



**JOHANNES KEPLER  
UNIVERSITY LINZ**

**Courses taught in English**

The courses listed in this brochure refer to the academic year 2016/17.

For up-to-date course information, please go to  
**<http://www.jku.at/exchange/courses>**

**Bachelor study programmes taught in English:**

Bioinformatics  
Biological Chemistry

**Master study programmes taught in English:**

Computer Science  
Bioinformatics  
Biological Chemistry  
Polymer Chemistry  
Management in Polymer Technologies  
Polymer Technologies and Science  
Industrial Mathematics  
Economics  
General Management  
Comparative Social Policy and Welfare  
Statistics

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# ABBREVIATIONS

## Semester:

WS ..... Winter Semester (October – January)

SS ..... Summer Semester (March – June)

## Course Types:

IK ..... Intensive Course

KO ..... Tutorial

KS ..... Course

PJ ..... Project Studies

PR ..... Practical Course

PS ..... Proseminar

SE ..... Seminar

UE ..... Tutorial

VO ..... Lecture

## Level (only for General Management courses):

M1 ..... Phase 1

M2 ..... Phase 2

Your level will be determined upon review of your transcript

## Workload

A full workload corresponds to 30 ECTS credits per semester.

Exchange students are expected to take a minimum workload of 20 ECTS credits per semester.

# BUSINESS AND ECONOMICS

<b>Business Courses - Bachelor Level</b>			
Courses which are marked with * end before Christmas			
Sem.	Title	Course type	ECTS credits
WS	Case Studies English (C1) - for non-native speakers only!	KS	3
WS	Competences of Organisational Analysis*	SE	3
WS	Cross Cultural Management*	SE	3
WS	Current Issues in International Management	SE	3
WS	International Business*	KS	3
WS	International Market Entry*	IK	3
WS	Managing People and Organizations*	IK	2
WS	Organization Design and Innovation	KS	4
WS	Quantitative Organizational Change Methods	SE	3
WS	Seminar Business and Culture English (C2) - for non-native speakers only!*	SE	3
WS	Seminar Guest Professor English (C2): Strategic Human Resource Management*	SE	3
WS	Seminar in Innovation and Management*	SE	3
WS	Seminar in Organization and Management	SE	3
WS	Seminar Special Topics English (C2): Cross-cultural Virtual Teams*	SE	3
WS	Special Topics in International Management: Strategic International HRM	IK	3
SS	Case Studies English (C1) - for non-native speakers only!	KS	3
SS	Competences of Organisational Analysis: Qualitative Research Methods	SE	3
SS	Cross Cultural Management	SE	3
SS	Cultural Marketing	SE	3
SS	Current Issues in International Management	SE	3
SS	Financing Cultural Events	SE	3
SS	International Business	KS	3
SS	International Market Entry	IK	3
SS	Organization Design and Innovation	KS	4
SS	Quantitative Organizational Change Methods	SE	3
SS	Research Seminar in Management Accounting	SE	3
SS	Seminar Business and Culture English (C2)	SE	3
SS	Seminar Guest Professor English (C2): eBusiness and its Impact on Revenue Models	SE	3
SS	Seminar in Innovation and Management: Dimensions of Innovation	SE	3
SS	Seminar in Organization and Management: Market Categorization & Organizational Aspects of Strategic Management	SE	3
SS	Special Topics in International Management: International Negotiations	IK	3

<b>Economics Courses - Bachelor Level</b>			
Courses which are marked with * end before Christmas			
Sem.	Title	Course type	ECTS credits
WS	Balance of Payments and Exchange Rates (exam: first week of February!)	KS	3,00
WS	Economic Growth	KS	4,00
WS	Macroeconomics I	KS	4,00

## Economics Courses - Bachelor Level

Courses which are marked with \* end before Christmas

Sem.	Title	Course type	ECTS credits
WS	Managerial Economics	KS	3,00
WS	Markets and Economic Decision Making	IK	4,00
WS	Personnel Economics	KS	3,00
SS	Balance of Payments and Exchange Rates	KS	3
SS	Econometrics I	KS	4
SS	Econometrics I	IK	2
SS	Economics of International Integration	KS	4
SS	International Economics, Finance and Macroeconomics	SE	4
SS	Managerial Economics	KS	3
SS	Microeconometrics	KS	4

## Other Social Sciences Courses - Bachelor Level

Courses which are marked with \* end before Christmas

Sem.	Title	Course type	ECTS credits
WS	Comparative Research in Cultural Studies	KS	3
WS	Comparative Social Policy	KS	3
WS	Media and Societies in Europe: for non-native speakers only!	IK	3
WS	Politics in Europe	IK	3
WS	Reading Course: Global Studies	UE	3
WS	Selective Topics of Modern Society	SE	6
WS	The Impact of Religions & Value Systems on European Cultures*	KS	3
WS	Theory of Intercultural Communication*	IK	3
WS	Work Psychology*	SE	4
SS	Balance of Payments and Exchange Rates	KS	3
SS	Comparative Social Policy	KS	3
SS	Culture and Language Policies in the EU	IK	3
SS	Political and Economic Development in Europe	KS	3
SS	Work Psychology	SE	4

## General Management – Master Level

Courses which are marked with \* end before Christmas

Sem.	Title	Level	Course type	ECTS credits
WS	Master Course Advances in Strategic Change and Learning	M1	KS	6
WS	Master Course Corporate Finance	M1	KS	6
WS	Master Course Creating Strategic Advantages	M1	KS	6
WS	Master Course Dimensions of Innovation	M1	KS	4
WS	Master Course Dimensions of Marketing Theory and Managerial Application	M1	KS	6
WS	Master Course Financial Accounting*	M1	KS	6

## General Management – Master Level

Courses which are marked with \* end before Christmas

Sem.	Title	Level	Course type	ECTS credits
WS	Master Course Managerial Accounting*	M1	KS	6
WS	Master Course Organization	M1	KS	6
WS	Master Seminar Global Strategic Management*	M1	SE	3
WS	Master Seminar Innovation: Human Resource Perspectives*	M1	SE	4
WS	Master Seminar Intercultural Competence*	M1	SE	2
WS	Master Seminar International Business Project	M1	SE	6
WS	Master Seminar Qualitative Research Methods	M1	SE	3
WS	Master Seminar Quantitative Research Methods	M1	SE	3
WS	Master Seminar Sustainability: Environmental Controlling & Quality Management	M1	SE	4
WS	Master Seminar Sustainability: Environmental Cooperation & Networking	M1	SE	4
WS	Master Seminar Team Development & Group Dynamics*	M1	SE	2
WS	Master Course Dimensions of Globalization	M2	KS	4
WS	Master Seminar Advanced Topics in B2B-Marketing	M2	SE	2
WS	Master Seminar Advanced Topics in Global Strategic Management	M2	SE	3
WS	Master Seminar Advanced Topics in International Marketing*	M2	SE	2
WS	Master Seminar Advanced Topics in Organization: Literature and Practice	M2	SE	6
WS	Master Seminar Advanced Topics of Entrepreneurship Research	M2	SE	6
WS	Master Seminar Globalization: Network Perspectives	M2	SE	4
WS	Master Seminar Globalization: Politico-Economic Perspectives	M2	SE	4
WS	Master Seminar Innovation: Entrepreneurial Perspectives	M2	SE	4
WS	Master Seminar International Logistics	M2	SE	3
WS	Master Seminar Leaders, Groups and their Organizational Environment*	M2	SE	6
WS	Master Seminar Supply Chain and Transport Management	M2	SE	3
WS	Master Seminar Sustainability: Strategic Management Perspectives	M2	SE	4
WS	Seminar Applied B2B-Marketing	M2	SE	4
WS	Seminar Applied International Marketing	M2	SE	4
SS	Master Course Corporate Finance	M1	KS	6
SS	Master Course Advances in Strategic Change and Learning	M1	KS	6
SS	Master Course Creating Strategic Advantages	M1	KS	6
SS	Master Course Dimensions of Globalization	M1	KS	4
SS	Master Course Dimensions of Innovation	M1	KS	4
SS	Master Course Dimensions of Marketing Theory and Managerial Application	M1	KS	6
SS	Master Course Financial Accounting	M1	KS	6
SS	Master Course Managerial Accounting	M1	KS	6
SS	Master Course Organization	M1	KS	6
SS	Master Seminar Negotiation Skills	M1	SE	2
SS	Master Seminar Qualitative Research Methods	M1	SE	3
SS	Master Seminar Quantitative Research Methods	M1	SE	3
SS	Master Seminar Sustainability: Environmental Controlling & Quality Management	M1	SE	4
SS	Master Seminar Sustainability: Environmental Cooperation & Networking	M1	SE	4
SS	Master Seminar Sustainability: Strategic Management Perspectives	M1	SE	4

## General Management – Master Level

Courses which are marked with \* end before Christmas

Sem.	Title	Level	Course type	ECTS credits
SS	Master Seminar Team Development & Group Dynamics	M1	SE	2
SS	Master Seminar Advanced Topics in B2B-Marketing	M2	SE	2
SS	Master Seminar Advanced Topics in Global Strategic Management	M2	SE	3
SS	Master Seminar Advanced Topics in International Marketing	M2	SE	2
SS	Master Seminar Advanced Topics in Organization: Literature and Practice	M2	SE	6
SS	Master Seminar Applied B2B-Marketing	M2	SE	4
SS	Master Seminar Applied International Marketing	M2	SE	4
SS	Master Seminar Entrepreneurship Theory and Practice	M2	SE	6
SS	Master Seminar Global Strategic Management	M2	SE	3
SS	Master Seminar Globalization: Sociological Perspectives	M2	SE	4
SS	Master Seminar Globalization: Strategic Perspectives	M2	SE	4
SS	Master Seminar Innovation: Marketing Perspectives	M2	SE	4
SS	Master Seminar Innovation: Organizational Perspectives	M2	SE	4
SS	Master Seminar International Business Project	M2	SE	6
SS	Master Seminar Leaders, Groups and their Organizational Environment	M2	SE	6

## Other Social Sciences Courses – Master Level

Sem.	Title	Course type	ECTS credits
WS	Advanced Public Economics	KS	4
WS	Advanced Regression Analysis	KV	4
WS	Advanced Topics	SE	4
WS	Advanced Trade Policy	KS	4
WS	Applied Statistics A	SE	6
WS	Bayes Statistics	KV	4
WS	Biostatistics	KV	4
WS	Computational Statistics	KV	4
WS	Econometrics II	KS	4
WS	Econometrics II	IK	2
WS	Financial Economics and Risk	KS	4
WS	Game Theory	KS	4
WS	Game Theory	IK	2
WS	Mathematics	KS	4
WS	Mathematics	IK	2
WS	Monetary Economics: Theory and Policy	KS	4
WS	Probability Theory	UE	6
WS	Probability Theory	VL	4
WS	Stochastic Processes	KV	4
WS	Survival Analysis	KV	4
SS	Advanced Exchange Rate Theory	KS	3
SS	Advanced Statistical Inference	UE	6



## Other Social Sciences Courses – Master Level

Sem.	Title	Course type	ECTS credits
SS	Advanced Statistical Inference	VO	4
SS	Advanced Topics II - Industrial Economics and Competition Policy	SE	4
SS	Circular Economy: Practice	IK	3
SS	Current Topics in Web Sciences: Social Media Engagement	UE	1,5
SS	Current Topics in Web Sciences: Social Media Engagement	SE	1,5
SS	Experimental Design	KV	4
SS	Feminist Economics	KS	4
SS	Innovation, Design and Quality for the Circular Economy	VO	4
SS	Integrated Quality Design: Project	PJ	4
SS	Macroeconometrics	KS	4
SS	Macroeconomics II	KS	4
SS	Microeconomics II	KS	4
SS	Regulation and Antitrust	KS	4
SS	Special topics in Finance 1	IK	1,5
SS	Statistical Learning	KV	4
SS	The Multinational Firm in the Global Economy	KS	4
SS	Welfare Economics	KS	4

## ENGINEERING AND NATURAL SCIENCES

### Chemistry - Bachelor Level

Sem.	Title	Course Type	ECTS credits
WS	Bachelor's Seminar Biological Chemistry JKU (Including Bache	SE	5,7
WS	Biophysics	VO	3
WS	Biophysics Laboratory	PR	3
WS	Chemical Calculations	KV	3,2
WS	English for Chemistry 1 (understanding)	KV	3,2
WS	English for Chemistry 2 (writing & presenting)	KV	1,6
WS	Exercises in Bioinformatics	UE	3
WS	Exercises in Mathematics for Chemists 1	UE	3,2
WS	Exercises in Physical Chemistry I	UE	1,6
WS	Exercises in Spectroscopy and Structural Elucidation I	UE	1,6
WS	General and Inorganic Chemistry I	VO	5,2
WS	In-depth fundamentals of Preparative Organic Chemistry for B	KV	1,5
WS	Instrumental Analysis	VO	2,6
WS	Introduction I to General Chemistry	VO	1,3
WS	Introduction II to General Chemistry	VO	1,3
WS	Introduction to the Analytical Laboratory	VO	1,3
WS	Laboratory Course of Preparative Organic Chemistry for Biolo	PR	7
WS	Laboratory in Physical Chemistry 1	PR	4,8
WS	Laboratory of Instrumental Analysis	PR	2,4

<b>Chemistry - Bachelor Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Materials Testing and Characterization	VO	2,6
WS	Mathematics for Chemists 1	VO	2,6
WS	Physical Chemistry 1	VO	5,2
WS	Physics for Biological Chemistry 1	KV	1,6
WS	Practical Course in General Chemistry	PR	4,8
WS	Project seminar Technical Chemistry	SE	9,9
WS	Spectroscopy and Structural Elucidation I: Spectroscopic Analytical Techniques (NMR)	VO	1,3
SS	Special topics logic and software design: Formal Models of Parallel and Distributed Systems	VO	3,9
SS	Bachelor's Seminar Biological Chemistry JKU (Including Bache	SE	5,7
SS	Biochemistry	VO	2,6
SS	Biophysics Laboratory	PR	3
SS	English for Chemistry 2 (writing & presenting)	KV	1,6
SS	Exercises in Mathematics for Chemists 2	UE	3,2
SS	Exercises in Mathematics II	UE	3,2
SS	Exercises in Physical Chemistry II	UE	1,6
SS	Exercises in Physics for Biological Chemistry	UE	1,5
SS	Industrial Biotechnology	VO	2,6
SS	Introduction to Genetics	VL	1,5
SS	Laboratory Course of Analytical Chemistry I	PR	8,4
SS	Laboratory in Physical Chemistry 1	PR	9,6
SS	Mathematics for Chemists 2	VO	2,6
SS	Organic Chemistry 1	VO	5,2
SS	Physical Chemistry II	VO	2,6
SS	Physics for Biological Chemistry 2	VO	2,6
SS	Special topics logic and software design: Formal Models of Parallel and Distributed Systems	SE	3

<b>Chemistry – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Advanced NMR 1	VL	1,3
WS	Advanced Polymer Synthesis Lab Course	PR	6
WS	Biochemical Laboratory Techniques	VL	1,3
WS	Catalysis by Metal Complexes	VL	2,6
WS	Characterization and Testing of Polymeric Materials 2	PR	4
WS	Chemistry and Technology of Silicone Elastomers	VL	2,6
WS	Company Visits: Polymer Industry	UE	1
WS	Current Topics in Biological Chemistry: Biocatalysis	VL	1,3
WS	Design of Lightweight Structures	UE	2,5
WS	Design of Lightweight Structures	KV	3
WS	Elements of Structuring in Polymers	VL	1,3
WS	Exercises in Polymer Chemistry 2	UE	1,6
WS	Exercises in Polymerization Techniques	UE	1,6

<b>Chemistry – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Exercises Spectroscopy and Structure Elucidation II	UE	1,6
WS	Experimental Solid Mechanics for Polymeric Components	PR	2,5
WS	Finance, Accounting and Taxation	VL	3
WS	Finance, Accounting and Taxation	IK	3
WS	Formulations of Polymers	VL	1,3
WS	Industrial characterization of polymers	VL	2,6
WS	Industrial Chemistry for Plastic Engineering	VL	1,5
WS	International Finance for Engineers	IK	3
WS	International Marketing for Engineers	IK	3
WS	Lab Course in Industrial characterization of polymers	PR	2,4
WS	Lab Course in Polymerization Techniques	PR	4,8
WS	Laboratory for Technology of Polymer Processing - MPT	PR	2
WS	Management and Marketing	VL	3
WS	Managerial Accounting for Engineers	IK	3
WS	Master's Thesis Seminar Biological Chemistry	SE	3
WS	Master's Thesis Seminar MPT	SE	1
WS	Master's Thesis Seminar PTS	SE	1
WS	Mechanical Material Models for Polymers	KV	3
WS	Molecularly Imprinted Polymers	VL	1,3
WS	Optimization Methods in Polymer Processing	KV	3
WS	Organic Chemistry III (Natural Products)	VL	2,6
WS	Organic Semiconductors: Spectroscopy in organic Semiconducors	VL	3
WS	Organic-Inorganic Hybrid Polymers	VL	1,3
WS	Packaging	VL	2,5
WS	Photochemistry	VL	2,6
WS	Physics and Chemistry of Organic Semiconductors	VL	2,6
WS	Polymer Chemistry 2	VL	2,6
WS	Polymer Extrusion and Compounding 1: Process Technologies	UE	1,5
WS	Polymer Extrusion and Compounding 1: Process Technologies	VL	3
WS	Polymer Injection Moulding 1: Machine Engineering	VL	3
WS	Polymer Injection Moulding 1: Machine Engineering	UE	1,5
WS	Polymer Product Design and Engineering 4: Integrated Injecti	UE	1,5
WS	Polymer Product Design and Engineering III	UE	1
WS	Polymer Product Design and Engineering III	VL	1,5
WS	Polymeric Materials 5 - Polymeric Mat. & Sust. Developm.	KV	3
WS	Polyolefins	VL	1,3
WS	Practical Atomic Force Microscopy	PR	2,4
WS	Practical NMR	PR	2,4
WS	Scientific Tutorial in Polymer Extrusion and Compounding	SE	4,5
WS	Scientific Tutorial in Polymer Injection Moulding	SE	4,5
WS	Scientific Tutorial in Polymeric Materials and Testing	SE	4,5
WS	Selected Topics in Polymer Processing	SE	2

<b>Chemistry – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Seminar Chemical Technology of Inorganic Materials	SE	1,6
WS	Seminar in Biophysical Chemistry	SE	1,6
WS	Seminar in Polymer Extrusion and Compounding	SE	3
WS	Seminar in Polymer Injection Moulding	SE	3
WS	Seminar in Polymer Product Engineering: Applied Biomechanics	SE	3
WS	Seminar in Polymer Product Engineering	SE	3
WS	Seminar in Polymeric Materials and Testing	SE	3
WS	Spectroscopy and Structure Elucidation II	VL	1,3
WS	Stereochemistry	VL	2,6
WS	Structural Health Monitoring	VL	3
WS	Structural Rheology for Chemistry	VL	2,6
WS	Structure and Properties of Biological Materials	VL	1,3
WS	Structure Development in Polymeric Materials	VL	3
WS	Synthetic Polymers for Biology and Medicine	VL	1,5
WS	Viscous Fluid Flow	KV	1
SS	Advanced Instrumental Analysis	PR	2,4
SS	Advanced NMR 2	KV	1,6
SS	Applied Measurement and Control in Polymer Processing	KV	1,5
SS	Bionics - biomimetic Materials and Polymers	VL	1,3
SS	Characterization and Testing of Plastics 1b	PR	1
SS	Characterization and Testing of Polymers 1 - MPT	PR	2,9
SS	Chemical Interactions in Polymers	VL	1,3
SS	Chemical Thin Film Technology	VL	2,6
SS	Chemometrics	VL	2,6
SS	Company Visits: Polymer Industry	UE	1
SS	Cross Cultural Management for Engineers	IK	3
SS	Current Topics in Biological Chemistry: Positron emission tomography radiochemistry	VL	1,3
SS	Engineering with Soft Materials	KV	3
SS	Environmental, Resource and Quality Management for Engineers	IK	3
SS	Excursion Polymer Chemistry	VL	0,6
SS	Finance, Accounting and Taxation	VL	3
SS	Finance, Accounting and Taxation	IK	3
SS	Functional Polymers	VL	1,3
SS	High Resolution Microscopy I - Optical and Electron Microscopy	VL	1,5
SS	High Resolution Microscopy II - Scanning Probe Techniques	VL	1,5
SS	Lab Course in Instrumental Analytical Chemistry for Molecules	PR	3
SS	Laboratory Course of Polymer Chemistry 2	PR	6
SS	Lightweight Design with Composite Materials	UE	1,5
SS	Lightweight Design with Composite Materials	VL	3
SS	Management and Marketing	VL	3
SS	Management and Marketing	IK	3
SS	Managerial Accounting for Engineers	IK	3

<b>Chemistry – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
SS	Master Thesis Seminar in Moleculare Biology	SE	1
SS	Master Thesis Seminar Technical Chemistry	SE	3
SS	Master's Thesis Seminar MPT	SE	1
SS	Master's Thesis Seminar Polymer Chemistry	SE	3
SS	Master's Thesis Seminar PTS	SE	1
SS	Molecular Biologists fit for Non-Academic Careers	VL	1,5
SS	Patent Law and Intellectual Property	VL	2,6
SS	Photovoltaic	VL	3
SS	Physical and theoretical Chemistry	VL	2,6
SS	Physical Chemistry of Surfaces and Interfaces	VL	1,5
SS	Physics and Chemistry of Organic Semiconductors: Electrochemistry of organic semiconductors	VL	2,6
SS	Polymer Extrusion and Compounding 2: Modelling Screw Extrusi	VL	3
SS	Polymer Injection Moulding 2: Process Technologies	KV	3
SS	Polymer Processing	PR	2,5
SS	Polymer Product and Process Development	VL	3
SS	Polymer Product and Process Development Project	PR	4
SS	Polymer Product Design and Engineering 4: Integrated Injecti	VL	3
SS	Polymeric Materials 3: Polymer Mechanics and Fracture Mechan	VL	3
SS	Polymeric Materials 4: Functional Polymeric Materials	SE	1
SS	Polymeric Materials 4: Functional Polymeric Materials	VL	1,5
SS	Polymerization Techniques	VL	2,6
SS	Practical NMR	PR	2,4
SS	Practical Photochemistry	PR	2,4
SS	Practical Training in Molecular Biology Research I	PR	9
SS	Practical Training in Molecular Biology Research II	PR	9
SS	Preparative Chemistry Laboratory for Biological Chemists	PR	6
SS	Protein Science	VL	1,3
SS	Safety Analysis and Modeling	KV	3
SS	Scientific Tutorial in Polymer Injection Moulding	SE	4,5
SS	Scientific Tutorial in Polymer Product Engineering	SE	4,5
SS	Scientific Tutorial in Polymeric Materials and Testing	SE	4,5
SS	Seminar in Polymer Product Engineering	SE	3
SS	Seminar in Polymeric Materials and Testing	SE	3
SS	Seminar in Structural and Computational Biochemistry	SE	1,6
SS	Seminar on Bioinorganic and Biomimetic Systems	SE	1,6
SS	Special topics numerical analysis: Shape Optimization	VL	3
SS	Special topics numerical analysis: Parallel Scientific Computing	SE	3
SS	Special Topics of Polymer Chemistry	VL	1,5
SS	Structural Durability Calculations	UE	1,5
SS	Structural Integrity Assesment of Polymer Structures	KV	3
SS	Technical Biopolymers	VL	1,3

<b>Computer Science - Bachelor Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Artificial Intelligence	UE	1,5
WS	Artificial Intelligence	VO	3
WS	Bachelor's Seminar	SE	6
WS	Bioinformatics	VO	3
WS	Logic	UE	1,5
WS	Logic	VL	3
WS	Project Practical	PR	7,5
WS	Project Practical: Computer Graphics BSc	PR	7,5
WS	Sequence Analysis and Phylogenetics	UE	3
WS	Sequence Analysis and Phylogenetics	VL	3
WS	Software Engineering	UE	1,5
WS	Software Engineering	VO	3
WS	Systems Programming	PR	3
WS	Topics in Genetics & Evolution	KV	3
SS	Algebra	UE	3
SS	Bachelor's Seminar	SE	6
SS	Computer Graphics	UE	1,5
SS	Computer Graphics	VO	3
SS	Formal Models	UE	1,5
SS	Formal Models	VO	3
SS	Genome Analysis & Transcriptomics	KV	3
SS	Information Systems for Bioinformatics	KV	6
SS	Introduction to R	KV	3
SS	Project Practical	PR	7,5
SS	Structural Bioinformatics	KV	3

<b>Computer Science – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Advanced Model Engineering	KV	3
WS	Assistive Technologies and Accessibility	KV	3
WS	Basic Methods of Data Analysis	KV	3
WS	Basics in Chemistry for Bioinformatics	KV	1,5
WS	Cloud Security	KV	3
WS	Computer Forensics and IT Law	VL	3
WS	Computer Vision	KV	4,5
WS	Emerging Computer Technologies	KV	4,5
WS	Formal Methods in Software Development	KV	4,5
WS	Genome Assembly	KV	3
WS	Human/Computer Interaction	VL	3

## Computer Science – Master Level

Sem.	Title	Course Type	ECTS credits
WS	Information Retrieval and Extraction	KV	3
WS	Information Security Management	VL	3
WS	Introduction to IT Security	VL	3
WS	Knowledge Based Systems	KV	3
WS	Machine Learning: Supervised Techniques	UE	1,5
WS	Machine Learning: Supervised Techniques	VL	3
WS	Master's Seminar	SE	3
WS	Master's Thesis Seminar WS	SE	8
WS	Mobile Computing	KV	3
WS	Model Checking	KV	4,5
WS	Modeling and Computer Simulation	KV	3
WS	Multimedia Search and Retrieval	KV	4,5
WS	Numerical and Symbolic Methods for Bioinformatics	KV	3
WS	Pervasive Computing: Design and Development	UE	1,5
WS	Pervasive Computing: Design and Development	VL	3
WS	Pervasive Computing: Systems and Environments	UE	1,5
WS	Pervasive Computing: Systems and Environments	VL	3
WS	Principles of Programming Languages	KV	3
WS	Probabilistic Models	UE	1,5
WS	Probabilistic Models	VL	3
WS	Project Bioinformatics	PR	9
WS	Project in Computational Engineering	PR	7,5
WS	Project in Intelligent Information Systems	PR	7,5
WS	Project in Pervasive Computing: Computer Graphics MSc	PR	7,5
WS	Project in Pervasive Computing	PR	7,5
WS	Project in Software Engineering	PR	7,5
WS	Requirements Engineering	KV	3
WS	Seminar Bioinformatics	SE	3
WS	Seminar in Computational Engineering: Design of Digital Circuits and Systems	SE	3
WS	Seminar in Computational Engineering: Automated Reasoning	SE	3
WS	Seminar in Computational Engineering: Computational Perception	SE	3
WS	Seminar in Computational Engineering: Bioinformatics and Machine Learning	SE	3
WS	Seminar in Intelligent Information Systems: Information Integration	SE	3
WS	Seminar in Intelligent Information Systems: Crowd Knowledge Extraction	SE	3
WS	Seminar in Intelligent Information Systems: Cloud Computing	SE	3
WS	Seminar in Intelligent Information Systems: Achieving Situation Awareness: Mining, Understanding, and Ex	SE	3
WS	Seminar in Intelligent Information Systems: Assistive Technologies	SE	3
WS	Seminar in Networks and Security: Biometrics and Cryptography	SE	3
WS	Seminar in Networks and Security: Security in Information Systems	SE	3
WS	Seminar in Pervasive Computing: Computer Graphics	SE	3
WS	Seminar in Software Engineering: Parallel and Concurrent Programming	SE	3
WS	Seminar in Software Engineering	SE	3

## Computer Science – Master Level

Sem.	Title	Course Type	ECTS credits
WS	Special Topics: Android Security	KV	1,5
WS	Special Topics: Cyber-Physical Systems - Modeling and Verification	KV	1,5
WS	Special Topics: Computer Forensics and IT Law	UE	1,5
WS	Special Topics: Visual Analytics	UE	1,5
WS	Special Topics: Functional Programming in Java 8	KV	3
WS	Special Topics: Decision Procedures and SMT	KV	3
WS	Special Topics: Exploratory Data Analysis	KV	3
WS	Special Topics: e-Government	KV	3
WS	Special Topics: Industrialized Software Development: Methods and Tools in Pr	KV	3
WS	Special Topics: Adaptive and Array Signal Processing	KV	3
WS	Special Topics: Data Warehousing	KV	3
WS	Special Topics: Mechatronical Systems	VL	3
WS	Special Topics: Mathematical Logic I	KV	4,5
WS	System Administration	KV	3
WS	System Software	KV	3
WS	Visual Analytics	VL	3
WS	VLSI Design	KV	3
WS	Web Engineering	KV	3
SS	Accessible Software and Web Design	KV	1,5
SS	Advanced Compiler Construction	KV	3
SS	Application Oriented Knowledge Processing	KV	3
SS	Capacity Planning	KV	3
SS	Conceptual Data Modeling	KV	3
SS	Cryptography	KV	3
SS	Deep Learning and Neural Networks	KV	3
SS	Hardware Design	UE	1,5
SS	Hardware Design	VL	3
SS	Information Visualization	KV	4,5
SS	Integrated Information Systems	KV	3
SS	Introduction into Instrumental Analytics for Life-Sciences	KV	3
SS	Learning from User-generated Data	KV	4,5
SS	Machine Learning and Pattern Classification	KV	4,5
SS	Machine Learning: Unsupervised Techniques	UE	1,5
SS	Machine Learning: Unsupervised Techniques	VL	3
SS	Master's Seminar	SE	3
SS	Master's Thesis Seminar SS	SE	8
SS	Model-driven Engineering	KV	3
SS	Modeling Internet Applications	KV	3
SS	Network Management	KV	3
SS	Network Security	KV	1,5
SS	Parallel Computing	KV	4,5
SS	Principles of Cooperation	UE	1,5



<b>Computer Science – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
SS	Principles of Cooperation	VL	3
SS	Principles of Interaction	UE	1,5
SS	Principles of Interaction	VL	3
SS	Product Line Engineering	KV	3
SS	Project in Computational Engineering	PR	7,5
SS	Project in Intelligent Information Systems	PR	7,5
SS	Project in Intelligent Information Systems: Assistive Technologies	PR	7,5
SS	Project in Networks and Security: Social Media	PR	7,5
SS	Project in Networks and Security	PR	7,5
SS	Project in Pervasive Computing	PR	7,5
SS	Project in Pervasive Computing: Computer Graphics MSc	PR	7,5
SS	Project in Software Engineering	PR	7,5
SS	Secure Code	KV	1,5
SS	Security Models in Information Systems	KV	3
SS	Semantic Data Modeling and Applications	KV	3
SS	Seminar in Computational Engineering: Design of Digital Circuits and Systems	SE	3
SS	Seminar in Intelligent Information Systems: Multimedia Information Retrieval	SE	3
SS	Seminar in Intelligent Information Systems	SE	3
SS	Seminar in Intelligent Information Systems: Crowd Knowledge Extraction	SE	3
SS	Seminar in Intelligent Information Systems: Case Management: Standards, Technologies and Tools	SE	3
SS	Seminar in Intelligent Information Systems: Social Media Mining	SE	3
SS	Seminar in Intelligent Information Systems: Assistive Technologies	SE	3
SS	Seminar in Pervasive Computing	SE	3
SS	Seminar in Pervasive Computing: Computational Perception	SE	3
SS	Seminar in Pervasive Computing: Internet of Things - Communicating with Machines and Objects	SE	3
SS	Seminar in Software Engineering: Human-Computer Interaction	SE	3
SS	Seminar in Software Engineering: Empirical Software Engineering	SE	3
SS	Software Architectures	KV	4,5
SS	Software Processes and Tools	KV	3
SS	Software Testing	KV	3
SS	Special Topics: Dynamic Compilation and Run-time Optimization in Virtual Mac	KV	1,5
SS	Special Topics: Audio and Music Processing	KV	3
SS	Special Topics: Datawarehouses	KV	3
SS	Special Topics: Process-Aware Information Systems	KV	3
SS	Special Topics: Mobile Media Design	KV	3
SS	Special Topics: Writing Parallel Applications under .NET	KV	1,5
SS	Special Topics: Java Performance Monitoring and Benchmarking	KV	1,5
SS	Special Topics: Algorithmic Discrete Mathematics	KV	1,5
SS	Special Topics: mobile, intelligent robots	VL	1,5
SS	Special Topics: Programming in Mathematica	KV	3
SS	Special Topics: Formal Specification of Software	KV	3
SS	Special Topics: Functional Programming	VL	3

## Computer Science – Master Level

Sem.	Title	Course Type	ECTS credits
SS	Special Topics: Formal Models of Parallel and Distributed Systems	VL	3
SS	Special Topics on Bioinformatics (Biology/Chemistry/Physics/: Population genetics	KV	3
SS	Systems Security	KV	3
SS	Theoretical Concepts of Machine Learning	UE	1,5
SS	Theoretical Concepts of Machine Learning	VO	3
SS	Web Information Systems	KV	4,5
SS	Web Search and Mining	KV	3
SS	Wireless LANs	KV	1,5

## Mathematics - Bachelor Level

Sem.	Title	Course Type	ECTS credits
WS	Algorithmic combinatorics	UE	1,5
WS	Computer Algebra	VL	3
WS	Design and Analysis of Algorithms	VL	3
WS	Fuzzy logic	UE	1,5
WS	Fuzzy logic	VO	3
WS	Information systems	KV	3
WS	Logic programming	KV	3
WS	Mathematical logic 1	UE	1,5
WS	Numerical methods for partial differential equations	UE	3
WS	Seminar algebra and discrete mathematics: Research Seminar	SE	3
WS	Seminar Geometry: Recent Results in Computer Aided Geometric Design and Isogeometric Analysis	SE	3
WS	Seminar logic and software design: Automated theorem proving I: Theorema: Autom. Reasoning in Natural Style	SE	3
WS	Seminar logic and software design: Project seminar Formal Methods I	SE	3
WS	Seminar symbolic computation: Computer-Algebra I	SE	3
WS	Seminar symbolic computation: Algorithmic Algebra	SE	3
WS	Seminar symbolic computation: Project seminar Algorithmic Combinatorics I	SE	3
WS	Seminar symbolic computation: Project seminar Computer-Algebra I	SE	3
WS	Special topics numerical analysis: Isogeometric Analysis	UE	1,5
WS	Special topics numerical analysis: Isogeometric Analysis	VL	3
WS	Special topics numerical analysis: Introduction to Maxwell's Equations	UE	1,5
WS	Special topics numerical analysis: Introduction to Maxwell's Equations	VL	3
WS	Special Topics symbolic computation: Computer algebra systems	VL	3
WS	Thinking, Speaking, Writing: Understanding and Creating Mathematical Proofs	VO	3
WS	Thinking, Speaking, Writing: Communication of Scientific Results	VO	3
SS	Analysis 2	UE	3
SS	Commutative algebra and algebraic geometry	UE	1,5
SS	Cryptography: Elliptic Curves	VO	3
SS	Dynamical systems and chaos	UE	1,5
SS	Formal Semantics of Programming Languages	VL	3

<b>Mathematics - Bachelor Level</b>			
Sem.	Title	Course Type	ECTS credits
SS	Formal Semantics of Programming Languages	SE	3
SS	Functional programming	KV	3
SS	Fuzzy control: Fuzzy Control	UE	1,5
SS	Fuzzy control: Fuzzy Control	VO	3
SS	Linear algebra and analytic geometry 2	UE	3
SS	Logic as a working language	KV	3
SS	Mathematical logic 2	VO	3
SS	Numerical methods for elliptic equations	UE	3
SS	Numerical methods in continuum mechanics 1	UE	1,5
SS	Partial differential equations	UE	3
SS	Programming in Mathematica	KV	3
SS	Rewriting in Computer Science and Logic	VL	3
SS	Rewriting in Computer Science and Logic	SE	3
SS	Seminar algebra and discrete mathematics: Research Seminar	SE	3
SS	Seminar Geometry: Algebraic Spline Curves and Surfaces	SE	3
SS	Seminar logic and software design: Project seminar Automated theorem proving II: Theorema Mathematical Theory Exploration	SE	3
SS	Software engineering	KV	3
SS	Special Topics algebra and discrete mathematics: Galois Theory	VL	3
SS	Special Topics Geometry: Geometry and Simulation	VL	3
SS	Special Topics Geometry: Geometry and Simulation	SE	3
SS	Special topics logic and software design: Formal Languages and Formal Grammars	VL	3
SS	Special topics logic and software design: Formal Models of Parallel and Distributed Systems	VL	3
SS	Special topics numerical analysis: Shape Optimization	VL	3
SS	Special topics numerical analysis: Parallel Scientific Computing	VL	3

<b>Mathematics – Master Level</b>			
Master curriculum contains electives to be selected from the 3 <sup>rd</sup> year Bachelor curriculum			
Sem.	Title	Course Type	ECTS credits
WS	Algorithmic combinatorics	VO	3
WS	Differential geometry	VO	3
WS	Formal methods in software development	KV	6
WS	Integral equations and boundary value problems	VO	6
WS	Mathematical logic 1	VO	6
WS	Statistical methods	VO	3
WS	Seminar for graduate and doctoral students	SE	3
SS	Commutative algebra and algebraic geometry	VO	6
SS	Dynamical systems and chaos	VO	3
SS	Numerical methods for elliptic equations	VO	6
SS	Numerical methods in continuum mechanics 1	VO	3
SS	Practical software technology	KV	6

## Mathematics – Master Level

Master curriculum contains electives to be selected from the 3<sup>rd</sup> year Bachelor curriculum

Sem.	Title	Course Type	ECTS credits
SS	Stochastic simulation	VO	3
SS	Seminar algebra and discrete mathematics: Research Seminar	SE	3
SS	Seminar Geometry: Algebraic Spline Curves and Surfaces	SE	3
SS	Special Topics algebra and discrete mathematics: Galois Theory	SE	3

## Mechatronics – Master Level

Sem.	Title	Course Type	ECTS credits
WS	Structure Analysis with Finite Element Methods	KV	1,5
SS	Energy systems control	UE	1,25
SS	Energy systems control	VO	3
SS	Numerical Methods in Fluid Mechanics	VO	3
SS	Oil Hydraulics	KV	4,5
SS	Selected Chapters of Mechanisms and Gear Trains	KV	3
SS	Special Topics of Control Systems Design	UE	1,25
SS	Special Topics of Control Systems Design	VO	3
SS	Theoretical Modelling of Biological Systems	UE	3
SS	Theoretical Modelling of Biological Systems	VL	3

## Physics - Bachelor Level

Sem.	Title	Course Type	ECTS credits
WS	Fundamentals of Physics III (Waves, Optics, Photonics)	UE	3
WS	Project seminar Technical Physics	SE	9
SS	Introduction to programming I	PR	3
SS	Project seminar Technical Physics	SE	9
SS	Special topics logic and software design: Formal Languages and Formal Grammars	VL	3

## Physics – Master Level

Sem.	Title	Course Type	ECTS credits
WS	Bioanalytics I	UE	1,5
WS	Bioanalytics I	VO	3
WS	Biophysics III	VO	3
WS	Laser physics	UE	1,5
WS	Laser physics	VO	3
WS	Literature seminar in applied physics	SE	3
WS	Literature seminar in semiconductor physics	SE	3
WS	Literature seminar in Solid State Physics	SE	3
WS	Literature seminar in surface and nano analytics	SE	3

<b>Physics – Master Level</b>			
Sem.	Title	Course Type	ECTS credits
WS	Molecular biology of the cell I	VO	3
WS	Molecular biology of the cell I	UE	1,5
WS	Nanofabrication I: Growth and Self-Organization	PR	1,5
WS	Nanofabrication I: Growth and Self-Organization	VO	3
WS	Physics of low dimensional systems	UE	1,5
WS	Physics of low dimensional systems	VO	4,5
WS	Quantum electronics and optics	UE	1,5
WS	Quantum electronics and optics	VO	3
WS	Research seminar in surface and nano analytics	SE	3
WS	Selected Topics on Biophysics: Mechanisms of Membrane Transport	SE	3
WS	Semiconductor physics for advanced students	UE	1,5
WS	Seminar in applied physics: Applications of Light-Induced Phenomena	SE	3
WS	Seminar in Nanoscience and -Technology	SE	3
WS	Seminar in physics of soft materials: Hydrogels	SE	3
WS	Seminar in semiconductor physics: Methods of experimental semiconductor physics	SE	3
WS	Seminar in surface and nano analytics: surface analytics	SE	3
WS	Seminar in theoretical physics: Non-equilibrium physics	SE	3
WS	Special topics in Applied Physics: Molecule Physics	VO	3
WS	Special topics in Nanoscience: Magnetic resonance	VO	3
WS	Special topics in semiconductor physics: X-Ray Analysis	VO	3
WS	Special topics in soft matter physics: Flexible and stretchable electronics	VO	3
WS	Special topics in surface and nano analytics: electron spectroscopie	VO	3
WS	Special topics in theoretical physics: Theoretical optics	VO	3
WS	Superconductivity and low temperature physics	UE	1,5
WS	Surface and nano analytics lab (experimental)	PR	9
WS	Surface science II	UE	1,5
WS	Using Computers in Science: Numerical methods	VO	3
SS	Advanced Microscopy: Electron Microscopy and Spectroscopy	VO	3
SS	Advanced practical course	PR	4,5
SS	Bioanalytics II	UE	1,5
SS	Bioanalytics II	VO	3
SS	Computational Physics II	UE	1,5
SS	Computational Physics II	VO	3
SS	Formal Semantics of Programming Languages	SE	3
SS	Literature seminar in applied physics	SE	3
SS	Literature seminar in surface and nano analytics	SE	3
SS	Nanoelectronics	VO	3
SS	Nanofabrication II: Semiconductor Technology: Top Down	PR	1,5
SS	Nanofabrication II: Semiconductor Technology: Top Down	VO	3
SS	Nanooptics	VO	3
SS	Optoelectronic devices	VO	3
SS	Photonics	UE	1,5

## Physics – Master Level

Sem.	Title	Course Type	ECTS credits
SS	Photonics	VO	3
SS	Physics of Soft Matter	VO	3
SS	Research seminar in biophysics	SE	3
SS	Research seminar in surface and nano analytics	SE	3
SS	Semiconductor physics	UE	1,5
SS	Semiconductor physics	VO	3
SS	Seminar in applied physics: Applications of Lasers in Modern Life	SE	3
SS	Seminar in physics of soft materials	SE	3
SS	Seminar in semiconductor physics: Integrated Quantum Optics	SE	3
SS	Seminar in surface and nano analytics: surface analytics	SE	3
SS	Seminar in theoretical physics: Theory of energytransfer	SE	3
SS	Seminar logic and software design: Project seminar Automated theorem proving II: Theorema Mathematical Theory Exploration	SE	3
SS	Smart Materials	VO	3
SS	Special Topics Geometry: Geometry and Simulation	KV	3
SS	Special topics in Nanoscience: Quantum Dots	VO	3
SS	Special topics in semiconductor physics: Topology and physics	VO	3
SS	Special topics in soft matter physics: Flexible and stretchable electronics	VO	3
SS	Special topics in theoretical physics: Quantum Chemistry	VO	3
SS	Surface science I	UE	3
SS	Vacuum technology and physics	VO	3

## LAW

### Law Courses

Sem.	Title	Course Type	ECTS credits
WS	Common Law Civil Procedure	VL	1,5
WS	International Commercial Arbitration	VL	1,5
WS	Management and Marketing	IK	3
WS	Precourse Legal English	KV	3
WS	Public International Law	VL	1
WS	Purchase tax and transfer tax	PS	5,5
SS	Austrian Bankruptcy Law	VL	1,5
SS	Finance, Accounting and Taxation	IK	3
SS	Management and Marketing	IK	3
SS	Precourse Legal English	KV	3
SS	Public International Law	VL	1
SS	Selected Topics: Common Law Legal Order/US Bankruptcy Law	VL	1,5

# GERMAN AS A FOREIGN LANGUAGE

The following levels and courses are offered throughout the semester:

## Beginners' Level

- German as a Foreign Language - Basic Course I (exit level A1.2), 6 hours per week, 6 ECTS credits
- German as a Foreign Language - Basic Course II (exit level A2.1), 6 hours per week, 6 ECTS credits

The courses Basic I and Basic II German cannot be attended simultaneously.

## Intermediate Level

- German - Phonetics, 1 hour per week, 1 ECTS credit
- German as a Foreign Language - Intermediate I (exit level A2.2), 6 hours per week, 6 ECTS credits
  - + German - Text Production Intermediate I (exit level A2), 2 hours per week, 2 ECTS credits
- German as a Foreign Language - Intermediate II (exit level B1), 6 hours per week, 6 ECTS credits
  - + German - Text Production Intermediate II (exit level B1), 2 hours per week, 2 ECTS credits
  - + German as a Foreign Language - Grammar in Situations I (exit level B1), 2 hours per week, 2 ECTS credits

The courses Intermediate I and Intermediate II German cannot be attended simultaneously.

## Advanced Level

- German as a Foreign Language – Advanced I (exit level B2), 4 hours per week, 6 ECTS credits
- German as a Foreign Language – Advanced II (exit level C1), 4 hours per week, 6 ECTS credits
- German as a Foreign Language - Grammar in Situations II (exit level B2/C1), 2 hours per week, 2 ECTS credits
- German - Text Production Intermediate III (exit level B2), 2 hours per week, 2 ECTS credits

The courses Advanced I and Advanced II cannot be attended simultaneously.

In addition to the above mentioned courses, there is one course with a special status:

- Certificate Preparation Course German (2 semester hours per week, 3 ECTS credits) prepares students to take the ÖSD examinations (Austrian Language Certificate) at three different levels ("Zertifikat", "Mittelstufe" and "Diplom Wirtschaftsdeutsch"). The minimum entry requirement is the successful completion of "Intermediate I" (A2). The course is open to all students interested in preparing for and taking these examinations.