























































































































































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] [IN124] 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] [W001166] 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] [W001217] 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] [W000285] 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

		[VK] [CIT431010] Practical Course Advanced Robocup@Home
		[VK] [EI78066] Practical Course Wearable Robotics: Upper Limb Exoskeletons
		[VK] [MW0450] Praktikum Industrielle Softwareentwicklung für Ingenieure / C++
		[VK] [EI04029] Praktikum Software Engineering
		[VK] [WI001187] Private Equity
		[VK] [EI78052] Project Laboratory Neuroelectronics
		[VK] [EI78053] Project Laboratory Brain-Computer Interfaces
		[VK] [CIT4310004] Projektpraktikum Biosignalverarbeitung und Modellierung
		[VK] [EI78046] Projektpraktikum Human-Centered Neuroengineering: Neurorehabilitation
		[VK] [EI7208] Projektpraktikum Kognitive Systeme
		[VK] [EI78008] Projektpraktikum RoboCup@Home
		[VK] [EI04024] Python for Engineering Data Analysis - From Machine Learning to Visualization
		[VK] [EI76471] Quantum Information Theory
		[VK] [IN2373] Regelung moderner Leichtbauroboter
		[VK] [EI78001] Ringpraktikum Neurosignale
		[VK] [IN2138] Robot Motion Planning
		[VK] [IN2355] Robotic 3D Vision
		[VK] [WZ3096] Scientific Computing for Biological Sciences with Matlab
		[VK] [IN2005] Scientific Computing I
		[VK] [BV400016] Selbständig wissenschaftlich Arbeiten
		[VK] [EI77551] Seminar Biomedizinische Elektronik
		[VK] [EI7768] Seminar Kognitive Systeme
		[VK] [EI77009] Seminar Machine Learning
		[VK] [EI7493] Signal Processing for Audio Technology
		[VK] [EI71036] Software Architecture for Distributed Embedded Systems
		[VK] [EI71068] Solving Inverse Problems with Deep Learning
		[VK] [EI70250] Systemtheorie der Sinnesorgane
		[VK] [BV290010] Systemtheorie und Signalverarbeitung
		[VK] [WI001180] Tech Challenge
		[VK] [ED0140] Technikphilosophie
		[VK] [MW2098] Technische Dynamik
		[VK] [MW2245] Think. Make. Start.
		[VK] [MA5607] Topics in Computational Biology
		[VK] [ME70004] Translational Neuropsychiatry
		[VK] [MA8113] TUM Data Innovation Lab
		[VK] [CLA11123] Videos selber machen
		[VK] [MW2437] Virtual Reality in der Ergonomie
		[VK] [IN2026] Visual Data Analytics
		[VK] [CLA20563] Was hält eine Gesellschaft zusammen?
		[VK] [CLA10450] Wenn aus Ingenieuren Manager werden
		[VK] [IN8019] Wissenschaftliche Visualisierung
		[VK] [ED110068] Wissenschaftliches Programmieren und Dynamische Modellierung in Julia
		[VK] [ED0150] Wissenschaftstheorie (vertieft)
		[VK] [EI7622] Zulassungsverfahren und Qualitätsmanagement in der Medizintechnik

In addition, for REC only:

		[VK] [ME60002] Einführung in die Klinische Neurologie für Neuroengineers
		[VK] [SZ0471] Englisch - Intensive Thesis Writers' Workshop C2

Source: TUM Online – as of August 2024

List of Electives in MSNE

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TUMBIO TUM Department of Bioinformatics

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

Name	ID	Version	Org. ID
Generalized Model Solutions for Physical Systems, Modeled by PDE's and Their Linear Stability	MA5342		TUMAFMA
Renewable Energy Supply in Buildings	BGU62038		TUMBIO
A Basic Introduction to Conventional MRI and Analysis Techniques for Neuro-Applications	ME701		TUMERO3
A Mathematical Introduction to Magnetohydrodynamics	MA5902	v1	TUMAFMA
A Mathematical Introduction to Magnetohydrodynamics	MA5902	v2	TUMAFMA
A Moral Proposal	CLA20606		TUMBIO
A Moral Proposal	CLA30606		TUMBIO

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>

SPO version	Name or ID
28 508 Neuroengineering - Elitestudiengang (20161, Elite Master's program, current) [20161] Elite Master's in Neuroengineering (Curriculum version)	
16 508 Neuroengineering (20161, Master's program, discontinued) [20161] Elite Master's in Neuroengineering (Curriculum version)	
16 508 Neuroengineering (20211, Master's program, current) [20211] Elite Master's in Neuroengineering (Curriculum version)	
28 908 Biomedical Neuroscience (20161, Elite Master's program, current) [20161] Biomedical Neuroscience (Curriculum version)	

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