

# List of courses Bachelor Study Bioinformatics USB České Budějovice - JKU Linz

Version WS2018

B = in Budweis / L = in Linz

			Year 1		Year 2		Year 3		
			Sem1 / B	Sem2 / B	Sem3 / L	Sem4 / L	Sem5 / B	Sem6 / L	
			ECTS	ECTS	ECTS	ECTS	ECTS	ECTS	
<b>FACH: Computer Science</b>	<b>Typ</b>	<b>675COSC16</b>							
MODUL: Python Basics	(3h)	675COSCYPB18	4						
MODUL: Algorithms and Data Structures	(3h)	675COSCADS13	4						
MODUL: Applied Programming	(2h)	675COSCAPR18		3					
<b>FACH: Information Systems</b>		<b>675INSY18</b>							
Informationssysteme 1	2UE	INBIPUEIFS1			3				
Informationssysteme 1	2VL	INBIPVOIFS1			3				
Information Systems for Bioinformatics	4KV	675SEISIBK16						6	
FACH: Introduction to R		675INTR13							
Introduction to R	2KV	675INTRITRK13				3			
MODUL: Parallel Programming		675COSCPAP13					4		ECTS
			8	3	6	3	4	6	30
<b>FACH: Mathematics</b>	<b>Typ</b>	<b>675MATH18</b>							
MODUL: Calculus I	(4h)	675MATHCA113	6						
MODUL: Linear Algebra	(2h)	675MATHLIA13	3						
MODUL: Calculus II	(5h)	675MATHCA218		5					
MODUL: Probability and mathematical statistics I	(2h)	675MATHPM118		3					
MODUL: Biostatistics	(4h)	663BIOLBST12					5		ECTS
			9	8	0	0	5	0	22
<b>FACH: Bioinformatics</b>	<b>Typ</b>	<b>675BINF18</b>							
MODUL: Introduction to Bioinformatics	(4h)	675BINFINB13		6					
FACH: Genome Analysis & Transcriptomics and Structural Bioinformatics		675GTSB16							
Genome Analysis & Transcriptomics	2KV	675GTSBGATK13				3			
Structural Bioinformatics	2KV	675GTSBSTBK13				3			
Topics in Genetics & Evolution	2KV	675GTSBTGEK15			3				
Sequence analysis and phylogenetics	2VL	675GTSBSAPV16			3				
Sequence analysis and phylogenetics	2UE	675GTSBSAPU16			3				
FACH: Machine Learning		675MALE18							
Artificial Intelligence	2VL	INBIPVOAINT			3				
MODUL: Bioinformatics Project	(8h)	675BINFBIP13					8		ECTS
			0	6	12	6	8	0	32
<b>FACH: Chemistry</b>	<b>Typ</b>	<b>675CHEM18</b>							
MODUL: General Chemistry	(2h)	675CHEMGCH13		3					
FACH: Bioanalytics		675BIAN13							
Bioanalytics I	2VL	470WEBIBA1V14			3				
Bioanalytics I	1UE	470WEBIBA1U14			1,5				
FACH: Organic Chemistry		675ORCH13							
Chemie für Physiker II	2VL	LP2PCVOCHP2			3				
Biochemistry	2VL	290MAFSBICV18				3			
MODUL: Computational Chemistry and Mol. Modelling of Biomolecules	(3h)	675CHEMCCM17					4		ECTS
			0	3	7,5	3	4	0	17,5
<b>FACH: Biology</b>	<b>Typ</b>	<b>675BIOL13</b>							
MODUL: Biology of microorganisms	(3h)	663BIOLBMI18	4						

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<i>MODUL: Introduction to Cell Biology</i>	(1h)	663BIOLICB18	1						
<i>MODUL: Molecular Biology and Genetics</i>	(2h)	663MOBIMAG12	3						
<i>MODUL: Diversity of life</i>	(3h)	675BIOLDOL13		5					
<i>MODUL: Introduction to Genomics</i>	(2h)	675BIOLITG13		3					
<i>MODUL: Molecular Phylogenetics</i>	(4h)	675BIOLMOP13					6		ECTS
			8	8	0	0	6	0	22
<b>FACH: Soft Skills</b>	<b>Typ</b>	<b>675SOSK18</b>							
<i>MODUL: Academic Writing for Cross Border Studies</i>	(2h)	663KOETAWC15		3					
<i>MODUL: Ethics</i>	(2h)	675SOSKETH13	3						
<i>FACH: Gender Studies</i>		675GEND13							
Gender Studies TNF - Einführung <i>or</i>	2KV	GS-TNE				3			
Gender Studies und Soziale Kompetenz <i>or</i>	2KV	GS-SK2							
Ethik und Gender Studies <i>or</i>	2KV	INBIPKVETHG							
Einführung in IKT, Gesellschaft, Gender und Diversity	2KS	526SGAIGENK14							
<i>FACH: English for Scientists</i>		675ENSC18							
Scientific Writing and Presenting	2KV	290GESKSWPK18			3				
			3	3	3	3	0	0	12

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			Year 1		Year 2		Year 3	
			1. Sem / B	2. Sem / B	3. Sem / L	4. Sem / L	5. Sem / B	6. Sem / L
			ECTS	ECTS	ECTS	ECTS	ECTS	ECTS
<b>FACH: Area of Specialisation</b>	<b>Typ</b>	<b>675ARSP18</b>						
<i>MODUL: Advanced Database Systems</i>		675ARSPADS13						
<i>MODUL: Epigenetics</i>		675ARSPEPG13						
<i>MODUL: Introduction to Immunology</i>		675ARSPINI13						
<i>MODUL: Methods in Molecular Biology</i>		675ARSPMMB13						
<i>MODUL: Molecular Ecology</i>		675ARSPMOE13						
<i>MODUL: Project Management and its Economy</i>		675ARSPPME13						
<i>MODUL: Basic Methods of Molecular Biology</i>		675ARSPBMM14						
<i>MODUL: Evolutionary Genomics</i>		675ARSPEVG14						
<i>MODUL: Vertebratological Excursion</i>		675ARSPVEE14						
<i>MODUL: Polar Ecology</i>		675ARSPVPEC14						
<i>MODUL: Polar Ecology (Life Science)</i>		675ARSPVEL14						
<b>Offer at JKU in winter term:</b>								
Chemical Calculations	2KV/3ECTS	290GICHCCA18						
Biologische Signalisierung I	3VO/3ECTS	TPMPBVOBIS1						
Charakterisierung von Bio-Nanostrukturen	2VL/3ECTS	TPMPBVOCBIN						
Stochastische Prozesse	2VL/3ECTS	TMBPAVOPROZ						
Software Engineering	1UE/1,5ECTS	INBIPUESENG						
Software Engineering	2VL/3ECTS	INBIPVOSENG						
Biometrische Identifikation	2VL/3ECTS	INMAWVOBIDE						
Computer Forensics and IT Law	2VL/3ECTS	921NESECILV13						
Human/Computer Interaction	2VL/3ECTS	921CGELHCIV13						
Biophysik I für Molekulare Biowissenschaften	3VL/4,5ECTS	665PBDABPHV16						
Physik für Molekulare Biowissenschaften	2VL/3ECTS	665PBDAPHYV16						
Advanced NMR 1	1VL/1,3ECTS	491WORCAN1V10						
Computer Algebra	1UE/1,5ECTS	201ALGECALU12						
Computer Algebra	2VL/3ECTS	201ALGECALV12						
Markov-Ketten	1UE/1,5ECTS	TM1WCUEMARK						
Markov-Ketten	2VL/3ECTS	TM1WCVOMARK						
Stochastische Prozesse	1UE/1,5ECTS	TM1WCUEPROZ						
Biophysik I	2VL3ECTS	261BIPHBIPV15						
Stochastic Processes	2KV/4ECTS	951MATSSPRK14						
<b>Offer at JKU in summer term:</b>								
Advanced NMR 2	1KV/1,6ECTS	863STBCAN2K10						
Biologische Signalisierung II	1,5VL	TPMWBVOBIS2						
Biophysik II	1VO/1,5ECTS	TPMPBVOBIP2						
Advanced Topics of Molecular Biotechnologies	2VU/3ECTS	865AABBATMU16						
Mikroskopie an Biomolekülen	2VL/3ECTS	TPMPBVOMIBI						
Stochastische Simulation	1UE/1,5ECTS	TMCPAUESIMU						
Stochastische Simulation	2VL/3ECTS	TMCPAVOSIMU						
Inverse Probleme	2VL/3ECTS	TMBPAVOINVE						
Application Oriented Knowledge Processing	2KV/3ECTS	921CGELAOKK13						
Parallel Computing	3KV/4,5ECTS	921COENPACK13						

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Software Architectures	3KV/4,5ECTS	921SOENSARK13							
Software Testing	2KV/3ECTS	921SOENSOTK13							
Theoretical Concepts of Machine Learning	1UE/1,5ECTS	INMAWUETCML							
Theoretical Concepts of Machine Learning	2VL/3ECTS	INMAWVOTCML							
Web Search and Mining	2KV/3ECTS	921CGELWSMK13							
Statistische Signalverarbeitung	2VL/3ECTS	MEMWVDVOSTSV							
Genomische Datenanalyse	4VU/6ECTS	665MBBTGEDU16							
Diskrete Optimierung	1UE/1,5ECTS	TM1WGUEDOPT							
Diskrete Optimierung	2VL/3ECTS	TM1WGVODOPT							
Inverse Probleme	1UE/1,5ECTS	TM1WEUEINVE							
Logik als Arbeitssprache	2KV/3ECTS	TM1PGKVLOGA							
Optimierung	3VL/4,5ECTS	01NUOPOPTV18							
Optimierung	1UE/1,5ECTS	201NUOPOPTU18							
Computer Algebra for Concrete Mathematics	2VL/3ECTS	201SYMRCACV12							
Machine Learning and Pattern Classification	3KV/4,5ECTS	921PECOMLPK13							
					4	9	3	9,5	ECTS
			0	0	4	9	3	9,5	25,5
<b>FACH: Bachelor's Thesis</b>	<b>Typ</b>	<b>675BAAR13</b>							
Bachelor's Seminar	1SE	675BAARBASS13						6	ECTS
			0	0	0	0	0	6	6
<b>FACH: Free Electives</b>	<b>Typ</b>	<b>675FRST13</b>							
						3	3	3	
									ECTS
			0	0	0	3	3	3	9
			28	31	32,5	27	33	24,5	176
Bachelor's Examination (USB)									4
									<b>180</b>

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