well as an answer to the growing requirements on quality and performance of computer communication. You will also learn how to transfer database results to multimedia data.

4) Intelligent Technical Systems (ITS): This module group teaches you the necessary knowledge in systems theory, machine learning and signal and image processing to explore the theory and practical application of intelligent, self-learning systems.

5) IT Security and Reliability (ITSecRel): This subject area is concerned with the security and reliability of IT systems, e.g. in hardware circuitry, communication protocols or complex, networked application systems. To ensure the secure operation of these systems, you will learn design methods, secure architectures, and technical implementation of the underlying components.

### A Diploma supplement will be issued

Yes

### International elements

- Specialist literature in other languages
- Language training provided
- Training in intercultural skills
- Courses are led with foreign partners

<b>Integrated internships</b>	<p>There is no formal internship requirement for this degree programme. Nevertheless, we recommend that you go to the effort of completing one or more voluntary internships as you study towards your degree. These internship(s) will not be arranged for you. Rather, you are responsible for searching for the internship, negotiating the outline (i.e. the job description) and making all necessary arrangements. However, the university can help you with information and hands-on advice.</p> <p>For more details, please see the following websites:  <a href="http://www.uni-passau.de/en/zkk">http://www.uni-passau.de/en/zkk</a>  <a href="http://www.uni-passau.de/en/iStudi/">http://www.uni-passau.de/en/iStudi/</a></p>
<b>Course-specific, integrated German language courses</b>	Yes
<b>Course-specific, integrated English language courses</b>	Yes

## Costs / Funding

<b>Tuition fees per semester in EUR</b>	None
<b>Semester contribution</b>	The semester contribution fee is 106 EUR per semester. This covers the student services association and bus pass fees.
<b>Costs of living</b>	You should budget a minimum of 934 EUR per month for your living expenses. If you need a visa to come to Germany, this is the amount you must have available to you (e.g. paid into a blocked account) for each month. Nevertheless, your actual cost of living will vary depending on your lifestyle, and so you should treat this figure as an absolute minimum.
<b>Funding opportunities within the university</b>	Yes
<b>Description of the above-mentioned funding opportunities within the university</b>	The International Office awards a small number of scholarships to international degree-seeking students who have been enrolled in a Bachelor's programme for at least two semesters or in a Master's programme for at least one semester. You may also apply for a Deutschlandstipendium scholarship, which is open to students of all nationalities. This scholarship has a stipend of 300 EUR per month and runs for one year. You may reapply in subsequent years. Finally, there is a one-off emergency hardship grant available to international students in exceptional cases of unexpected financial difficulties.

## Requirements / Registration

<b>Academic admission requirements</b>	Applicants are required to have a first university degree (e.g. Bachelor's degree) in computer science, Internet computing, or a related discipline with a minimum computer science content of 110 ECTS credits, obtained after completing a three-year full-time undergraduate programme. This degree should be ranked among the best 70% of your cohort, or with a final result of, or equivalent to, 2.7 (or better) on the <a href="#">German grading scale</a> .
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### Language requirements

This programme can be entirely studied in English, in German, or in a mix of the two, by choosing the relevant modules taught in the respective languages.

If you intend to study this programme in German, you should provide proof of one of the following:

- German at level B2 CEFR (e.g. DSH-1; TestDaF TDN 3×4, or equivalent)

or

- English at level B2 CEFR (e.g. TOEFL 567 PBT, 87 iBT, ITP starting from 543 "silver"; IELTS 5.5, Cambridge English Language Assessment (CAE or CPE), or an equivalent certificate) plus German skills at level A1 CEFR (i.e. beginner's level).

Do not worry if you do not have basic German skills or cannot provide a certificate, as you will take a free German language beginner's course during the first year of studies in Passau.

If you have completed some of your education – e.g. your secondary school or a university degree programme – in German or English, this counts as proof of language proficiency in the relevant language and you do not have to show an additional language certificate for that language.

### Application deadline

The application round for the April intake starts in mid-November of the previous year; for the October intake, the application round starts in early April. As the application deadlines can currently change on short notice, we ask that you check [our application pages](#) closer to the time for the specific dates (and what documents you need to submit).

### Submit application to

Please visit [our application pages](#) for details on how to apply and which documents to submit.

## Services

### Possibility of finding part-time employment

For international students, a dedicated career adviser is on hand: the "iStudi Coach" will help you with all your questions about finding work or placements in Germany.

Please note that students from non-EU countries must apply for a work permit at the national job centre if they work more than 240 half-days per year. Students from EU member countries do not require a work permit.

### Accommodation

The International Office has set up an accommodation service, which assists international students in finding accommodation.

Rooms in the **halls of residence** cost between **270 EUR and 525 EUR per month** and are fully furnished. Kitchen and bathroom facilities are usually shared, although some rooms have en-suite bathroom facilities. However, please note that the demand for the rooms in the student halls is very high, and there is no guarantee that you will be able to rent one.

Luckily, there is a large number of flats and flatshares available on the open housing market. On average, you should expect to pay somewhere in the vicinity of **350 EUR to 550 EUR a month** for these. Landlords usually require a two-month or three-month **deposit** when you move in, which will be returned to you at the end of the rental period, provided you leave your accommodation in good condition.

- [Further details on housing in Passau](#)
- [Accommodation service for international students](#)

### Career advisory service

The university provides advice on job hunting, jobs, and career-entry positions at German and international companies, here and abroad. These include personal interviews, advice, and training

courses on how to apply as well as intercultural and soft skills training.

**International students** have access to a dedicated career adviser – the "iStudi Coach" – who helps students find internships and apply for student jobs and career-entry positions at German companies. The iStudi Coach also coaches international students on German labour market practices, how to write applications, and so on.

Related links:

- [Future: Careers and Competencies Section](#)
- [iStudi Coach](#)

#### Support for international students and doctoral candidates

- Welcome event
- Buddy programme
- Tutors
- Accompanying programme
- Specialist counselling
- Cultural and linguistic preparation
- Visa matters



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#### Jeevitha Prabhakara Computer Science student

I chose Passau because the university holds a top position in different rankings for Computer Science in Germany. The faculty maintains great communication with students during the research period and encourages the students to approach them with innovative and creative ideas.



#### Information Video About the MSc Computer Science Programme

Professor Michael Granitzer introduces the MSc Computer Science degree programme offered by the University of Passau.

» more:  
<https://youtu.be/IPvUJL3Eb9Q?t=1>

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# University of Passau

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View of the main entrance of the central library

© University of Passau

### The University of Passau

More than 10,500 students from approximately 100 countries are currently studying towards their degrees on our bright, modern campus next to the Inn River and a stone's throw from the town centre and the historical Old Town.

The four faculties of the university offer degrees at the undergraduate, Master's and doctoral levels. Currently, five Master's programmes – MSc Artificial Intelligence Engineering, MSc Computational Mathematics, MSc Computer Science, MA Development Studies and MSc International Economics and Business – [can be studied entirely in English](#).

### A cosmopolitan university

No other Bavarian university has more of its students spending part of their programme abroad – to study, conduct research or gain work experience – than the University of Passau.

The range and depth of language tuition offered by our [language centre](#) probably has a role to play in this. Another reason is that our programmes are very international in their outlook – and with more than 270 international partner universities to choose from, it is difficult not to be tempted to go abroad for a semester or two or even to complete one of our [double-degree programmes](#) offered in cooperation with our global partner universities.

### An unparalleled student experience

Passau's students benefit from a good staff-to-student ratio and from studying on an urban campus of manageable size that is located very close to the town centre.

The facilities on campus are of a high standard: There are bright, sunny seminar rooms, lecture theatres equipped with the latest technology, numerous computer rooms, Wi-Fi access exists throughout the campus, and our well-stocked [university library](#) stays open until midnight on most days.

Student satisfaction at the University of Passau is particularly high and our sought-after graduates typically occupy executive posts in business, social, and academic organisations in Germany, Europe, and indeed all over the world.

### Student life

Throughout the semester, there are plenty of events of all sorts on campus and around town, often organised by our very active [student societies](#). Our [sports centre](#) has some 40 sports clubs, offering everything from acrobatics to Zumba.



## An ideal student town

Passau is situated near the Bavarian Forest at the confluence of the Danube, Inn and Ilz rivers, and it is considered one of the most beautiful cities in Germany. After two fires that destroyed much of the town in the 17th century, the Old Town was rebuilt in the baroque style by Italian master builders, which is why you will notice a distinct Italian flair as you stroll through "Bavarian Venice", another name by which Passau is known.

With students accounting for one-quarter of its population, Passau is very much a student town with many galleries, art studios, bars, cafés, clubs and, of course, beer gardens; naturally, there is a modern multiplex cinema. A shopping centre and the nearby pedestrian zone offer a lot of excellent eateries and shops, just a short five-minute walk from campus.

Passau is home to a number of cultural institutions, such as the theatre and the "Scharfrichterhaus" – a restaurant, cinema and political cabaret/stand-up stage where many of Germany's most popular contemporary comedians started out. Both have productions and acts running throughout the year.

In addition to this, Passau plays host to numerous annual cultural events, including "Europäische Wochen Passau" – a cultural festival which brings international symphonic orchestras, classical ensembles, theatre companies and artists to Passau for about six weeks every year; the Eulenspiegel Festival with predominantly German comedy acts and rock bands; two Oktoberfest-style festivals in spring and autumn; and no list of festivals would be complete without the traditional Christmas Market in front of St. Stephen's Cathedral every December. Incidentally, did you know that St. Stephen's is home to the [world's largest cathedral organ](#)?

Outdoor enthusiasts will be delighted at the many opportunities for hiking, climbing, cycling, and alpine and cross-country skiing in the nearby Bavarian Forest. Additionally, Passau is not far from the Austrian and Bavarian Alps, with their famous skiing areas as well as their mountain biking and hiking trails.

## Contact

### University of Passau

Academic Advice Service

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94032 Passau

Tel. [+49 8515091154](tel:+498515091154)

✉ [advice@uni-passau.de](mailto:advice@uni-passau.de)

🌐 Course website: <https://www.uni-passau.de/en/msc-computer-science/>

📘 <https://www.facebook.com/universitaetpassau>

🐦 <https://twitter.com/unipassau>

🌐 <https://www.linkedin.com/school/university-of-passau>

📷 <https://www.instagram.com/universitaet.passau>

📺 <https://www.youtube.com/channel/UCD9RBpW2Uaf0c0dJkGcoD5g>

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# International Programmes in Germany - Database

[www.daad.de/international-programmes](http://www.daad.de/international-programmes)

[www.daad.de/sommerkurse](http://www.daad.de/sommerkurse)

## Editor

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German Academic Exchange Service

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## GATE-Germany

Consortium for International Higher Education Marketing

[www.gate-germany.de](http://www.gate-germany.de)

## Disclaimer

The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

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