Overview of MSNE Electives Catalogue (TUMonline)

- [VK] [IN2390] Advanced Deep Learning for Computer Vision: Visual Computing
- [VK] [CIT4230003] Advanced Machine Learning: Deep Generative Models
- [VK] [IN1503] Advanced Programming
- [VK] [WIB21003] Advanced Seminar Marketing, Strategy, Leadership & Management: Neurophysiological Methods for Organizational Research and Economics
- [VK] [MW2318] Angewandte Tensoralgebra für Ingenieure
- [VK] [EI71086] Applied Machine Intelligence
- [VK] [MW0892] Applikation von Radioaktivität in Industrie, Forschung und Medizin
- [VK] [EI7649] Approximate Dynamic Programming and Reinforcement Learning
- [VK] [IN2403] Artificial Intelligence in Medicine
- [VK] [POL60200] Artificial Intelligence in Theory and Practice
- [VK] [IN3200] Ausgewählte Themen aus dem Bereich Computergrafik und -vision
- [VK] [IN2124] Basic Mathematical Methods for Imaging and Visualization
- [VK] [CLA10602] Basic Techniques in Modelling Complex Systems
- [VK] [IN2272] BGCE Compact Course
- [VK] [ME0156] Bildgebende Verfahren, Nuklearmedizin
- [VK] [EI7263] Biologically-Inspired Learning for Humanoid Robots
- [VK] [PH2002] Biomedizinische Physik 2
- [VK] [EI7473] BioMEMS and Microfluidics
- [VK] [EI70210] Biomolecular Electronics
- [VK] [MW2479] Bioprinting: Fundamentals and Applications
- [VK] [EI7474] Biosensors and Bioelectronics
- [VK] [EI78068] Block course Soft Microrobotics
- [VK] [CIT4330010] Brain, Mind and Cognition
- [VK] [IN2028] Business Analytics and Machine Learning
- [VK] [PH2226] Chemie der biomedizinischen Bildgebung für Physiker
- [VK] [MGT001389] Coding Lab: Deep Reinforcement Learning
- [VK] [WZ2693] Cognitive Neuroscience
- [VK] [IN2222] Cognitive Systems
- [VK] [EI71004] Communication Acoustics
- [VK] [MA5617] Computational Methods for Single-cell Biology
- [VK] [CIT4230001] Computational Modeling for System Genetics
- [VK] [EI7646] Computational Neuroscience: Eine Ringvorlesung von Modellen bis zu Anwendungen
- [VK] [IN2319] Computational Physiology for Medical Image Computing
- [VK] [MA4402] Computational Statistics
- [VK] [IN2246] Computer Vision I: Variational Methods
- [VK] [IN2375] Computer Vision III: Detection, Segmentation, and Tracking
- [VK] [IN2377] Concepts of C++ Programming
- [VK] [EI74351] Convex Optimization
- [VK] [WZ2938] Course block: Neuroscience of vision
- [VK] [EI78043] Cybathlon Challenge: Mechanism Design & Control
- [VK] [EI78041] Cybathlon Challenge: Task Control & User Experiments
- [VK] [MW2426] Cyber-Physical Systems Lab: Autonomous Applications

- [VK] [WZ1711] Development Policy and Economics: Human Security and Human Development
- [VK] [EI70220] Digital Signal Processing
- [VK] [MW1421] Dynamics of Mechanical Systems
- [VK] [MA3081] Dynamische Systeme
- [VK] [IN2003] Efficient Algorithms and Data Structures
- [VK] [MW2373] Einführung in die nichtlineare Dynamik und Chaostheorie
- [VK] [EI7270] Elektromagnetische Felder in der Biomedizin und in medizinischen Anwendungen der Nanotechnik
- [VK] [EI71104] Embedded System Design for Machine Learning
- [VK] [EI70530] Embedded Systems and Security
- [VK] [WI001166] Entrepreneurial Prototyping
- [VK] [IN2379] Fortgeschrittene Datenverarbeitungs- und Visualisierungstechniken
- [VK] [NAT3002] Fortgeschrittene statistische Physik
- [VK] [PH1032] Fortgeschrittenenpraktikum Biomedical Engineering and Medical Physics
- [VK] [CIT433021] Fundamentals of Foundation Models
- [VK] [MA5441] Fundamentals of Mathematical Statistics
- [VK] [EI60022] Fundamentals of Mathematics for Neuroengineering
- [VK] [WI001217] Geheimnisschutz
- [VK] [MA3403] Generalized Linear Models
- [VK] [MA4804] Geometrie und Topologie für die Datenanalyse
- [VK] [MW2395] Gestaltung und Zerlegung dynamischer Systeme
- [VK] [IN2062] Grundlagen der Künstlichen Intelligenz
- [VK] [ME702] Grundlegende Einführung in fortgeschrittene MRT und Analysetechniken für Neuro-Anwendungen
- [VK] [ME701] Grundlegende Einführung in konventionelle MRT und Analysetechniken für Neuro-Anwendungen
- [VK] [SG860013] Human Robotics
- [VK] [MH260018] Human Robotics
- [VK] [MEMA-STRB001] Humanbiologie
- [VK] [EI7210] Humanoid Robotic Systems
- [VK] [IN2015] Image Synthesis
- [VK] [ME70003] Imaging Neuropsychiatry
- [VK] [CLA21213] Individual Change Management
- [VK] [IN2021] Informatikanwendungen in der Medizin
- [VK] [IN2022] Informatikanwendungen in der Medizin II
- [VK] [EI7223] Information Retrieval in High Dimensional Data
- [VK] [WI000285] Innovative Entrepreneurs - Leadership of High-Tech Companies
- [VK] [ME562] Introduction to Biological Imaging
- [VK] [IN2346] Introduction to Deep Learning
- [VK] [MGT001299] Introduction to Deep Reinforcement Learning
- [VK] [EI71099] Introduction to Human and Robotic Hand Grasping Control and Manipulation
- [VK] [CIT4330000] Introduction to Soft Robotics
- [VK] [MGT001243] Introduction to Statistics Using R

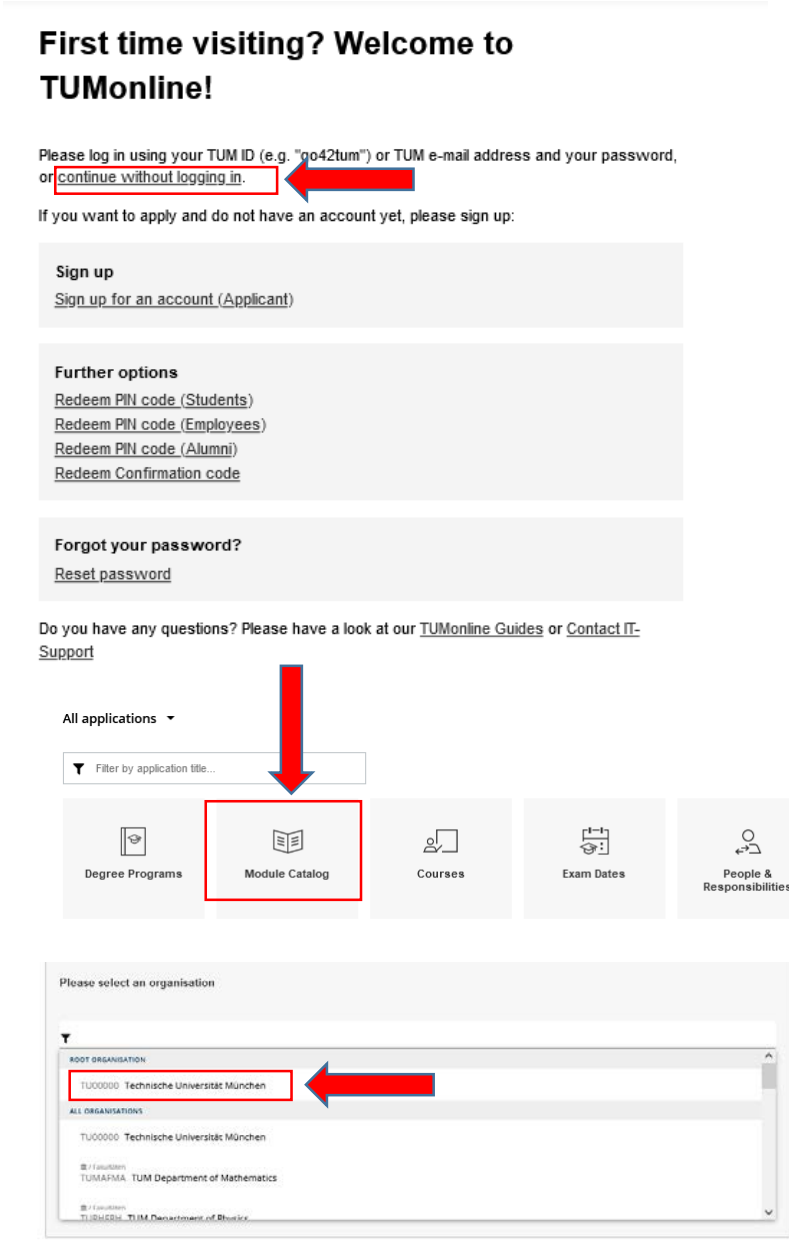
- [VK] [IN2409] Inverse Problems in Medical Imaging
- [VK] [CLA30201] Komplexe Systeme
- [VK] [ED0153] Komplexe Systeme (vertieft)
- [VK] [IN2330] Konvexe Optimierung für Computer Vision
- [VK] [IN2064] Machine Learning
- [VK] [IN2357] Machine Learning for Computer Vision
- [VK] [IN2323] Machine Learning for Graphs and Sequential Data
- [VK] [EI71040] Machine Learning: Methods and Tools
- [VK] [EI71102] Materials in Neuroengineering
- [VK] [IN2293] Medical Augmented Reality
- [VK] [IN9038] Medizintechnik Entrepreneurship
- [VK] [ED160016] Mensch-Roboter-Interaktion
- [VK] [SG861006] Methods in Neuromechanics
- [VK] [MH260007] Methods in Neuromechanics
- [VK] [EI71059] Mixed Integer Programming and Graph Algorithms for Engineering Problems
- [VK] [MA4503] Modern Methods in Nonlinear Optimization
- [VK] [NAT3008] Modernes Deep Learning in der Physik
- [VK] [EI60017] Modul A (Externe Leistung)
- [VK] [EI60023] Modul B (Externe Leistung)
- [VK] [EI60024] Modul C (Externe Leistung)
- [VK] [EI60025] Modul D (Externe Leistung)
- [VK] [EI60027] Modul E (Externe Leistung)
- [VK] [EI60028] Modul F (Externe Leistung)
- [VK] [EI7408] Multi-Sensory Based Robot Dynamic Manipulation
- [VK] [EI71091] Nano- and Microrobotics
- [VK] [EI7355] Nanosystems
- [VK] [IN2361] Natural Language Processing
- [VK] [SOT82901] Neural Networks and Deep Learning: From the Neuron to ChatGPT
- [VK] [WZ2505] Neurobiologisches Grundpraktikum
- [VK] [EI7776] Neuroelectronics Seminar
- [VK] [CIT4410006] Neuromorphic Electronic Devices
- [VK] [SG860012] Neuromuscular Control and Learning
- [VK] [MH260017] Neuromuscular Control and Learning
- [VK] [EI70270] Neuroprosthetics
- [VK] [IN2405] Neuroprosthetics: Artificial Limbs
- [VK] [POL70074] Neuro-Technologien für Gesellschaft gestalten
- [VK] [WI001238] Never trust statistics unless you fiddled the figure yourself - Creative Data Management and Visualisation for Business & Economics
- [VK] [SG860023] New Technologies in Neurorehabilitation and Motor Learning
- [VK] [PH2027] Nichtlineare Dynamik und komplexe Systeme 1
- [VK] [PH2028] Nichtlineare Dynamik und komplexe Systeme 2
- [VK] [MA3305] Numerische Programmierung 1 (CSE)
- [VK] [WI001071] Patente und Geheimnisschutz
- [VK] [MW2450] Physikbasiertes Machine Learning

In addition, for REC only:

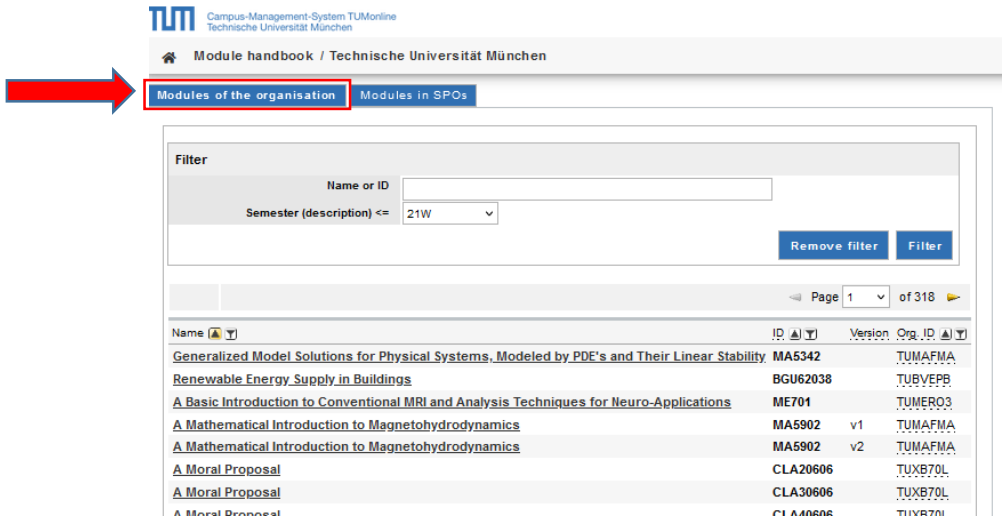
Source: TUM Online – as of August 2024

List of Electives in MSNE

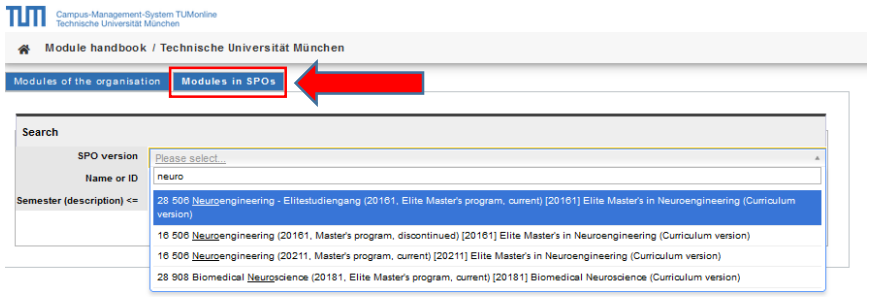
Kindly use https://campus.tum.de (no login required):



"Modules of the Organisation" (Default Tab) = List and links to **all modules existing at TUM**



Filtering for MSNE Context (= MSNE Mentors recommended at least once)
Use "Modules in SPOs" tab and edit in field "SPO-version" the keyword "neuro" and press <enter>



Existing modules may be in "paused" or "discontinued" status!
→ do a google search using the ID, e.g. "MA5342", or use TUM Courses Catalogue, or visit webpages of TUM institutes, most have a dedicated "teaching" – section.

August 2024