

Course List TUM Chemical Engineering (Master level)

CORE MODULES Chemical Engineering							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
CH3211	Basics in Macromolecular Chemistry (Grundlagen der Makromolekularen Chemie)	WiSe	German	5	Lecture 220081443	Rieger, Bernhard	
CH3094	Industrial Chemical Processes 1 - Catalysis for Energy (Industrielle Chemische Prozesse 1 - Katalyse für Energie)	WiSe	German, partly English	5	Lecture 220022816 Lecture 0820581427	Lercher; N.N.	
CH5139	Design of Chemical Reactors (Reaktordesign)	SoSe	German	5	Exercises 0000001683	Hinrichsen	
MW0006	Heat and Mass Transfer (Wärme- und Stoffübertragung)	WiSe	German	5	Lecture 249956132 Exercises 0249931297	Wen; Hirsch	WSÜ
MW0018	Bioprocesses (Bioprozesse)	SoSe	German	5	Lecture 820143082	Weuster-Botz	
MW0437	Process and Plant Engineering (Prozess- und Anlagentechnik)	SoSe	German	5	Lecture 821062429 Exercises 821098155	Klein, Harald	PAT
Focus: CHEMICAL PROCESS TECHNOLOGY							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
CH3095	Industrial Chemical Processes 2 - Catalysis for Synthesis (Industrielle Chemische Prozesse 2 - Katalyse für Synthese)	SoSe	German, partly English	5	Lecture 0000002829	Khare	
MW0129	Thermal Separation Principles 2 (Thermische Verfahrenstechnik 2)	WiSe	German	5	Lecture 220097985 Exercises 240947348	Klein, Harald	TVT II
MW1147	Equipment Design (Auslegung thermischer Apparate)	SoSe	German	5	Lecture 821073497 Exercises 821095641 Seminar 0000004852	Klein, Harald	ATA
MW1977	Process Design (Planung thermischer Prozesse)	WiSe/SoSe	German	5	Lecture WiSe 249986014 Exercises WiSe 0000002229	Rehfeldt	PTP; Online-Lectures! Lecture IDs differ from WiSe to SoSe
Focus: BIOPROCESSING							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
CH2104	Enzyme Technology (Enzymtechnologie)	WiSe	German	5	Lecture 0000000912 Exercises 0000000923	Garbe; Brück T.	
CH3037	Molecular Biotechnology (Molekulare Biotechnologie)	SoSe	German, partly English	5	Lecture 0000000553 Seminar 0000002544	Buchner, Johannes	
CH3100	Technical Biocatalysis (Technische Biokatalyse)	WiSe	German	5	Lecture 0000001710 Seminar 0000002452	Brück, Thomas	
MW0019	Bioreaction Engineering (Bioreaktoren)	WiSe	German	5	Lecture 240185400	Weuster-Botz	
MW1145	Bioreaction Engineering 1 (Bioproduktbearbeitung 1)	SoSe	German, partly English	5	Lecture 821005689 Exercises 821093385	Berensmeier	BSE 1
Focus: NANOPROCESSING							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
CH3063	Applied Electrochemistry (Angewandte Elektrochemie)	SoSe	English	5	Lecture 0000005457	Gasteiger	
CH3065	Fundamental Electrochemistry (Grundlagen der Elektrochemie)	WiSe	English	5	Lecture 0000001632	Gasteiger	
CH3093	Interfaces and Technology of Particles (Grenzflächen und Partikeltechnologie)	SoSe	German	5	Lecture 0000000403 Exercises 0000003027	Hinrichsen	
CH3241	Fundamentals of Catalysis (Grundlagen der Katalyse)	WiSe	English	5	Lecture 0000001989 with Exercises	Lercher; Jentys	
CH3242	Methods in Catalysis (Methoden der Katalyse)	SoSe	English	5	Lecture 0000003014 seminar 0000003699	Jentys	

ELECTIVES - "MW" = Mechanical Engineering							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
MW0056	Medical Technology 1 - An Organ Based Approach (Medizintechnik 1 - ein organbasierter Ansatz)	WiSe	English	5	Lecture 0220620566 Exercises 0000003317	Mela, Petra	
MW0136	Combustion (Verbrennung)	SoSe	German	5	Lecture 820280326 Exercises 820298870	Hirsch, Christoph	
MW0146	Similarity and Dimensionless Numbers (Ähnlichkeit und dimensionslose Kennzahlen)	WiSe	German	3	Lecture 0000001746	Klein, Harald	
MW0219	Project Management for Engineers (Projektmanagement für Ingenieure)	WiSe	German	3	Lecture 249980627 Exercises 240807019	Zäh, Gunther	PM
MW0250	Marketing Engineering and Purchasing (Ingenieur in Vertrieb und Einkauf)	WiSe	German	3	Lecture 220014169	Volk; Demmel	IVE
MW0376	Biofluid Mechanics (Biofluid Mechanics)	SoSe	English	5	Lecture 0820818994	Hu, Xiangyu	
MW0539	Modern Control 2 (Moderne Methoden der Regelungstechnik 2)	WiSe	German	5	Lecture 0240505696 Exercises 240586487	Lohmann, Boris	
MW0628	Energy and Economy (Energie und Wirtschaft)	WiSe	German	3	Lecture 220533388	Wieland	
MW1141	Modeling of Cellular Systems (Modellierung zellulärer Systeme)	SoSe	SoSe	5	Lecture 840991578 Exercises 840921367	Kremling	ModSys
MW1146	Bioseparation Engineering 2 (Bioproduktaufarbeitung 2)	WiSe	SoSe	5	Lecture 0000002142 Exercises 0000000503	Berensmeier	BSE 2
MW1277	Simulation of Thermofluids with Open Source Tools (Simulation of Thermofluids with Open Source Tools)	WiSe/SoSe	English	4	Lecture 0000000741	Polifke	Weekly tasks, weekly submissions
MW1339	Intelligent Systems and Machine Learning for Production Processes (Intelligente Systeme und Machine Learning for Production Processes)	SoSe	German	5	Lecture 0820383088 Exercises 0000003950	Vogel-Heuser	EiveSIM
MW1475	Renewable Energy Technology 1 (Regenerative Energiesysteme 1)	WiSe	English	3	Lecture 0000000178	Splithoff	RET I
MW1476	Renewable Energy Technology 2 (Regenerative Energiesysteme 2)	SoSe	English	3	Lecture 0000000314	Splithoff	RET II
MW1814	Solarthermal Power Plants (Solarthermische Kraftwerke)	WiSe	German	5	Lecture 0000006041 Exercises 0000006042	Splithoff	
MW1834	Principles of Refrigeration and Industrial Low Temperature Systems (Grundlagen der Kälteerzeugung und Industrielle Tieftemperaturanlagen)	SoSe	German	3	Lecture 0000004920	Klein, Harald	KTT
MW1861	Controlling and Measuring Lab Course with LabVIEW (Steuerung und Messwerterfassung mit LabVIEW)	WiSe/SoSe	German	4	Lab 0000001563	Wen, Dongsheng	LVP; application necessary
MW1931	Thermodynamics 2 (Thermodynamik 2)	SoSe	German	5	Lecture 0820014834 Exercises 820028972	Wen, Dongsheng	TD 2
MW1969	Desalination (Desalination)	WiSe	English	5	Lecture 0000002453 Exercises 0000002454	Wen, Dongsheng	

MW2104	Engineering Methods and Data Management for Mobile and Stationary Mechatronic Systems	SoSe	English	5	Lecture 0000001957 Exercises 0000002018	Vogel-Heuser	
MW2232	Polymers and Polymer Technology (Kunststoffe und Kunststofftechnik)	WiSe	English	5	Lecture 0220637900 Exercises 0240927901	Mela, Petra	
MW2238	Energy from Biomass and Residuals (Energetische Nutzung von Biomasse und Reststoffen)	WiSe	German	3	Lecture 0820036059	Spliethoff	
MW2244	Energy from Biomass and Residuals with Seminar (Energetische Nutzung von Biomasse und Reststoffen mit Seminar)	WiSe	German	5	Lecture 0820036059 Seminar 820532986	Spliethoff	
MW2248	Data Analysis and Design of Experiments (Datenanalyse und Versuchsplanung)	SoSe	German, partly English	5	Lecture 0000001929 Exercises 0000001935	Kremling	DatMod
MW2249	Optimization in Biotechnology (Optimierung in der Biotechnologie)	WiSe	German, partly English	5	Lecture 0000000269 Exercises 0000000345	Kremling	
MW2258	Environmental and Biochemical Engineering (Umweltbioverfahrenstechnik)	SoSe	German, partly English	5	Lecture 0000005309	Weuster-Botz	
MW2390	Modeling of chemical engineering processes (Modellierung verfahrenstechnischer Prozesse)	WiSe/SoSe	Deutsch	5	Lecture 0000002786 Seminar WiSe 0000002787	Klein, Harald	MVP; Seminar IDs differ from WiSe to SoSe
MW2392	Electricity and Thermal Storage in the Energy Sector (Strom- und Wärmeseicher im Energiesektor)	WiSe	Deutsch	5	Lecture 0000001535 Exercises 0000004344	Spliethoff	SWS
MW2410	Chromatography with ChromX (.) Simulation Semiar (Chromatographie mit ChromX (.) Simulationsseminar)	WiSe/SoSe	German, partly English	5	Seminar WiSe 0000002334 Seminar SoSe 0000001646	Berensmeier	ChromX
MW2428	Solar Engineering (Solar Engineering)	SoSe	Deutsch	5	Lecture 0000000571 Exercises 0000000572	Wen, Dongsheng	SolEng
MW2431	Bio-Nanotechnology (Bio-Nanotechnologie)	WiSe	German, partly English	5	Lecture 0000002477 Exercises 0000003768	Berensmeier	
MW2435	Introduction to Scientific Machine Learning for Engineers (Wissenschaftliches Maschinelles Lernen für Ingenieure)	WiSe	English	3	Lecture 0000002392 Exercises 0000002546	Adams, Nikolaus	
MW2455	AI in Production Engineering (KI in der Produktionstechnik)	SoSe	German, partly English	5	Lecture 0000005448 Exercises 0000001662	Zäh, Michael	
MW2462	Basics of Additive Manufacturing (Grundlagen der Additiven Fertigung)	WiSe	German, partly English	5	Lecture 0000003405 Exercises 0000003420	Wudy, Katrin	
MW2463	Additive Manufacturing with Plastics (Additive Fertigung mit Kunststoffen)	WiSe	English	5	Lecture 0000003422 Exercises 0000003431	Wudy, Katrin	

ELECTIVES - "CH" = Chemistry							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
CH0166	Modeling in Chemical Reaction Engineering (Modellbildung in der Chemischen Reaktionstechnik)	WiSe	German, partly English	5	Lecture 0000002778	Hinrichsen	
CH0300	Applied Biopolymers and Biomaterials (Angewandte Biopolymere und Biomaterialien)	SoSe	German, partly English	5	Lecture 0000000781	Winnacker	
CH1318	Computational Fluid Dynamics (CFD) with Open-Source-Software (Computational Fluid Dynamics (CFD) mit Open-Source-Software)	SoSe	German, partly English	4	Lecture 0000001318	Hinrichsen	
CH3097	Applied Biotechnological Processes (Angewandte biotechnologische Prozesse)	SoSe	German	5	Lecture 0000002638 Seminar 0000003707	Brück, Thomas	
CH3098	High Performance Polymers (Hochleistungspolymere)	SoSe	German	5	Lecture 0000002158 with exercises	Rieger, Bernhard	
CH3099	Technical Polymerisation (Polymerisationstechnik)	WiSe	German	5	Lecture 0240298000	Troll	
CH3151	Construction Chemicals and Materials 1 - Inorganic Binders (Bauchemikalien und -materialien 1 - Anorganische Bindemittel)	WiSe	German	5	Lecture 0000001548 Lab 0000002474	Gädt	Lab work subject to availability (lab space and supervision capacity); application necessary
CH3152	Construction Chemicals and Materials 2 - Functional Molecules (Bauchemikalien und -materialien 1 - Funktionelle Moleküle)	SoSe	German	5	Lecture 0000003101 Lab 0000003104	Gädt	Lab work subject to availability (lab space and supervision capacity); application necessary
CH3154	Nano Materials (Nanomaterialien)	SoSe	German	5	Lecture 0000003120 Lab 0000003184	Gädt	Lab work subject to availability (lab space and supervision capacity); application necessary
CH3218	Functional Nanomaterials (Funktionelle Nanomaterialien)	SoSe	German, partly English	5	Lecture 0000002129	Lechner, Barbara	
CH3246	Catalysis in Industrial Practice (Katalyse in der industriellen Anwendung)	WiSe	English	5	Lecture 0000001996 with exercises	Fischer, Richard	
CH3247	Metal-organic and Biocatalysis (Metallorganische und Biokatalyse)	SoSe	English	5	Lecture 0000004781	Cokoja	
ELECTIVES - Diverse							
Module ID	Module Title	Time frame	Language	ECTS	Components	Module coordinator	Remarks
BGU38010	Advanced Water Treatment Engineering and Reuse (Weitergehende Wasserbehandlung und Wasser Recycling)	SoSe	English	3	Lecture 0000000194	Drewes, Jörg	Central Munich Campus
CLAZ0201	Complex Systems (Komplexe Systeme)	WiSe/SoSe	German	2	Seminar CVL0001011	Thürmel	
CS0143	Hydropower (Wasserkraft)	SoSe	German	4	Lecture 0000000801	Kainz; Pfeffer	Campus Straubing!!!
ED160012	Successful Innovations - Networking, Funding and Management (Erfolgreiche Innovationen - Networking, Funding und Management)	WiSe/SoSe	German	3	Lecture WiSe 0000003340 SoSe 0000001467	Volk, Wolfram	Campus Garching
EI70810	Battery Storage (Batteriespeicher)	WiSe	German	5	Lecture 0000002687 Exercises 0000002949	Jossen	Central Munich Campus
WI000285	Innovative Entrepreneurs - Leadership of High-Tech Companies (Innovative Unternehmer - Führung von High-Tech Unternehmen)	WiSe/SoSe	English	3	Lecture WI000285VO	Schönenberger, Helmut	Online course
WI001180	Tech Challenge (Tech Challenge)	WiSe/SoSe	English	6	Seminar WI001180SE	Patzelt	Time consuming project work
WZ1338	Modeling and Simulation of Disperse Systems (Modellierung und Simulation disperser Systeme)	WiSe	English	5	Lecture 0000005623 Exercises 0000005624	Nasato	Campus Garching

WiSe = Winter semester (Oct 1st - March 31st)

SoSe = Summer semester (April 1st - September 30th)

All lab based, research oriented work is subject to availability: Application directly to individual module coordinator (Chair/Professor) necessary; check of prerequisites obligatory. Availability also depends on resources in lab space and supervision capacity - TUM full time degree students need to be given priority!