



## Why Biomedical Computing?

Computer-assisted medical imaging technology plays a crucial role in modern clinical environments, as medical diagnosis and treatment are increasingly supported by imaging procedures. Consequently, there is a growing demand for specialists that are skilled in this very particular field at the intersection of computer science and medicine.

## Hands-on Hospital Experience

Biomedical Computing focuses on bridging the gap between computer science and medicine. The possibilities for a clinical project and several newly created courses by the medical school provide students with a unique understanding of medical problems in imaging, interventions and diagnosis. Many events take place in the hospitals of our medical school to provide students with a proper insight into clinical routine. Only this understanding can foster innovative thinking from an engineering perspective.

## Strong Focus and Diversity

Students are provided with a set of courses that best fit typical professional requirements in the field of biomedical imaging and computer-assisted interventions. Besides the courses designed specifically for the Biomedical Computing Master's program, students are driven to select related courses from the Computer Science department's extended offerings.

## Profile of the Program

**Duration of study:** 4 semesters

**Degree:** Master of Science

**Start:** winter semester

**Application deadline:** May 31

**Application/Admission:** Aptitude test, further information: [www.in.tum.de/Application](http://www.in.tum.de/Application)

**Costs per Semester (currently):** 52 € for the student union + 59 € basic semester ticket

**Teaching language:** English

**Further information:** [www.in.tum.de/Biomedical\\_Computing](http://www.in.tum.de/Biomedical_Computing)

## Contact

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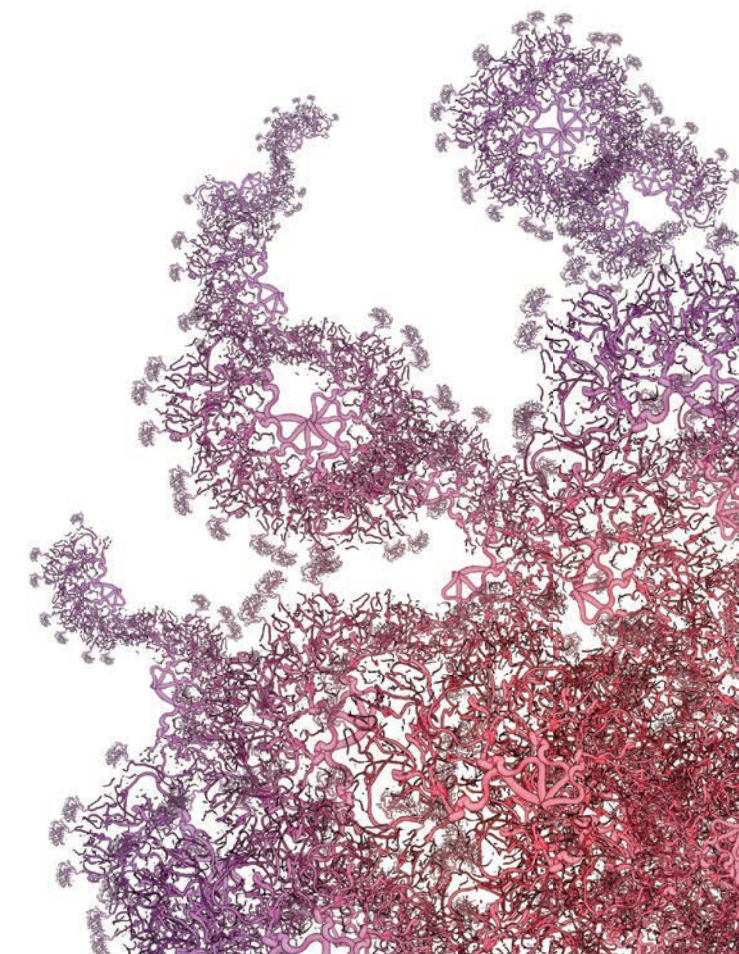
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Technische Universität München  
Department of Informatics

# Biomedical Computing

## Master of Science





## Focus

Biomedical Computing (BMC) is an international Master's program of the Technische Universität München that aims at motivated above-average students holding a Bachelor's degree in informatics, mathematics, physics, electrical engineering or related subjects.

Focusing on biomedical image computing and computer assisted interventions, BMC allows students to get introduced to medical data acquisition and management, medical terminology as well as physics of medical imaging. Furthermore, students get familiarized with medical image processing, visualization, advanced user interfaces and computer aided medical solutions.

## Competence

More than twelve professors from fields like medical data acquisition and management, physics of medical imaging, orthopedics and trauma surgery, medical image processing, visualization, advanced user interfaces and computer aided medical solutions guarantee an excellent education.

## Program Overview

During the first semester, all students have to take mandatory fundamental medical science and technology courses. Remaining credits for the first semester are filled with complementary courses that depend on the students' previous education. Computer science majors can choose from advanced courses in mathematics, whereas mathematics and physics majors can select from a set of computer science courses. In the second and third semesters, students are taking additional mandatory courses related to medicine and

visual computing. Missing credits can be earned by attending courses from a list of general-interest lectures. Students can acquire practical experience by participating in lab courses and in a clinical project. The fourth semester is intended for the completion of the Master's thesis.

## Perspectives

There is a multitude of job opportunities created by medical engineering companies and hospitals seeking skilled computer scientists. Graduates holding a Master's degree in Biomedical Computing can pursue a career in research institutes or industry, in both theoretical and application-oriented fields. To name just a few, typical topics to work on include: imaging technologies for medical diagnosis, computer aided navigation in treatment and surgery, software for radiation therapy and medical visualization techniques. Especially Munich and its surroundings offer a vast array of potential employers.

## Study Plan

Medical and Medical Informatics Courses	Visual Computing Courses Mathematics Courses Programming Courses Imaging Courses	Soft Skills Courses
Master's Thesis		

## Reasons for Technische Universität München

**Competence:** one of the largest and most important Informatic departments in Germany, research and teaching in nearly all related disciplines

**Quality:** top-rankings from alumni, employers, as well as human development experts

**Industrial collaborations:** industrial collaborations with established international companies, EU Atlas of ICT hot-spots: Munich ranks in 1st place

**Practical experience:** student research projects in companies

**Individual support:** national and international summer schools, mentoring, TUM: Young Academy, participation in 4 Bavarian elite graduate programs

**Interdisciplinary skills:** teamwork, presentation techniques, management and personality training, language courses

**Study abroad:** over 70 European and 100 international partner universities worldwide

**Direct and individual:** small tutorial groups, student advisory service, infopoint, career services

**Family-friendly department:** flexible child care, study program leave of absence due to family reasons, lectures are partly available online

**Munich as a versatile place of study:** one of the most favored places of study in Germany, many possibilities for cultural, sporting and leisure activities

**Excellent career perspectives:** due to a shortage in skilled personnel in the field of information technology