



Elite Graduate Program Biomedical Neuroscience



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Uliventurn der TVM

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- What is BIOMEDICAL NEUROSCIENCE all about?
- How is the Master Program structured?
- Specifica of our BmN-Graduate Program
- Application procedure
- Highlights what makes us special
- Q&A







Biomedical Neuroscience is all about the brain







Complexity of neurons



erythrocyte



neuron





Alzheimer's cases over time







Curriculum

			4 th semester
	2 nd semester	3 rd semester	 Master's Thesis and Master's Colloquium
		Qualifying colloquium	
1 st semester	Nervous system and circuit development	 Lab rotation (I-II) Data aquisition, analysis and 	
	Systems neurology and neuroscience	presentation(Lab visit)	
Molecular Neuroscience	Nervous system disorders		
Cellular Neuroscience	and treatment		
 Neuroanatomy and Neuropathology 	Computational analysis and modelling		
Molecular biology and -omics approaches	Neuroimaging and electrophysiology		
Microscopy of nervous	Scientific practice		
system structure	Life & Science		
Scientific practice	Data aquistion, analysis		
	and presentation (Lab visit)		
 Data aquistion, analysis and presentation (Lab visit) 			6





What about you?

To **enjoy** the program and to **succeed**, **your interests and qualities** should meet the following:

- Strong affinity to basic and translational neuroscience
- High motivation to acquire experimental skills
- Enjoy working in interdisciplinary teams and projects







Involvement

Tell me and I forget. Teach me and I remember. Involve me and I learn.



Xunzi (298 - 220 BC)









Modified from Healey, 2005





A typical week for a Biomedical Neuroscience student

	Monday	Tuesday	Wednesday	Thursday	Friday
morning	Topic Self Study	Topic 1 Focus seminar	Lab Day Application Transfer	Topic 2 Focus seminar	Topic 2 Applicati on Tutorial
afternoon	Hands-on	Hands-on	×	Hands-on	Hands- on
evening				Transferable Skills & Professional Competence	





Location & exchange







Internationalization



M.Sc. Biomedical Neuroscience Disease-related neuroscience





In a nutshell

Elite MSc training in Biomedical Neuroscience based on:

- Unique expertise linked to the Excellence Initiative and DZNE
- Comprehensive resources in basic staff and infrastructure
- Innovative training concept by didactics experts
- International collaboration with Hebrew University
- Close integration with existing international PhD program



- "Frontier science" with excellent job prospects:
 - → Typically the next career step is a PhD (GSN, IMPRS)
 - → Pharmaceutical industry at different levels, e.g.: Key Account Manager (sales), CRA (Clinical Research Expert), MSL (Medical Science Liaison), Consulting etc.





Application

- Final application **deadline** is **May 31st, 2024**
- Minimum Requirement: Bachelor degree in the field of natural sciences such as e.g. Biology, Biochemistry, Molecular Medicine, Physics or equivalent or a medical examination in medicine
- Proof of English Language Proficiency (certified copy)
 → "Test of English as a Foreign Language" (TOEFL) min. 88 Points, "International English Language Testing System" (IELTS) min. 6,5 Points, Cambridge English Certificate: Advanced (CAE)
- Online application in TUMonline
 - → <u>https://www.tum.de/studium/bewerbung/infoportal- bewerbung/onlinebewerbung</u>
 - → Support: TUM Student Service Center (<u>studium@tum.de</u>)





Aptitude Assessment: Stage 1

- Subject-specific qualifications: Subjects completed within the Bachelor degree: Mathematics, Physics, Statistics, Inorganic chemistry, Physical chemistry, Physical organic chemistry, Biochemistry, Molecular biology, Physiology, Immunology
 - → Max. score is <u>10 points</u> (1 point each for every above mentioned, passed subject that is mentioned in the transcript of records).
- Final grade of (Bachelor) diploma: GPA of Bachelor degree
 → Max. score is 10 points (1,9 = 1 point; 1,8 = 2 points... 1,0 = <u>10 points</u>.
- Letter of Motivation: Max. score is <u>10 points</u>.
- → Applicants having reached <u>20 points and above</u> will receive an invitation to a personal interview.





Aptitude Assessment: Stage 2 (personal interviews)

- Evaluation of the **applicant's special motivation and commitment** for studying Biomedical Neuroscience as outlined in the applicant's Letter of Motivation (for stage 1).
- Academic qualification: Basic theoretical and problem based/applied questions from the field of natural science fundamentals will be asked to assess the applicant's academic abilities.
- **Presentation of** the scientific hypothesis, methodology and achieved outcomes of the **applicant's final (Bachelor) thesis.**
- ➔ Each above mentioned criterion of stage 2 will be scored with a max. of 15 points. The total score will consist of the sum of all scores from stage 2 plus the sum of all scores of stage 1.
- ➔ Applicants who receive a score of more than 30 points for both assessment stages will be accepted to the Biomedical Neuroscience Master Program.





This makes us special:

- → Elite network Bavaria funded -supporting e.g. your German Course with 800,-€
- Excursions, summer schools and special hands-on-events/courses (e.g. "Brain Course") \rightarrow
- \rightarrow Highlights:
 - ✓ Focus on neurological/psychiatric diseases
 - ✓ Experiment-based scientific education
 - ✓ High-level scientific training
 - ✓ Personalized mentorship
 - ✓ International exchange program
 - ✓ Integrated doctoral training opportunities





Forschungsstation Berchtesgaden





Contact

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